

OCCUPATIONAL STRESS AND JOB PERFORMANCE

Dr Naresh Kumar

Professor and Chairman, University School of Management,
Kurukshetra University, Kurukshetra
Email ID : nareshkumar@kuk.ac.in

Ms Vandana Singh

Research Scholar, University School of Management,
Kurukshetra University, Kurukshetra
Email ID : vandana_10march@yahoo.co.in

ABSTRACT

The present study attempts to examine the relationship between occupational stress (which includes Organizational Role Stress and Job Related Tension) and job performance among Information Technology professionals. The data pertaining to the study have been collected from 400 Information Technology professionals working in various Information Technology Multinational Companies. The obtained results reveal that the professionals express moderate level of job related tensions and high level of organizational role stress. Their job performance is negatively related to organizational role stress and job related tensions. Both organizational role stress and job related tensions are found significant predictors of job performance

Key Words: Job Performance, Organizational Role Stress, Job related Tensions

INTRODUCTION

Performance is an extremely important criterion that relates to organizational outcomes and success. Performance refers to a set of outcomes produced during a certain period of time, and does not refer to the traits or personal characteristics of the performer (Romanoff, 1989). Job performance has two aspects — behavior being the means and its consequence being the end (Gilbert, 1998) Job Performance is affected by the stress that an individual feels at his or her workplace, this is generally referred to as occupational stress. Further, each individual is exposed to a range of stressors both at work and in their personal lives which ultimately affect his or her performance. Moderate level of pressure at work can be positive leading to increased productivity. However, when this pressure becomes excessive it has a negative impact. This exposes an important factor i.e. occupational stress. Based on a number of different occupational stress theories and practices Beehr and Franz (1986) identified four approaches to studying occupational stress: medical, clinical/ counseling psychology, engineering psychology, and organizational psychology.

The term stress is derived from the Latin word stringere, which means 'to draw tight', and was used in this way in the 17th century to describe a hardship or an affliction (Cartwright & Cooper, 1997). Later in the 18th century the term stress referred primarily to an individual's 'force, pressure, strain or strong effort'. These early definitions

used in physics and engineering began to influence the notion that stress may affect individuals, where forces are seen to exert pressure on an individual, producing strain (Hinkle, 1977).

Models of occupational stress (also termed job stress or work stress) have generally accepted the transactional model of stress proposed by Lazarus (1966), at least from a theoretical perspective, suggesting that stress results from the transaction or the interaction between the individual and the environment. Empirical work has predominantly used this interactional approach to assess occupational stress and its outcomes (Cooper et al., 2001).

In the present study the term occupational stress includes, Organizational Role Stress with sub variables (Inter Role Distance (IRD), Role Stagnation (RS), Role Expectation Conflict (REC), Role Erosion (RE), Role Overload (RO), Role Isolation (RI), Personal Inadequacy (PI), Self-Role Distance (SRD), Role Ambiguity (RA), and Resource Inadequacy (RIn)) and job related tensions.

Here an attempt has been made to know how the above mentioned variables affect the job performance of individuals (IT professionals) working in highly dynamic and competitive IT industry

REVIEW OF LITERATURE

Miles and Perreault (1976) identified four different types of role conflict Viz. Intra-sender role conflict, Inter sender role conflict, Person- role conflict and Role overload. Brief & Aldag, (1976) and Greene (1978) revealed that role incumbents with high levels of role ambiguity respond to their situation with perceptions of lower performance on the part of the organization, of supervisors, and of themselves.

Brook (1973) reported that qualitative changes in the job create adjustment problem among employees. The interpersonal relationships within the department and between the departments create qualitative difficulties within the organization to a great extent.

French and Caplan (1972) argued that pressure of both qualitative and quantitative overload can result in the need to work excessive hours, which is an additional source of stress. Having to work under time pressure in order to meet deadlines is an independent source of stress.

Role conflict adversely affects an employee's performance. Empirical studies supporting this relationship was researched by Jamal (1984); Rabinowitz & Stumpf (1987). Other researchers have found that role ambiguity adversely affects job performance. Leicester et al. (1991); Bagozzi (1980) and Breugh (1980), have supported these results with similar outcomes involving the relationship between role ambiguity and job performance

Researchers have investigated the relationship between occupational stress and job performance. Leveck & Jones

(1996); Motowidlo et al. (1986); and Westman & Eden (1996), reported that high job stress leads to low job performance

Abualrub (2004) investigated that perceived social support from coworkers enhanced the level of reported job performance and decreased the level of reported job stress. It also indicated a curvilinear (U-shaped) relationship between job stress and job performance; employees who reported moderate levels of job stress believed that they performed their jobs less well than those who reported low or high levels of job stress.

Nirmala (2002) revealed that there is significant negative co relation between the major sources of occupational stress and job performance.

Allen and Gryski (2006) observed that job-related tension has intensified in recent years with evidence linking it to lower levels of employee job satisfaction and organizational productivity.

Lim and Teo, (1999) suggested that most of the factors which generate stress among IT personnel in Singapore are linked to various characteristics of their work environment, particularly to pressures associated with the job itself and to organizational aspects. Gilboa et al. (2008) investigated the relationships of work-related stressors with job performance: role ambiguity, role conflict, role overload, job insecurity, work-family conflict, environmental uncertainty, and situational constraints and found a negative mean correlation between each job performance measure and each stressor included in the analyses

Keijsers et al. (1995) found that high job stress leads to high job performance. However Anderson, (1976) and Cohen, (1980) found that people with moderate stress perform better than those with high or low levels of stress where as Kousar et al. (2006) revealed that there was no significant relationship between level of overall stress and job performance. It was concluded that there was moderate level of stress, however, no affect of stress was found on job performance. In view of the above inconclusive findings an attempt has been made to further probe the relationship between different dimensions of occupational stress and job performance as well as job related tensions and job performance

In view of the above research review it was thought appropriate to design a study on IT professionals as they are more vulnerable to stress because of their working shifts which includes the late hour shifts, time pressure and other role related stressors such as role overload, role isolation, role ambiguity and self role distance which not only exacerbates the existing stress but also hinders their ability to complete their tasks thus leading to lower performance. Moreover their performance appraisal system is also weekly designed which to some extent becomes the source of job related tension thus further increasing the stress level. The present study attempts to investigate the relationship

between occupational stress and job performance so as to understand the extent to which these factors jointly contribute to the poor performance of IT professionals.

Objectives of the study

- 1) To Study the relationship between Organizational Role Stress and Job performance
- 2) To Study the relationship between Job Related Tensions and Job Performance
- 3) To study the relationship between Job Related Tensions and Organizational Role stress
- 4) To examine the predictive value of Organizational Role Stress and Job Related Tensions for Job Performance of IT professionals in India

RESEARCH METHODOLOGY

Sample: A sample of 400 employees working in various IT companies based in Northern as well as Southern India was selected. The present data were collected with the help of standardized tools such as Job Related Tensions (Kahn et al 1964), Organizational Role Stress (Udai Pareek 1997) and Job Performance, (Randell et al. 1990).

The obtained data were processed for the computation of Mean, Standard Deviation (S.D), & Pearson’s Correlation and Multiple Regression. All the Statistical Analysis was performed with the help of SPSS.

Scoring Procedure and Organizational Role Stress: The organizational role stress scale (ORS) by Udai Pareek, (1997) has been used to measure organizational role stress and its dimensions such as inter-role distance, role stagnation, role expectation conflict, role erosion, role overload, role isolation, personal inadequacy, self role distance, role ambiguity and resource inadequacy. ORS is a five point scale, containing five items for each role stress and a total of 50 statements. The answer sheet is also used for scoring. The total scores on each role stress range from 0 to 20. To get the total score for each role stress, the ratings given are totaled horizontally as shown in table below. Retest reliability coefficients were calculated for a group of about 500 employees from three banks. The scale has acceptable reliability (as mentioned by author)

Statement number	Dimension
1 – 11 – 21 – 31 – 41	Inter Role Distance
2 – 12 – 22 – 32 – 42	Role Stagnation
3 – 13 – 23 – 33 – 43	Role Expectation Conflict
4 – 14 – 24 – 34 – 44	Role Erosion
5 – 15 – 25 – 35 – 45	Role Overload
6 – 16 – 26 – 36 – 46	Role Isolation
7 – 17 – 27 – 37 – 47	Personal Inadequacy
8 – 18 – 28 – 38 – 48	Self Role Distance
9 – 19 – 29 – 39 – 49	Role Ambiguity
10 – 20 – 30 – 40 – 50	Resource Inadequacy

Job related tension: This index is based on (Kahn et al., 1964) consisting of 15 statements describing what the authors judge to be symptoms of conflict or ambiguity. Respondents are asked to how often they are bothered by each type of symptom on a 5-point Likert Scale. Respondents answered each item by choosing one of the fixed alternative responses: (namely; never bothered; rarely bothered; sometimes bothered; bothered rather often; bothered nearly all the time and does not apply). Scores of 1 to 5 are assigned to first five responses and a score of 0 to last response. Respondent’s total score is his or her average score over all the items, except those to which he or she responded does not apply. A range of scores between 0 and 5 is indicated.

Job Performance Scale: The work outcome scale modeled after (Randell et al., 1990) was used to have fair assessment of work outcome or job performance of the subjects. The scale consists of six aspects such as work accomplishment, dealing with coworker, knowledge of work assigned, management of time and resources, sharing knowledge and information with other members and overall work performance. The rater was required to provide rating of work performance on each area on an 11 point scale. A score of 1 being lowest, 11 being highest and 6 being the moderate. The subjects made self rating about themselves. They were requested to give fair responses. The reliability of scale was estimated in terms of inter rater coefficient. The reliability coefficient was found to be .78 (N=400) which was regarded as very satisfactory (as mentioned by author)

RESULTS

Descriptive Analysis: The collected data was analyzed with the help of descriptive statistics. Skew ness and kurtosis describes the pattern of scores distribution.

The scores of employees on 13 variables including 1 of Job Performance, and 12 of Occupational Stress Viz. Inter Role Distance, Role Stagnation, Role Expectation Conflict, Role Erosion, Role Overload, Role Isolation, Personal inadequacy, Self-Role Distance, Role Ambiguity, Resource Inadequacy, Overall organizational role Stress and Job Related Tensions have been shown in table 1. All the measures of occupational stress barring overall organizational role stress and self-role distance are positively skewed and the measure Job Performance is negatively skewed.

Careful inspection of mean of variable job performance (57.78) shows that the IT professionals are performing at high level as mean score on job performance is greater than 36 (i.e. standard mean).

The IT professionals perceive high level of stress on most of the measures of organizational role stress such as: inter role distance, role stagnation, role expectation conflict, role overload, role isolation, personal inadequacy, self role distance, role ambiguity, resource inadequacy, except for role erosion which is at moderate level as the mean score is

greater than 8 (i.e. the standard mean) for all the measures of organizational role stress. IT professionals also perceive moderate level of job related tensions as it is clear from their mean score (40.58) on the measure of job related tensions (standard mean = 35)

Table 1. Summary of Descriptive Statistics (N=400)

S.	Variables	Mean	Std. Deviation	skewness	Kurtosis
1	Job Related Tensions	40.57	7.01	1.60	3.40
2	Inter Role Distance	9.50	2.55	0.22	-0.53
3	Role Stagnation	9.96	2.61	0.13	-0.60
4	Role Expectation Conflict	9.87	2.54	0.19	-0.12
5	Role Erosion	10.03	2.63	0.16	-0.34
6	Role Overload	9.68	2.72	0.18	-0.26
7	Role Isolation	9.39	2.73	0.15	-0.75
8	Personal Inadequacy	9.67	2.70	0.14	-0.59
9	Self Role Distance	9.45	2.43	0.07	-0.38
10	Role Ambiguity	9.55	2.50	0.11	-0.40
11	Resource Inadequacy	9.61	2.64	0.2	-0.48
12	Overall Organizational Role Stress	96.75	14.98	-0.28	-0.72
13	Job Performance	57.78	3.35	-0.46	-0.52

Correlation Analysis: The obtained data were analyzed with the help of correlation analysis. The inter correlation among the 13 variables, 1 of Job Performance and 12 of Occupational Stress (11 of organizational role stress and 1

oh job related tensions) have been computed by applying Pearson’s product moment method of correlation. It may be noted that correlation coefficients of .197 and .257 are significant at .05 and .01 levels respectively.

An inspection of inter correlation matrix table 2 reveals that job performance (JP) correlates negatively with all the measures of organizational role stress i.e. -.349 (p<.01) with Inter Role Distance (IRD), -.290 (p<.01) with Role Stagnation (RS), -.374 (p<.01) with Role Expectation Conflict (REC), -.295 (p<.01) with Role Erosion (RE), -.327 (p<.01) with Role Overload (RO), -.267 (p<.01) with Role isolation, -.327 (p<.01) with Personal Inadequacy (PI), -.356 (p<.01) with Self- Role Distance (SRD), -.297 (p<.01) with Role Ambiguity (RA), -.306 (p<.01) with Resource Inadequacy (RI) and -.555 (p<.01) with overall organizational role Stress (OS). This Interpretation reveals that higher the organizational role stress lower is the performance.

Further, Job Related Tensions (JRT) correlates -.127 (p<.01) with Role Expectation Conflict (REC), -.161 (p<.01) with Role Erosion (RE), -.157 (p<.01) with Role Overload (RO), -.205 (p<.01) with Role Isolation (RI), -.105 (p<.05) with Personal Inadequacy (PI), -.125 (p<.05) with Self- Role Distance (SRD), -.108 (p<.05) with Role Ambiguity (RA), -.168 (p<.01) with Resource Inadequacy (RI) and -.228 (p<.01) with overall organizational role Stress (OS). All the inter correlations between job related tensions and measures of organizational role stress are negative thus indicating

Table 2. Inter Correlations Matrix

	Job related tensions	Inter Role Distance	Role Stagnation	Role expectation Conflict	Role Erosion	Role Overload	Role Isolation	Personal Inadequacy	Self Role Distance	Role ambiguity	Resource Inadequacy	Overall Organizational Role Stress	Job Performance
Job related tensions	1	-0.051	-0.093	-.127(*)	-.161(**)	-.157(**)	-.205(**)	-.105(*)	-.125(*)	-.108(*)	-.168(**)	-.228(**)	-0.005
Inter Role Distance		1	.223(**)	.258(**)	.197(**)	.262(**)	.165(**)	.293(**)	.233(**)	.202(**)	.234(**)	.531(**)	-.349(**)
Role Stagnation			1	.278(**)	.253(**)	.227(**)	.200(**)	.219(**)	.277(**)	.158(**)	.220(**)	.532(**)	-.290(**)
Role Expectation Conflict				1	.371(**)	.281(**)	.311(**)	.299(**)	.276(**)	.269(**)	.260(**)	.625(**)	-.374(**)
Role Erosion					1	.300(**)	.207(**)	.143(**)	.232(**)	.145(**)	.225(**)	.536(**)	-.295(**)
Role Overload						1	.245(**)	.267(**)	.234(**)	.212(**)	.292(**)	.584(**)	-.327(**)
Role Isolation							1	.269(**)	.291(**)	.244(**)	.311(**)	.570(**)	-.267(**)
Personal Inadequacy								1	.338(**)	.261(**)	.268(**)	.588(**)	-.327(**)
Self Role Distance									1	.368(**)	.363(**)	.621(**)	-.356(**)
Role Ambiguity										1	.315(**)	.546(**)	-.297(**)
Resource Inadequacy											1	.608(**)	-.306(**)
Overall Organizational Role Stress												1	-.555(**)
Job Performance													1

thereby that job related tensions and organizational role stress are independent in nature. It is appropriately clear that job related tensions has negative but not significant relation with job performance and all the measures of organizational role stress are negatively but significantly related to job performance.

Regression Analysis: The above correlation represents the association between job performance, organizational role Stress and job related tensions. But to assess the degree of relationship between the dependent variable and the independent variables regression analysis is applied. Thus in order to examine the extent to which the set of all these variables predict the variance in job performance, organizational role stress and job related tensions, the multiple Regressions were worked out for IT professionals working in various multinational companies in India.

TABLE 3. Parameters/Coefficients in Regressions N=400

S.	Predictors	Regression Coefficients b	Mean
	(Constant)	40.651	
1	Job Related Tensions	-.145	40.57
2	Inter Role Distance	-.407	9.50
3	Role Stagnation	-.382	9.96
4	Role Expectation Conflict	-.412	9.87
5	Role Erosion	-.445	10.03
6	Role Overload	-.491	9.68
7	Role Isolation	-.568	9.39
8	Personal Inadequacy	-.479	9.67
9	Self Role Distance	-.509	9.45
10	Role Ambiguity	-.442	9.55
11	Resource Inadequacy	-.595	9.61
12	Overall Organizational role Stress	-.594	96.75
Dependent Measure Job Performance			57.78
Multiple R = .526		R ² = .28	
Standard Error of Measurement		3.255	
F=12.318		DF=12 and 387	

A general equation of multiple regressions that involves all the 12 predictors (e.g. X₁ to X₁₂) and one dependent variable (Y) can be stated as under:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + \dots + b_{12}X_{12}$$

Where, X₁, X₂, X₁₂ refers to Job Related Tensions and other measures of occupational stress, ‘Y’ refers to Job Performance and ‘a’ is Constant

By substituting the values of regression coefficients (table 3) of all predictors and constant, the complete regression equation can be read as:

$$Y = 40.651 + (-.145 X_1) + (-.407 X_2) + (-.382 X_3) + (-.412 X_4) + (-.445 X_5) + (-.491 X_6) + (-.568 X_7) + (-.479 X_8) + (-.509 X_9) + (-.442 X_{10}) + (-.595 X_{11}) + (.594 X_{12})$$

The regression equation, in score form, indicates that for every unit increase in Job Related Tension, job performance (Y) decreases by .145 units. (Here the Job related Tension has emerged as negative predictor). In the same way, individual contribution of each of the predictors can be calculated

Table 3 shows that multiple correlation (R) between the predictors and dependent measure is .526. The obtained F for the significance of multiple R equals to 12.32. The degrees of freedom being 12 and 387, the F is significant beyond .001 probability level. The findings clearly indicate that the variables job related tensions and organizational role stress have significant impact on job performance. The square of multiple R (R²) being .28 hereby suggests that all the 12 variables jointly account for only 28 % of total variance in Job Performance of an IT professional.

DISCUSSION

The findings of the present study reveals that all the measures of occupational stress share its variance with job performance negatively, which mean that, increase in occupational stress decreases the job performance. The findings of the study are in conformity with the earlier researches conducted by Brief & Aldag (1976); Greene (1972), they reported that role incumbents with high levels of role overload, role conflict and role ambiguity show lower levels of performance. Similarly, Jamal (1984) reported that role conflict adversely affects an employee’s performance which is in conformity with the results of the present study. Leveck & Jones (1996); Motowidlo et al. (1986) reported that high job stress leads to low performance which is in conformity with the results of the present study. Westman & Eden (1996) and Gilboa et al. (2008) in their investigation found that work related stressors such as role ambiguity, role overload and role conflict show negative mean correlation with job performance which is in conformity with the results of the present study. However, Keijers et al. (1995) found that high job stress leads to high job performance which is not in conformity with the results of the present study. The findings of the presents study reveals that no doubt the IT professionals are under high stress but perform at high rate. This may be because of work culture, normative requirements or rapid performance appraisal system adopted by the multi national companies. The measure job related tension share its variance with job performance.

The findings with regard to predictive value of occupational stress for job performance are of important implication in the field of organizational behavior. The results of regression and correlation show that organizational role stress and job related tensions jointly account for 28 per cent variance in job performance of IT professionals.

REFERENCES

Abualrub, R. F. (2004), “Job Stress, Job Performance, and Social Support among Hospital Nurses”, Journal of Nursing Scholarship, Vol. 36, pp. 73-78

- Allen, R. Decotiis & Gerard, S. Gryski (2006), "A note on factors precipitating job-related tension among public employees", *Journal of Community Psychology*, Vol. 9, pp. 256-261
- Anderson, C. (1977), "Locus of control, coping behaviors, and performance in a stress setting: A longitudinal study", *Journal of Applied Psychology*, Vol.62, pp. 449-51
- Bagozzi, R. (1980), "The nature and causes of self-esteem, performance and satisfaction in sales force: A structural equations approach", *Journal of Business*, Vol. 53, pp. 315-331
- Beehr, T.A. and Franz, T.M. (1986), "The current debate about the meaning of job stress", *Journal of Organizational Behavior & Management*, Vol. 8, pp. 5118
- Breaugh, J (1980), "A comparative investigation of three measures of role ambiguity", *Journal of applied psychology*, Vol. 38 (4), pp. 584-589
- Brief, A. P. & Aldag, R. (1976), "Correlates of role indices", *Journal of Applied Psychology*, Vol. 61, pp. 41-47
- Brook, A. (1973), "Mental Stress at Work. The Practitioner", Vol. 210, pp. 500-506
- Cartwright, S. & Cooper, C.L. (1997), "Managing Workplace Stress", Thousand Oaks, California: Sage Publications
- Cohen, S. (1980), "Aftereffects of stress on human performance and social behavior: A review of research and theory", *Psychological Bulletin*, Vol. 88, pp. 82-108
- Cooper, C.L.; Dewe, P.J. & O'Driscoll, M.P. (2001), "Organizational Stress: A Review and Critique of Theory, Research, and Applications. (Ed.)", Thousand Oaks: Sage Publications
- French, J.R.P. Jr. and Caplan, R.D. (1972), "Organizational Stress and Individual Strain in A.J. Marrow, ed., *The Failure of Success*", AMACOM, New York
- Gilbert, T. (1998), "A Leisurely Look at Worthy Performance. The 1998 ASTD Training and Performance Year book. Woods, J. & Gortada, J. (editors)", New York: McGraw-Hill
- Gilboa, S.; Shirom, A.; Fried Y. & Cooper, C. (2008), "A Meta-Analysis of Work Demand Stressors and Job Performance: Examining Main and Moderating Effects", *Personnel Psychology*, Vol. 61(2), pp. 227-271
- Greene, C. N. (1978), "Identification modes of professionals: Relationship with formalization, role strain, and alienation", *Academy of Management Journal*, 21, pp. 486-492
- Hinkle, L.E. (1977), "The concept of stress in the biological and social sciences. In Z. J. L. D. R. & W. P. C. Lipowski (Ed.), *Psychosomatic Medicine: Current Trends and Clinical Implications*", New York: Oxford University Press
- Jamal, M. (1984), "Job Stress and job Performance controversy: an empirical assessment in two countries", *Organizational Behavior and Human Performance*, Vol.33, pp.1-21
- Kahn, R.L., Wolfe, D.M., Quinn, R.P., Snoeks, P.S. & Rosenthal, R.A. (1964), "Organizational stress: Studies in role conflict and role ambiguity", New York: Wiley Pub, 26.
- Keijsers, G. J.; Schaufeli, W. B.; Le Blanc, P. M.; Zwerets, C. & Reis-Miranda, D. (1995), "Performance and burnout in intensive care units", *Work and Stress*, Vol. 9, pp.513-527
- Kousar, S.; Dogar I. A.; Ghazal, S. & Khattak, I. (2006), "Occupational stress and job performance", *Journal of Pakistan Psychology Society* Vol. 3(2), pp. 93-7
- Lazarus, R.S. (1966), "Psychological Stress and the Coping Process (Ed.)", New York: McGraw-Hill
- Leicester, W.; Kelloway, E.; Barling, K.; & Jullian, R. (1991), "Job characteristics, role stress and mental health", *Journal of Organizational Psychology*, Vol. 64(4), pp.291-305
- Leveck, M.L. & Jones, C.B. (1996), "The nursing practice environment, staff retention and quality of care", *Research in Nursing and Health*, Vol.19, pp.331-343
- Lim, V.K.G. & Teo, T.S.H. (1999), "Occupational stress and IT personnel in Singapore: Factorial dimensions and differential effects", *International Journal of Information Management*, Vol. 19, pp.227-291
- Miles, R. and Perrault, W. (1976), "Organizational Role Conflict: Its Antecedents and Consequences", *Organizational Behavior and Human Performance*, Vol. 17, pp.19-44.
- Motowidlo, S. J.; Packard, J. S. & Manning, M. R. (1986), "Occupational Stress: It's a causes and consequences for job performance," *Journal of Applied Psychology*, Vol. 71, pp. 618-629
- Nirmala (2002), "Occupational Stress and Job Performance: A Study in Banking Industry", *PIMR*, Vol. 6, pp. 1-2
- Pareek, Udai (1997), "Role stress and coping: A framework. In Pestonjee, D.M & Udai Pareek (Eds.) *Studies in organizational role stress and coping*", Jaipur: Rawat, pp.13-27
- Rabinowitz, S. & Stumpf, S. A. (1987), "Facets of role conflict, role specific performance and organizational level within the academic career", *Journal of Vocational Behavior*, Vol. 30, pp. 7283
- Randall, D.M.; Fedor, D.B. & Longenecker, C.O. (1990), "The behavior expression of organizational commitment", *Journal of Vocational Behavior*, Vol.36
- Romanoff, K.E. (1989), "The ten commandments of performance management", *Personnel*, Vol. 66(1), pp.24-28
- Westman, M. & Eden, D. (1996), "The inverted-U relationship between job stress and performance", *Work & Stress*, Vol.10, pp.165-173