

Occupational Stress and Leadership Styles: Indian Automobile Industry

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Abstract

Current study aims to identify the factors which cause occupational stress among blue collar employees of the Indian automobile industry. Stress has become a part of our fast running life. Stress not only affects the mental health but has also become a reason for many critical diseases like cancer, obesity, heart attack etc. Stress is caused from both personal and professional environment. People spend more than one third of their time at their work places, therefore occupational stress is getting attention to be studied by the researchers. The stress among blue collar employees can directly affect the production capacity of the company which can lead to declining trend of revenues to the company. Thus keeping in view the importance of studying occupational stress, this study has been done. The current study has highlighted the factors which need to be improved for minimizing the occupational stress among blue collar employees. An attempt has been made through current study to determine the relationship between occupational stress and leadership styles. The best leadership style has been identified during the study that can lead to decrease in the occupational stress among blue collar employees.

Key Words : Occupational Stress, Indian Automobile industries, Leadership, Demographic Variables, Job Authority, Growth and career prospects, Blue Collar Employees, Working Environment.



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The term “stress” was first given by Hans Selye in 1936, who defined it as “the non-specific response of the body to any demand for change.” Stress is mainly related to the response of our body to any kind of demand. It can be caused by both good and bad experiences. In a medical or biological context, stress is a physical, mental, or emotional factor that causes bodily or mental tension (Palmer et al., 2003). Stress can be caused due to the external environment like family environment, work environment, social environment or internal issues like illness, or from a medical process. Occupational stress can be defined as the adverse psychological and physical reactions that occur in an individual as a result of their being unable to cope with the demands made on them, (Omolar, 2008). Stress that happens due to a person’s employment is termed occupational stress. The job stress or occupational stress is used interchangeably (Dollard, 2003). Keeping in

view all the above definitions, for the purpose of this study, occupational stress is defined as the harmful emotional (anxiety and depression), physical (insomnia, headaches, and infections), and behavioral responses (job dissatisfaction, low commitment and poor work performance) that occur when work necessities do not match the capabilities, possessions and needs of the worker (Zahir, 2009).

Occupational stress prevails almost in every sector of the economy, whether it is service sector, agriculture sector, or industrial sector. In industrial sector, it is becoming a highly noticeable issue now a days. In automobile industries, blue collar employees are that part of human resource of a company which is considered the most valuable assets of any company as it is the man (human resource) who gives movement to other three M's of the company which are; material, machine and money. Blue collar employees are directly related to the production process. Blue-collar employees are the bases of each and every manufacturing organization across the world. If treated well, blue-collar employees can prove to be a competitive advantage for a firm as the productivity of the workforce determines the success of an organization. This group is more prone to stress as they are less educated, work in strenuous conditions, and belongs to lower income group. Thus it becomes more important for the organization to give more attention in dealing any work related stress of blue collar employees. Occupational stress may be caused due to many reasons. Some of the causes of occupational stress among blue collar employees can be; poor working conditions, work overload, poor leadership, poor interpersonal relationships, role ambiguity, lack of career growth and development opportunities and many more (Zahir, 2009, Cooper et al., 2001). Occupational stress can directly affect the performance of the employees, which leads to decrease in the overall production level of the organization. Less production will lead to fewer profits to the company and can even create a negative image of the company in the market. Thus ultimately it's the organization that will bear the consequences of increased level of stress among its employees in the form of high labour turnover, low group-morale, output and poor labour-relations (Ivancevich and Matteson, 1980). Occupational stress is harmful not only to the organization, but also for the health of the employees

Kyriacou (1989). Northwestern National Life (1991) found that 25% of employees report that their job is the number one stressor in their lives. Work stress is linked to health issues more strongly than any other life stressor, including family issues and financial problems (The St. Paul Fire and Marine Insurance Company, 1992). Living with this stress will take a toll on the employee which in turn will take a toll on the organization through increased burnout, decreased engagement, decreased productivity, decreased retention, and decreased participation (Bryner, 2006; Weaver, 2003). Thus, it is the most important thing for any organization to identify the causes of occupational stress among its employees and to minimize the level of occupational stress. Minimizing occupational stress could be a productive endeavour for organizations. In addition, by identifying some of the factors of occupational stress such as conflict, ambiguity, and overload can help the organizations to better identify when stress is present. Reducing these stress levels through increased engagement will increase productivity and retention of key personnel through the reduction of occupational stress (Caponetti, 2012).

Though there are many reasons for increased level of occupational stress among blue collar employees, as they are more prone to stress because of their socio-economic background and the workplace environment; but the most important reason which is highlighted by many researchers is a leadership style prevailing in the organizations (Kurt Lewin, 1939). Leadership style can be broadly divide into three categories such as; authoritarian style (in which leader makes decision without consulting with its team members), participative style (leaders keep the final decision making authority with them, but they include team members in the decision-making) and delegative style (this style of leadership does not form any control mechanism on his/her group members). Researchers have found positive and significant relationship between leadership styles and level of occupational stress among blue collar employees. Workers operating under supervisor having autocratic approach experience high level of job stress than workers working under a democratic leadership style (Omolara, 2008). Thus identifying the factors in an organization which may lead to occupational stress among blue collar employees, is important for both the organization (in terms of production level) and employees (physical and mental health).

Review Literature

Amir Shani and Abraham Pizam (2009) and Costa et al. (2009) have concluded in their study that work characteristics have a great influence over the occupational stress among hotel employees. Viljoen, J.P. and S. Rothmann (2009), have found in their study that work overload, control, job aspects, work-life balance and pay are the main factors which cause occupational stress. The study also confirmed the negative effect of occupational stress over physical and psychological health. J.E. Agolla (2009) has also found that job related factors and occupational stress are positively related to each other among police officers. Connolly et al. (2009) have also found that occupational stress affects the mental well-being of a person negatively and also affects the job satisfaction. The researcher also finds that working conditions cause occupational stress among employees. Chen et al. (2009) have also found that organizational structure have a direct effect over the occupational stress. Jackson and Rothmann (2006) also have concluded in their study that occupational stress causes ill health. Organizational commitment has a direct influence over the occupational stress. Researchers have also found that leadership styles are also responsible for the occupational stress among employees. Todd A. Ryska (2002) has conducted a study to examine the relation between leadership styles and occupational stress among college athletic directors. The study has concluded that leadership styles have an effect over the emotional exhaustion which leads to job stress and thus also effects the goal accomplishment. Rivera et al. (2014) have analyzed the relationship between leadership styles of the supervisors and burnout in the subordinates. It has been found from the study that leadership has a significant positive relationship with personal achievement and is negatively related with emotional exhaustion and leads to burnout. The study also found that there is a positive relationship between passive style of leadership and emotional exhaustion. Hand, Lynette (2010), has done a study to find out the relation between leadership styles and the stress in the Catholic education system. The study concluded that leadership styles positively related to the capacity to cop with stress and that the gender differences don't affect the stress level of an individual. De Nobile and McCormick (2007), also favored the statement that there is an association between stress and leadership styles. Grimm (2008) and Hui and Cheng

(2006) have found that the leadership styles define the stress level of the workers in an organization.

Keeping in view the harmful effects of increased level of occupational stress and importance of identifying the factors which lead to occupational stress, an attempt has been made through current study to measure the level of occupational stress and factors responsible for the occupational stress among blue collar employees, particularly in Indian automobile industries. The study also aims to examine the relationship between three leadership styles and occupational stress.

Objectives

The main objectives of the study are as follows:

- To identify the factors that causes occupational stress among blue collar employees in Indian automobile industries,
- To measure the relationship between occupational stress and leadership styles, and
- To measure the difference in the level of occupational stress due to different demographic variables of the employees.

Research Methodology

The current study has been conducted for the blue collar employees working in the Automobile companies of Haryana, Punjab, Rajasthan, Uttar Pradesh, and Uttarakhand. The study uses both the secondary and primary data. Secondary data has been used to make a list of automobile companies working in Haryana, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand. Total number of automobile manufacturer in the selected area was 25, out of those we have selected 10 companies randomly. The list of selected companies for the study has been given in Appendix 1 in detail. From each company 75 blue collar employees have been taken for the survey, thus forming a sample size of 750 blue collar employees from 10 automobile companies. The employees have been directly contacted for the purpose of collection of primary data. For the purpose of checking the reliability of the responses given by the employees, the actual working place of the workers has been visited for collecting more information about their working conditions, environment, the problems faced by the employees during their work.

The data has been collected during a period of eight months from November 2014 to June 2015. For the purpose of collecting the data for primary study, two research instruments were needed, one for collecting the information about the occupational stress and second research instruments for collecting the data about the leadership styles prevailing in the company. First research instruments to collect the measure, the level of occupational stress among blue collar employees working in the automobile companies, has been developed using 17 statements, on the basis of review of literature. The instrument has been first tested by doing pilot study, the value of Cronbach alpha came 0.982 during pilot study, thus the same questionnaire was used for the final study keeping in view the high score of reliability and validity of the instrument. All the statements were based on Likert's five point scale from strongly agree to strongly disagree. The mean value of all the 17 statements used in the questionnaire has been taken as the value of occupational stress for the purpose of analysing the data further. Total five categories of the occupational stress has been made such as, very low, low, average, high, and very high level of occupational stress.

Chi square test has been done using these five categories of occupational stress. In order to identify the leadership styles prevailing in the companies, the research instrument developed by Clark Don in 1998 for measuring the leadership styles has been used, which consists 30 statements. The responses of the respondents were recorded using five point scale given by Likert, from strongly agree to strongly disagree. The demographic data of the employees has also been collected through primary survey such as age, gender, dependent members in family, annual salary, family type, marital status, and education. The questionnaire has been coded in Hindi and English language both, keeping in view the level of education of the employees. Data has been analysed using SPSS 20.0.

Data Analysis and Interpretations

The first objective of the study is to identify the factors which cause occupational stress among blue collar employees in Indian Automobile Industries. Factor analysis using Principal Component Analysis has been used in the study. The results of the factor analysis in detail are as follows:

Table1: Results of Cronbach Alpha and KMO Test

Reliability Statistics		
Cronbach's Alpha		No. of Items
0.8967		17
KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.795
Bartlett's Test of Sphericity	Approx. Chi-Square	117.640*

*1 per cent significance level.

Interpretation: From the table 1, it can be seen that the value of Cronbach alpha is 0.8967, which is acceptable value as it is above 0.7 and thus the questionnaire is reliable and valid. The value of KMO is also above 0.7, which is acceptable value (Kaiser, 1960) and the value of Bartlett is also significant

at 1 per cent level of significance. Thus the questionnaire is further used for the factor analysis. Total five factors have been extracted using factor analysis. All the five factors and their factor loadings with statements have been shown in the table 2 in detail.

Table 2: Factor Derived Using Varimax Rotation (PCA) Method with Factor Loadings

Factor 1 (Cronbach Alpha=0.834)	Factor 2 (Cronbach Alpha=0.901)	Factor 3 (Cronbach Alpha=0.868)	Factor 4 (Cronbach Alpha=0.849)	Factor 5 (Cronbach Alpha=0.923)
Poor working conditions (0.830)	Job overload (0.792)	Conflict with supervisor (0.742)	Lack of Training (0.715)	Lack of Participation in decision making (0.735)
Lack of Equipment/Tools needed (0.739)	Job Ambiguity (0.711)	Lack of support from supervisor (0.623)	Lack of growth & advancement opportunities (0.543)	Lack of control over the pace of work (0.693)
Excessive workload (0.702)	Mismatch between job requirements and employees' skills and education (0.637)	Poor peer relations (0.567)	Lack of career development opportunities (0.498)	Pint-sized authority or Powerlessness (0.652)
Poorly Shift system (0.689)	Mismatch between job demand & pressure and employees' knowledge & abilities (0.538)			

Interpretation: The factors have been extracted using Varimax rotation method (PCA). The five factors whose Eigen values was greater than 1 have been retained as per the Kaiser criterion (Kaiser, 1960). The above five factors accounts total 89 per cent of variability in the original variable. The Cronbach alpha for each factor has also been calculated and found to be above 0.7 for each of the five factors. The 17 statements used in the questionnaire have been shown under the five factors along with their factor loadings given in the brackets. The statements whose factor loadings were found above 0.40 have been taken. First factor i.e. Working Environment consists of four statements all are related to the working conditions of the employees. The second factor i.e. Job Aspects, consists of four statements, all are related to the job features, job requirements, and education skill

training of the employees. Third factor i.e. Interpersonal Relations, consists of three statements related to the relation of an employee with his supervisor, co-workers and peer relations. Fourth factor i.e. Career and Growth Prospects consists of three statements related to the training opportunities, career development, and growth and advancements opportunities. Fifth factor i.e. Job Authority, consists of statements related to the authority for doing job, participation in decision making and lack of control over the work.

Multiple regression analysis has been conducted to measure the contribution of each of the above five factors in the occupational stress. The results have been shown in table 3 in detail.

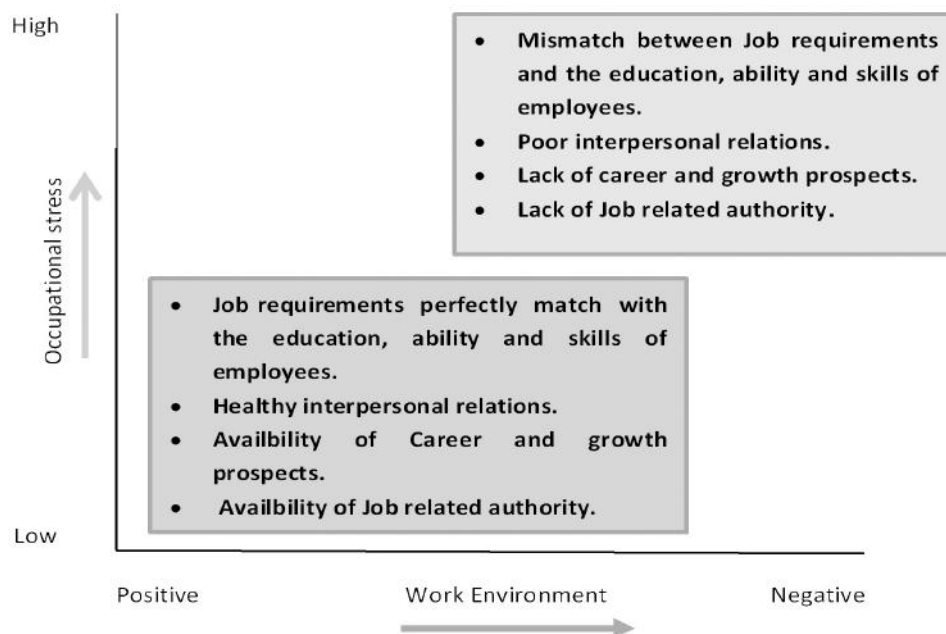
Table 3: Determinants of occupational stress among blue collar employees

Independent Variables	Dependent Variable: Occupational Stress		
	Beta	t-value	Sig
Work Environment (Factor 1)	0.723	41.919	.001*
Job Aspects (Factor 2)	0.658	39.440	.002*
Interpersonal Relations (Factor 3)	0.532	39.412	.001*
Career and Growth Prospects (Factor 4)	0.466	26.359	.002*
Job Authority (Factor 5)	0.459	25.607	.000*
Multiple R = 0.863, R Square = 0.795			
ANOVA RESULTS: (F -Test = 113.635, significant level is 1 per cent)			

*1 per cent significance level.

Interpretation: It can be interpreted from table 3 that Work environment is the most important factor, followed by Job aspects factor which affects the level of occupational stress among blue collar employees who are working in automobile industries in India. It can also be seen from the multiple regression analysis that job authority is the least affecting factor to occupational stress. All the five factors have been positively and significantly related with the occupational

stress. Value of r square is found to be 0.795 which shows that these five factors cause variation in the occupational stress around 79 per cent while the rest of 21 per cent of variation in the occupational stress can be assigned to other factors. The model which was developed on the basis of the findings of the factor analysis and multiple regression analysis is given below.

**Figure 1: Model for occupational stress developed on the basis of analysis**

Interpretation: It can be interpreted from the above model of occupational stress that occupational stress will be low when work environment will be positive and vice versa. When work environment will be positive, job requirements perfectly match with the education, ability and skills of employees, healthy interpersonal relations, career and growth prospects are available, and employees have job related authority, then level of occupational stress among employees will be low. However; negative work environment, mismatch between job requirements and the education, ability and skills of employees, poor interpersonal relations, lack of career and growth prospects, lack of job related authority; all lead to

the high level of occupational stress among blue collar employees.

Second objective of the study is to measure the relationship between occupational stress and leadership styles.

Null Hypothesis 1 (H_{01}): There is no relationship between Occupational stress and Leadership styles.

Chi square test has been used to measure the relationship between occupational stress and leadership styles. Tables 4 and 5 show the cross tabulation of occupational stress and the leadership styles along with the chi square value.

Table 4: Cross tabulation of Occupational stress and leadership styles

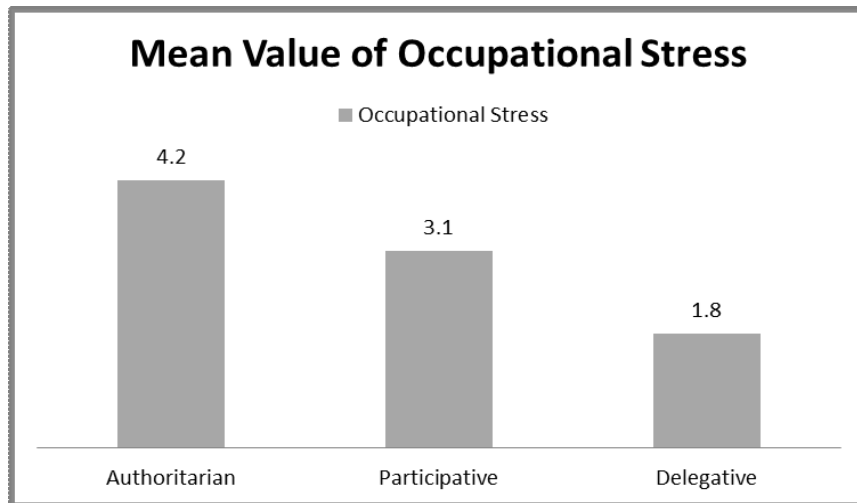
Leadership Styles ↓	Occupational Stress →	Very Low	Low	Average	High	Very High	Total
Authoritarian	Count	11	30	39	138	127	345
	% within Leadership Styles	3.2	8.7	11.3	40.0	36.8	100.0
Participative	Count	34	47	45	56	34	216
	% within Leadership Styles	15.7	21.8	20.8	25.9	15.7	100.0
Delegative	Count	51	66	18	28	26	189
	% within Leadership Styles	27.0	34.9	9.5	14.8	13.8	100.0
Total	Count	96	143	102	222	187	750
	% within Leadership Styles	12.8	19.1	13.6	29.6	24.9	100.0

Table 5: Results of the Chi-square test

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.689	8	0.002
Likelihood Ratio	31.724	8	0.001

Interpretation: It can be interpreted from the table 4 that highest number of respondents with very high level of occupational stress has been those whose leader follows the authoritarian styles of leadership. The respondents for whom lowest level of occupational stress has been measured whose leader follows the delegative style of leadership. However, the moderate level of stress has been recorded for the employees who are under participative style of leadership. Table 5 indicates that there is a significant difference between occupational stress among employees

and the leadership styles prevailing in the company. The value of chi square is found to be significant at 1 per cent level of significance thus leads to the rejection of the null hypothesis which states that there is no relationship between occupational stress and leadership styles. Thus overall it can be interpreted from the analysis that different types of leadership styles affect the level of occupational stress among the blue collar employees of the Indian automobile industry. The Graph 1 below shows the level of occupational stress on the basis of three different types of leadership styles.

**Graph 1 - Level of Occupational Stress**

Interpretation: Graph 1 shows that the mean value of occupational stress is high among blue collar employees under authoritarian styles of leadership, while the mean value is lowest in the employees who are under delegative style of leadership. The employees under participative leadership style have moderate level of occupational stress.

Third objective of the study is to determine the relationship between occupational stress and demographic variables of the employees. The study aims to examine whether there is a significant difference in the level of occupational stress of employees due to different demographic profile or not.

Following hypothesis has been formulated and tested using chi square test.

Null Hypothesis 2 (H_{02}): There is no relationship between age and occupational stress.

Null Hypothesis 3 (H_{03}): There is no relationship between gender and occupational stress.

Null Hypothesis 4 (H_{04}): There is no relationship between marital status and occupational stress.

Null Hypothesis 5 (H_{05}): There is no relationship between family type and occupational stress.

Null Hypothesis 6 (H_{06}): There is no relationship between number of dependents and occupational stress.

Null Hypothesis 7 (H_{07}): There is no relationship between education and occupational stress.

Null Hypothesis 8 (H_{08}): There is no relationship between earnings and occupational stress.

Table 6: Results of Chi square Test

Demographic Variables	Chi-Square Value	Df	p-value	Acceptance/Rejection of Null Hypothesis
Age*Occupational Stress	42.682	16	0.000*	$H_{(02)}$ - Rejected
Gender*Occupational Stress	5.369	4	1.105 (NS)	$H_{(03)}$ - Accepted
Marital Status*Occupational Stress	35.246	8	0.003*	$H_{(04)}$ - Rejected
Family Type *Occupational Stress	18.943	4	0.001*	$H_{(05)}$ - Rejected
Number of dependents* Occupational Stress	39.589	12	0.003*	$H_{(06)}$ - Rejected
Education* Occupational Stress	58.573	20	0.000*	$H_{(07)}$ - Rejected
Earnings*Occupational Stress	52.182	16	0.002*	$H_{(08)}$ - Rejected

* 1 per cent level of significance.

NS = Not Significant.

Interpretation: The Chi square value of age and occupational stress has found to be significant at 1 per cent of significance, leads to the rejection of the null hypothesis which states that there is no relationship between age and the occupational stress. There is a significant difference in the level of occupational stress of blue collar employees who belong to different age groups. Emotional maturity of the different age groups increases with the age, thus the ability to handle the work stress also is different among employees of different age group. This can be the main reason for difference in the occupational stress of different age groups of employees.

The chi square value of gender and occupation stress is found to be insignificant. Thus the null hypothesis has been accepted. Hence there is no difference in the occupational stress due to difference in their gender. Both male and female workers face same type of work environment, leadership styles, follows the same rules and policies of the company. Thus the occupational stress will be same for both male and female workers in the company.

Occupational stress among blue collar employees differs due to different marital status of employees, the family type they belongs and the number of dependents in the families of the employees. The chi square value has been found significant for these three demographic variables and thus the null hypothesis got rejected which states that there is no relationship between marital status, family type and number of dependents and the occupational stress. The marital status affects the stress level of an employee, because married employees have more responsibilities than unmarried employees. Similarly as the number of dependents in the family increases the responsibilities of the employee also get increased. These all lead to more stress from external sources other than their occupation. The stressful personal life situation decreases the capacity of the employee to bear more stress from their occupation and thus affects the level of occupational stress. Different family type such as, nuclear or joint family also affects the occupational stress of the employees. The persons who belong to joint family have their family members to take care of their children while they are at work, even the emotional and financial support is also higher in case of joint family. Thus the family type also affects the stress managing ability of the employees at work.

Education level of employees and the earnings of an employee affect the occupational stress. Significant relationship has been found between education, earnings and occupational stress. Education makes a person more aware about the surroundings, more expectations from the organisation, and when a person does not get the job profile that actually meets his expectations, skills, education level, stress level increases. An educated person knows his worth very well. While an uneducated or less educated person will be ready to do any work for the sake of getting money whether that job profile suits his skills or not. Similarly the earnings of the employees affect the occupational stress, if a person is underpaid or not paid according to his job then the stress may get increased.

Conclusion

It can be concluded that in Indian automobile industries there are mainly five factors (working environment, job aspects, interpersonal relations, growth and development prospects, and job authority) that cause occupational stress among blue collar employees. The level of occupational stress is high where the leaders follow authoritarian style of leadership while the level of occupational stress is found less where leaders follow the delegative style of leadership. Overall occupational stress has been found to be very high among the blue collar employees in automobile companies. This study is relevant for the middle level managers and lower level managers, who make the strategies, rule and regulations for the blue collar employees in the company. The study highlights the factors which are highly responsible for causing occupational stress among the employees. By improving these factors or making some strong strategies for these factors, the level of occupational stress can be minimized. The managers should try to improve the working environment of the company as it is found as the highest contributing factor in occupational stress among blue collar employees. The study also highlights the fact that leaders should follow participative or delegative style of leadership to reduce the level of occupational stress among blue collar employees. Therefore, productivity of the employees can be increased which will improve the performance of the company. The study has some limitation as well. The study is limited only to automobile companies; companies from other industrial sector can also be included to have more in depth study of this area.

References

- Amir, Shani and Abraham Pizam (2009). "Work-Related Depression among Hotel Employees." *Cornell Hospitality Quarterly*, Vol. 50 (4), pp. 446-459.
- Agolla J.E. (2009). "Occupational Stress Among Police Officers: The Case of Botswana Police Service." *Occupational Stress among Police Officers: The Case of Botswana Police Service*, Vol. 3 (1), pp. 25-35.
- Brewer, E. W. and L. Shapard (2004). "Employee Burnout: A Meta-Analysis of the Relationship between Age and Years of Experience." *Human Resource Development Review*, 3, 102-123.
- Chang-qin Lu, Oi-ling Siu, Wing-tung Au, and Sandy S. W. Leung (2009). "Manager's occupational stress in state-owned and private enterprises in the People's Republic of China." *The International Journal of Human Resource Management*, Vol. 2 (8), pp. 1670 – 1682.
- Connolly, John F., Willock, Joyce, Hipwell, Michele and Chisholm, Vivienne (2009). "Occupational Stress & Psychological Well Being following University Relocation: six months on." Project Report. Queen Margaret University.
- De Nobile, J. J., and J. McCormick (2005). "Organizational Communication and Job Satisfaction in Australian Catholic Primary Schools." *Educational Management Administration & Leadership*, Vol. 36(1), pp. 101-122.
- Grimm, J. W. (2008). "Occupations and Publics: A Framework for Analysis." *Sociological Quarterly*, Vol. 14 (1), pp. 68-87.
- Hand, E. Lynette (2010). "Role factors, leadership styles and stress among Catholic primary school executives." available at <http://epublications.bond.edu.au/cg>
- Hsein-Che Lee and Tsai-Hua Chang (2007). "The Impact of Leadership Style on Job Stress and Turnover Intentions - Taiwan Insurance Industry as an Example." retrieved from www.oppapers.com/essays/723980as on September 25, 2011.
- Hui, S. K., and Cheung, H. Y. (2006). "A Re-examination of leadership style for Hong Kong school based management (SBM) schools." *Asia Pacific Journal of Education*, Vol. 26, pp. 173-187.
- Ivancevich, J. M. and M. T. Matterson (1980). "Stress and Work: A Managerial Perspective." *Work Stress: Health Care Systems in the Workplace*, pp. 27-49, New York: Praeger.
- Jackson, Leon and Rothmann, Sebastiaan (2006). "Occupational stress, organisational commitment, and ill health of educators in the North West Province." *South African Journal of Education*, Vol. 26 (1), pp. 75-95.
- James A. Wells (1982). "Objective Job Conditions, Social Support and Perceived Stress among Blue Collar Workers." *Journal of Occupational Behaviour*, Vol. 3, No. 1, pp. 79-94.
- James S. House, James A. Wells, Lawrence R. Landerman, Anthony J. McMichael, and Berton H. Kaplan (1979). "Occupational Stress and Health among Factory Workers." *Journal of Health and Social Behavior*, Volume 20, No. 2, pp. 139-160.
- Kvarnstrom S. (1997). "Stress Prevention for Blue-collar Workers in Assembly-line Production." Condition of Work and Welfare Facilities Branch, working paper, retrieved from www.bvsde.paho.org/bvsast/i/fulltext/blue.pdf on October 11, 2011.
- Kyriacou, C. (1989), "The Nature and Prevalence of Teacher Stress." *Teaching and Stress*, pp. 27-34, Milton Keynes: Open University Press.
- Lazarus, R.S. (1999). *Stress and Emotion: A New Synthesis*. New York: Springer.
- Martinez R. Jacobs (1998). "The Effect of Leadership Styles on Stress Indicators In Hawaii's Airport Fire fighting Personnel." retrieved from www.usfa.fema.gov/pdf/efop/efo28278.pdf on September 5, 2011
- Mohamed, Zafir, Makhbul, and Durrishah, Idrus (2009). "Work Stress in Malaysia." *Malaysia Labour Review*, Vol. 3, No. 2, pp. 13-26.
- Ng Yuk Lin (2007). "Occupational Stress, Personality and Coping strategies among aircraft maintenance personnel in Hong Kong." City University of Hong Kong, retrieved from <http://lbms03.cityu.edu.hk/oaps/ss2007-4708-ny1760.pdf> on October 11, 2011.

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- Omolara, B E. (2008). "Influence of Work Related Stress on Organizational Commitment." EABR & TLC Conferences Proceedings Rothenberg, Germany.
- Palmer, J.R. Jr., J. G. Hunt, and R. N. Osborn (2003). *Organizational Behavior*. New York: John Wiley & Sons, Inc.
- Rivera R. Blanca, I. Martinez, and M. Baron (2014). "The impact of transformational leadership in burnout of nurses and doctors in a public hospital of Mexico." *American Journal of Health Sciences*, Volume 4, Number 1, available at <http://www.researchgate.net/publication>.
- Schmidt, Denise Rodrigues Costa; Dantas, Rosana Aparecida Spadoti; Marziale, Maria Helena Palucci and Laus, Ana Maria (2009). "Occupational stress among nursing staff in surgical settings." *SA Journal of Industrial Psychology*, Vol. 18 (2), pp. 330-337.
- Siu, Oi-ling (1996). "Occupational Stress among Factory Workers in Hong Kong and China: A Comparative Study." retrieved from www.library.in.edu.hk/eresources/etext/caws/caws_0039.pdf on September 15, 2011.
- Selye, H. (1956). *The Stress of Life*. New York: McGraw Hill.
- Soori H., M. Rahimi and H. Mohseni (2008). "Occupational Stress and Work-Related Unintentional Injuries among Iranian Car Manufacturing Workers." *Eastern Mediterranean Health Journal*, Vol. 14, No. 3, pp. 697-703.
- Todd A. Ryska (2002). "Leadership styles and occupational stress among college athletic directors: The moderating effect of program goals." *The Journal of Psychology: Interdisciplinary and Applied*, Vol. 136 (2), available at <http://www.tandfonline.com/doi/pdf/>
- Viljoen, J.P., and S. Rothmann (2009). "Occupational stress, ill health and organizational commitment of employees at a university of technology." *SA Journal of Industrial Psychology*, Vol. 35(1), pp. 730-811.
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Appendix 1

S.N	State	Region	Company	Type of Vehicle
1	Haryana	Dharuhera	Hero Honda	Two wheelers
2	Haryana	Gurgaon	Harley-Davidson India	Two wheelers
3	Haryana	Gurgaon	Hero Honda	Two wheelers
4	Haryana	Faridabad	India Yamaha Motor Private Limited	Two wheelers
5	Haryana	Manesar	Honda	Two wheelers
6	Haryana	Gurgaon	Suzuki	Two wheelers
7	Haryana	Gurgaon	Maruti Suzuki	Passenger vehicles
8	Haryana	Manesar	Maruti Suzuki	Passenger vehicles
9	Punjab	Nawanshahar	SML Isuzu Limited	Commercial vehicles
10	Punjab	Hoshiarpur	International Tractors Limited (Sonalika Group)	Farm Tractors & Agri Equipments
11	Rajasthan	Tapukara	Honda Cars India	Passenger vehicles
12	Rajasthan	Alwar	Ashok Leyland Limited	Commercial vehicles
13	Rajasthan	Alwar	TAFE Tractors	Commercial vehicles
14	Rajasthan	Neemrana	Hero MotoCorp	Two wheelers
15	Rajasthan	Tapukara	Honda	Two wheelers
16	Rajasthan	Jaipur	Mahindra & Mahindra	Farm Tractors
17	Uttar Pradesh	Surajpur	India Yamaha Motor Private Limited	Two wheelers
18	Uttar Pradesh	Greater Noida	Honda Sael Cars India	Passenger vehicles
19	Uttar Pradesh	Greater Noida	New Holland Agriculture / CHN	TACTORS
20	Uttar Pradesh	Lucknow	Tata Motors	Commercial vehicles
21	Uttarakhand	Haridwar	Hero Honda	Two wheelers
22	Uttarakhand	Pantnagar	Bajaj Auto	Two wheelers
23	Uttarakhand	Pantnagar	Ashok Leyland	Commercial vehicles
24	Uttarakhand	Pantnagar	Tata Motors	Commercial vehicles
25	Uttarakhand	Haridwar	Mahindra & Mahindra	Commercial vehicles

Detailed list of manufacturing companies of automotive vehicles in Haryana, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand, the companies highlighted have been taken for the purpose of the current study.
