EXHAUSTION AND STRESS: AN EMPIRICAL STUDY AMONG WORKERS IN APPAREL INDUSTRY OF SRI LANKA

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ABSTRACT

Stress is a normal part of human life in the modern world. And everyone has to cope with it. The effect of stress is a deviation from the existing physical and psychological damage of human life. The aim of this paper is to identify the level of stress among apparel industry workers in Sri Lanka. A sample of 50 workers from 10 factories in apparel industry under Board of Investment (BOI) was randomly chosen for the purpose of this study. Once upon a time the apparel industry is the largest foreign exchange earner and a key generator of employment in the Sri Lankan Economy. However, Sri Lanka is no longer maintaining its comparative advantage in the apparel industry. The study has found that majority of Stress Related Factors are inter correlated and significantly influenced stress.

Key Words- Job Stress, Job Involvement, Job Ambiguity, Culture, Salary and

Environment

1.   INTRODUCTION

The stress is burning issue in modern society. The effect of stress is a deviation from the existing physical and psychological condition of human life. The stress is regarded as an inevitable consequence of employee functionality. The occupational stress adversely affects the health and performance of the employees of an organization.

World's human activities changing speedily necessitate stable adjustment. Technology is changing, so are social habits, values, social structures, and people. Everyone has to cope with those adjusts, not only individuals, but the organizations and governments as well. A lot of people are aware of positive values of those changes, but very few would think of the negative consequences that may ensue. Luthans (2000) has explained that stress is usually thought of in negative terms. It is thought to be caused by something bad. Stress harmfully impacts the human lives, including workers. According to Braaten Dan J. (2000), job stress can be defined as 'the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker'.

1.2.   SIGNIFICANCE OF THE STUDY

Board of Investment (BOI) has been playing legal part of apparel industry. Majority apparel of factories are registered under BOI act, some are registered under Ministry of Industrial Development and others are operating without any legal registration. Under BOI type of factories can be categorized into two; factories in free trade zone and factories out side the free trade zone. According to the Central Bank, the apparel industry is significant in several respects in the economy of Sri Lanka. The contributions made by this industry include (1) the employment generation, (2) the foreign exchange earnings, (3) the majority of investors in this industry being Sri Lankan people and (4) apparel factories in the Island wide, being the most important among them (Annual Reports, 1997). Further, this distinguished feature has caused to absorb vast amount of regionally distributed resource. It has also benefited to achieve some regional economic balance. Utilization of youth vigour – This sector enables to get the maximum use of youth vigour as this industry aims to absorb the young labour: it has resulted in using use our youth strength. Weakening the monopoly – As a result of establishment of apparel factories at regional level the monopolies existed so far are disappeared. This contributed in improving the industrial sector and achieving different economic purposes. In addition, the government has newly established industrial processing zones and dedicated economic centre that enables to get the apparel industry to develop further. 200 Apparel Factory Programme, which has been launched by the Government (1992) as a part of its Rural Industrialization Programme, has as its main objects the alleviation of poverty in the rural areas through the creation of massive employment opportunities. Besides, up to 1977 the women's employment opportunities in Sri Lanka were very rare. Since 1977 women has found more employment opportunities because of the establishment of apparel industry. This situation has enhanced there after increasing rapid way. Sri Lankan labour force has found job opportunities from apparel industry. The Central Bank of Sri Lanka expresses that a further Textile, wearing apparel and leather product which was the major sub-sector of the export oriented industries, accounting for 43 per cent of total export earnings of the country, recorded a higher growth of 8.3 per cent in 2007 compared to the 4.0 per cent growth recorded in 2006(Annual Report, 2007).

1.3.   STATEMENT OF THE PROBLEM

Once upon a time the apparel industry is the largest foreign exchange earner and a key generator of employment in the Sri Lankan Economy. But now the apparel industry

has gone through turbulent times and is facing many difficulties. The study has examined the apparel industry with various problems relating to job stress of those factories that have such problems. It seems that there are some invisible problems in apparel industry. But there was no attempt to make a detailed study relating to stress among workers in Sri Lankan Apparel Industry context. Therefore the present study is a timely attempt to investigate the stress among workers in Sri Lankan Apparel Industry.

2. LITERATURE SURVEY

The significant literature pertaining to the study has been abstracted to provide the background of the present study.

According to Williams Stephen and Cooper Cary L. (1998), the study of *United Kingdom,* occupational stress was hindered. The outcome scales measure job satisfaction, organizational satisfaction, organizational security, organizational commitment, anxiety depression, resilience, worry, physical symptoms, and exhaustion.

Kumar Sajjan and Jejurkar Krupa (2005), in their study quantified the stress of undergraduate and postgraduate students during their period of education. The study concluded that there was considerable amount of stress in occupational therapy students. The stress levels were higher in under graduate students compared to post graduate students. Among them, the first year under graduate students were found to suffer higher stress levels, which was correlated to academic factors.

According to Clements *et.al* (2000), research has shown that crowded work places, job dissatisfaction and physical environment are the main factors affecting productivity. The data was produced and analyzed using occupational stress indicator in conjunction with the analytical hierarchical process. Thermal problems, stuffiness, sick building syndrome factors and crowded work places were most frequent complaints. Results showed that the primary factors influencing productivity varied between organizations, and also between buildings or offices within the same building. This research has established a reliable methodology for evaluating self assessed productivity. The results suggest that the productivity could be improved by 4% to 10% by improving the office environmental conditions.

Barrick. (1989), examined stress among vocational supervisors. The sample consisted of vocational supervisors in Ohio (N = 202). Scores on the occupational stress subscales indicated that role insufficiency, role ambiguity, and role boundary were not problems for supervisors. The results of this study did not completely coincide with the burnout model. The Ohio vocational education program and local schools must seriously look at the burnout problem. While it appears that job satisfaction, occupational stress, personal strain and personal coping are not major problems for vocational supervisors, attention should be paid to problems of role overload and the scope of responsibility of the individuals.

The study, De Croon *et.al* (2004), based on combined existing organizational stress theory and job transition theory, examined antecedents and consequences of

turnover among Dutch truck drivers. For this purpose, self-reported data on stressful work (job demands and control), psychological strain (need for recovery after work and fatigue), and turnover were obtained from 820 drivers in 1998 and 2000. In agreement with the model, the results showed that strain mediates the influence of stressful work on voluntary turnover. Also in conformity with the model, job movement to any job outside the trucking industry (i.e., inter occupational turnover) resulted in a larger strain reduction as compared to job movement within the trucking industry (intra occupational turnover). Finally, strain was found to stimulate inter occupational turnover more strongly than it stimulated intra occupational turnover. These findings provide a thorough validation of existing turnover theory and give new insights into the turnover (decision) process.

Devonport *et.al* .(2008) recognized the sources of stress and suggested certain coping strategies among Lecturers. The study listed out three types of stress, namely, Organizational Stress, Subject-linked Stress and Non-Organisational Stress that affect the sample population. The authors identified mainly personal and situational factors and the related sources of stress including workload, role clarity, environment, organizational polices and procedures. The study identified 19 Coping Strategies that could be used to manage stress. Finally, interventions designed to reduce stress should seek to increase the use of preventive and proactive coping strategies, thus reducing the need for reactive coping.

To sum up the review of literature, many contributions have offered different perspectives of stress in different occupation states worldwide and explained many variables, models, analyzing tools, coping strategies and outcomes of stress. The review of literature validated the appropriateness of the variables to answer the research problem.

3. METHODOLOGY
3.1. OBJECTIVES OF THE STUDY
The objectives of the present study are as follows.
1. To examine the level of occupational stress among apparel industry workers in Sri Lanka.
2. To study occupation stress- related issues in Sri Lankan Apparel Industry.

3.2. HYPOTHESES
The following null hypotheses have tested in this study.

NH_1 = "*The socio- economic factors have no significant influence on the job stress related*
variables"

NH_2 = "*There is no significant group of occupational stress of various dimensions between the respondents in Sri Lankan Apparel Industry*".

3.3. PERIOD OF STUDY
The sample survey was conducted within a period of one year from July 2008 to July 2009.

3.4. SAMPLE

The population of the present study is the blue collar workers of private sector apparel industry in Sri Lanka. In this fact, the research sample included 10 apparel factories under BOI in Sri Lanka and amount of sample respondents were 50 for 5 per each factory. The principal method of the primary data collection was done through questionnaire; the random sampling technique was administered for the present study.

3.5. STATISTICAL TOOLS:
The variables were evaluated by the percentage analysis, multiple regression analysis, coefficient of correlation, chi-square and factor analysis using the software SPPS version 16

3.6. VARIABLES OF THE STUDY
The variables of the study are as follows.
- Job Involvement,
- Job Ambiguity,
- Culture,
- Salary and
- Environment

4. ANALYSIS
4.1. MEASURE NO 1: THE CALCULATIONS FOR DEGREE OF STRESS LEVEL
The responses of all the questions in the questionnaire were tested using the five point scales taking point as 5, 4, 3, 2 and 1. As a first calculation for total variables: 150 is the highest value and 30 is lowest value. The difference between these two values is 120 (150 - 30). The value 120 was divided by 4 so as to make a four range continuum (120/4=30) which could category the respondents' responses. The following figure shows the distribution of range of stress.

Figure 1

30	60	90	120
150			

| Low Stress | Moderate | Considerable | High Stress |
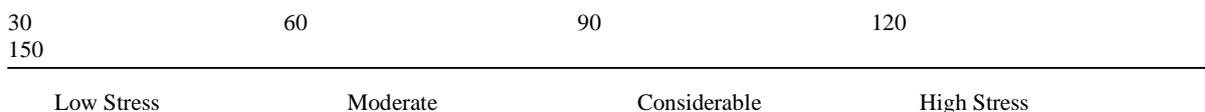
The range of stress can be categorised in to four namely High Stresses, Considerable, Moderate and Low Stress. 90 is central point of values.

Low Stress and Moderate levels of stress are manageable but Considerable and high stress are damageable for both side; human and organisation. This concept was used because the directions of the relationships were theoretically predictable.

4.1.1. THE CALCULATIONS OF DEGREE OF STRESS LEVEL
The calculations of degree of stress level for all the variables are presented in Table 1 along with frequencies and percentages.

Table1: The Degree of Total Variables / Overall- Percentage

Degree of stress	Frequency	Percentage
High Stress	07	14%
Considerable	20	40%
Moderate	23	46%
Low Stress	00	00%
Total	50	100

Source: Primary Data

According to the aggregate score of the respondents, they have been classified into different level of stress. From the table 1, it is clear that the highest frequency (23) is recorded under moderate level. It is indicated more respondents suffering from stress. Moderate stress is manageable. If any employee is suffering from less amounts of stress like low level and moderate level, employee can use it for his development and also organization can use him for the purpose of maximizing organizational goals. But 20 respondents are under considerable and 07 respondents are high stress. These stress situations are not good for the person as well as organization.

4.1.2. STRESS LEVELS – VARIABLES WISE

Table 2 describes the results of multiple regression analysis of the respondents in the Western Province in terms of R (Multiple Correlation Co-efficient), R^2 (co-efficient determination) and the incremental value of R^2.

Table 2 Result of Multiple Regression Analysis-

Variables	R	R^2	Incremental value R^2
Job Involvement	0.687	0.471	0.488
Job Ambiguity	0.837	0.700	0.229
Culture	0.920	0.846	0.146
Salary	0.990	0.980	0.134
Environment	1.000	1.000	0.020

Source: Primary Data

It is found from the above Table that among the five factors, the job involvement related stress explains 48.8% of the total stress. The job ambiguity related stress accounts for 22.9%. The culture related stress explains 14.6%, salary related stress accounts for

13.4% and environment related stress 2.0% on the total stress. It is inferred that job involvement related stress gets 48.8% while job ambiguity related stress. It is also noted from the above Table that nearly 48.8% is recorded in the job involvement related stress among workers in apparel industry.

4.2. CORRELATION OF VARIABLES

The results of inter correlation analysis between the different variables of stress among the workers in apparel industry is presented in **Table 3** in the form of correlation matrix, Further; the significance of the correlation is indicated.

Table 3 Correlation of Variables

Variables of Stress	Job Involvement	Job Ambiguity	Culture	Salary	Environment
Job Involvement	1				
Job Ambiguity	0.760*	1			
Culture	0.485*	0.650*	1		
Salary	0.376*	0.506*	0.706*	1	
Environment	0.444*	0.678*	0.376*	0.682*	1

- Significant at 5% level,   Source: Primary Data

The Table reveals that there exists significant inter correlation between the different variables of stress among the workers in apparel industry. It is inferred that there exists significant inter correlation between the various stress related factors of the workers in the apparel industry.

4.3. TESTING -HYPOTHESIS: NH$_1$

Relationship of Socio-Economic Factors to Worker's Stress

NH$_1$ = "_The socio- economic factors have no significant influence on the job stress related variables_".

Table 4 describes the socio-economic factors, the chi-square values, and their significance on the variables among the workers in apparel industry.

Table 4 Chi-Square Values and their Significance

Variables / Socio economic Factors	Job Involvement	Job Ambiguity	Culture	Salary	Environment
Gender	5.89	6.867*	-	6.94	3.448
Marital Status	5.488	4.991*	0.544	6.435*	4.908
Age	21.746*	12.154*	6.803*	0.195	6.667*
Educational Qualification	8.199	27.851*	28.427*	9.714	15.25*
Experiance	32.296*	23.902*	10.034*	14.64*	12.53

*-Significant (p value ≤ 0.05), Source: Primary Data

It is found from the above Table that the **hypothesis**, **"**the socio- economic factors have no significant influence on the stress related variables" is rejected. The chi-square value was significant in all the cases of job ambiguity, three cases in culture, and two cases in job involvement, salary and environment. In other cases, the above hypothesis is accepted since chi-square value was not significant.

4.4. Testing -Hypothesis: NH_2

Groups of Stress- Variable wise
NH_2 = *"There is no significant group of occupational stress of various dimensions between the respondents* in Sri Lankan Apparel Industry".

Table - 5 observes the results of Factor Analysis in terms of factor loading by using the principle of component analysis under the varimax rotation with kiser normalisation method for the respondents.

Table - 5 Results of Factor Analysis – Variable wise – Sri Lankan Apparel Industry

Factors	Group1- free or low stress	Group2- moderate stress	Group3- considerable stress	Group4- high stress
Job Involvement	0.736			
Job Ambiguity		0.958		
Culture		0.650		
Salary			0.811	
Environment				0.872

Source: Primary Data

The number of components extracted branch manager were four with eigen values of 4.367, 3.534, 1.371 and 1.047 in Sri Lankan Apparel Industry. Occupational Stress Factors were classified under four groups, namely, Group 1- free stress/low stress , Group 2 –moderate stress, Group 3- considerable stress and Group 4- high stress .

It is to be noted from the above Table that the five stress groups such as free or less stress, moderate stress, considerable stress and high stress displayed under Job Involvement, Job Ambiguity with Culture, Salary and Environment respectively on the occupational stress.

Free or low stress and moderate of stress are manageable but considerable and high stress are damageable for both side; human and organisation.

According to the above Table, the **hypothesis,** "There is no significant group of occupational stress of various dimensions between the respondents in Sri Lankan Apparel Industry", is rejected because the values are displayed under four groups.

5.   FINDINGS OF THE STUDY
The following of the important findings of the study

1. The finding from the Socio Economic Factors, the gender wise analysis revealed that majority of workers were female apparel industry of Sri Lanka.

2. It was found that the majority of workers are at the age of 25 to 35 years old.

3. Regarding marital status from Socio Economic Factors, it is clear that majority of workers were unmarried.

4. It is inferred that all the socio economic factors have more significant influence on all the variables.

5. The result of analysis that there exists significant inter correlation between the various stress related factors of the workers in apparel industry of Sri Lanka

6.   SUGGESTIONS OF THE STUDY
The following suggestions are provided to reduce the stress among the workers.

1. According to the study the majority of workers are at the age of 25 to 35 years old. The necessary steps are to be taken to replace employees as workers at earlier age so, that may reduce the stress.

2. It was found that majority of the sample workers were from female category. Hence necessary steps to be taken to appoint more male workers. Male workers manage the stress than female workers.

3. According to the study, the experience of majority of workers was equal or less than 5 years. Workers should be provided more monetary benefit based on experience, as the way to reduce the stress.

4. Watching television exercise excursion/picnic trip yoga, meditation, were considered for reducing stress.

5. According to the study, the lack of adopting technology is the one reason that could increase the level of stress. Hence it is suggested that steps are to be taken to adopt innovative technology to reduce the stress.

7.   CONCLUSION

The study found that Socio Economic factors had significantly influenced on stress related factors. According to the analysis job involvement, job ambiguity, culture, salary and environment were significantly influenced on the total stress of workers. And majority of factors were interrelated. It can be concluded that majority of Stress Related Factors are inter correlated and significantly influenced stress. Finally from overall analysis, apparel industry workers were suffering from stress.

Recognizing the early signs of stress and then paying attention to them can make an important difference in the quality of human life and may actually influence human survival in the long run.   Both individual (he/she) and organization have the responsibility to manage stress; individual should manage his stress for his own benefit while the organization should help to manage individual stress for its own survival and to fulfill organizational objectives..3

REFERENCE

Bales Susan Nall, Heckman James, McEwen Bruce, S. and Rolnick Arthur, J.2005. *Excessive Stress Disrupts the Architecture of the Developing Brain*, Website: http://www.developingchild.net.

Barrick R. Kirby. (1989). *Burnout and Job Satisfaction of Vocational Supervisors*. Journal of Agricultural Education. Winter. 35-41.

Bigert Carolina.2007. *Cardiovascular Disease Among Professional Drivers and Subway staff in Stockholm*, Department of Public Health Sciences, division of Occupational Medicine, Karolinska Institute, Stockholm, Sweden.

Braaten Den J.2000. *Occupational Stress in Mental Health Counselors*. The Graduate College, University of Wisconsin-Stout, Menomonie, Wisconsin

Central Bank of Sri Lanka. 1994. *Annual Report Colombo*, 53.

Central Bank of Sri Lanka. 1997. *Annual Report, Colombo*, 52- 61.

Central Bank of Sri Lanka. 1999. *Annual Report, Colombo*, 50.

Central Bank of Sri Lanka. 2003. *Annual Report*, Colombo.

Central Bank of Sri Lanka. 2004. *Annual Report, Colombo*, 124- 142

Central Bank of Sri Lanka.2006. *Annual Report, Colombo,* 120- 140.

Central Bank of Sri Lanka. 2007. *Economic and Social Statistics of Sri Lanka*, Colombo.

Central Bank of Sri Lanka. 2007. *Annual Report*, Colombo.

Clements–Croome Derek and Baizhan Li. 2000. *Productivity and Indoor Environment*, University of Reading, Department of Construction Management and Engineering, UK, Jukes Associates, UK, Proceedings of Healthy Buildings, 1 629

De Croon Einar M.,. Sluiter Judith K., Blonk Roland W. B., Broersen Jake P. J. And Frings-Dresen Monique H. W.2004, *Stressful Work, Psychological Job Strain, and Turnover: A 2-Year Prospective Cohort Study of Truck Drivers.* Journal of Applied Psychology. American Psychological Association. 89(3), 442–454.

Devonport Tracey J, Biscomb Kay and Lane Andrew M .2008. *Sources of Stress and the Use of Anticipatory, Preventative and Proactive Coping Strategies by Higher Education Lecturers.* Journal of Hospitality, Leisure, Sport and Tourism Education. School of Sport, Performing Arts and Leisure, University of Wolverhampton, Walsall, UK .7(1), 70 – 81.

Kelegama Saman, April 2005. *Ready-Made Apparel Industry in Sri Lanka: Preparing to Face the Global Challenges,.* Asia-Pacific Trade and Investment Review. Colombo, 1(1).

Kumar Sajjan and Jejurkar Krupa.2005. *Study of Stress Level in Occupational Therapy Students during their Academic Curriculum.* The Indian Journal of Occupational Therapy: National Informatics Centre, New Delhi. XXXVII(1), 11-14.

Luthans Fred. 2002. *Organizational Behavior*, McGraw-Hill, New York
.
Nelson Debra L. and Quick James Campbell. 2003. *Organizational Behavior*, Thomson South –Western, Ohio

Pawar Surg Capt Findings Relevant to Policy Formation' Education Journal, Chinese University of Hong A.A and Rathod J. 2007. *Occupational Stress in Naval Personnel*, MJAFI., Colaba, Mumbai, India.

Steve M. Jex, 2002. *Organizational psychology*, John Wiley & Sons (Asia) Pte Ltd, 2 Clementi Loop, Singapore.

Williams Stephen and Cooper Cary L. 1998. *Measuring Occupational Stress: Development of the Pressure Management Indicator*, Journal of Occupational Health Psychology, American Psychological Association. Washington 3(4), 306-321.