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## FACTORS CONTRIBUTING TO WORK STRESS OF THE SOFTWARE PROFESSIONALS

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**Abstract:** *With each passing day, the technology is improving and the systems, processes and networks are becoming more and more complex, putting extra pressure on individuals. Perhaps the most powerful might be termed the mood and culture of the IT industry. As the Indian IT organizations are going up the value chain and going global, the biggest challenge would not be technology management but how to keep the workforce healthy. Therefore it has become increasingly important for organizations to adopt and invest in approaches and policies that enhance the health of their employees and keep the level of occupational stress at its optimum. (Glass, Robert, L., 1997) Programmer stress as being “extremely common and extremely problematic” and points out that “deep thinking is easily affected by stress”. Locally, a number of software professionals have echoed concerns about rising stress levels in their jobs and have indicated their willingness to be part of a concerted effort to provide stress relief. The results of this study have significant implications for organizations and individuals who intend to join the IT profession. By identifying and understanding factors at the workplace which are likely to cause stress for this group of professionals, organizations and government policy-makers will be better able to design training, motivation and coping programs to help such employees alleviate their stress.*

**Keywords:** *Stress Factors, Software Professionals, Work Stress, Role Conflict, Work Pressure, Sources of Job Stress.*

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## **INTRODUCTION**

The revolution in the field of information technology and other related technological fields such as microelectronics, microprocessors and computing telecommunications have altered the mode of combination, processing, storage and distribution of Information. Information thus, is becoming the central part of growth by increasing efficiency through restructuring the organization of other factors of production, such as, capital and labour. This ongoing process is steering in a whole range of structural changes in every sector of the economy across the globe. There are reductions in cost and increase in growth. New entrepreneurial classes are emerging; new forms of work are replacing the traditional forms. New Industries are mushrooming; traditional industries and industrial structures are withering. This technological change offers a mixed bag to the developing economies.

Perceived occupational stress related to role overload, role ambiguity, role conflict, group and political pressures, responsibility for persons, under participation, powerlessness, poor peer relations, intrinsic impoverishment, low status and strenuous working conditions (Srivastava A.K. and Singh A.P., 1981). Negative work group climate and powerlessness may be dominant cause of stress experienced by Indian managers than role ambiguity (Das G.S., 1982). Support from supervisors and co-workers buffered the effects of job demands on depression and job satisfaction (Karasek et al., 1982). Role over load, difficulty in the task domain, the demands and the requirements of job (Narayanan, 1983) are closely associated with role conflict. Intrinsic pressures related to job content (Van Ameringen et al., 1988) was related to increased standing diastolic blood pressure.

The index of intrinsic pressures included a measure of quantitative workload (demands) and a measure of job participation (job control). Exposure to poor equipment and work station design, in conjunction with poor task design and work organisation give rise to work-related upper limb disorders (Chatterjee, D.S., 1992). Relationships between the stressors and both the strains and the performance measures were linear and negative – in other words, the lower the level of stressors, and the better (Abramis, 1994). Home-work conflict (Ray, Eileen Berlin and Miller, Katherine I., 1994) is a source of stress for women in human service occupations and proved that social support from intra-organisational and extra-organisational sources would help individuals from such stress. (Ashok K. Sahni , 1998) Low stressed group compared with the high stressed group tends to be significantly higher in



respect of their job commitment, self esteem, satisfaction and good human relations. (Lim and Hian, 1999) Lack of career advancement, workload, risk-taking and decision making and employee morale and organisational culture were identified as four broad categories of stressors. Stress results from fear of obsolescence and individual team interactions accounted maximum (K. S. Rajeswari and R. N. Anantharaman, 2003). Rapid change of the modern working life is associated with increasing demands of learning new skills, need to adopt to new types of work, pressure of higher productivity and quality of work, time pressure and hectic jobs are increasing stress among the workforce (Kulkarni G.K., 2006).

### **STATEMENT OF THE PROBLEM**

Review of studies relating to job stress indicated that the common stressors acting on employees may generate from individuals, groups, organisations or extra-organisational sources. Individual, group and organisational sources are work stressors, while extra-organisational stressors are non-work stressors. Individual stressors depend to a large extent on qualities and behaviour or the character of a person. Lack of group cohesiveness, absence of leadership support, poor relationship with colleagues, superiors and subordinates are the group stressors. Role factors, job factors and physical environment factors constitute organisational stressors. Role factors refer to role conflict, role ambiguity, role overload, role stagnation and inadequacy of role authority. Job factors include difficulty in performing the job, feeling of inequity, feeling of being poorly paid and mismatch between one's capability and requirements of the job. Poor ventilation, work space arrangement, lighting, noise, etc., constitute Physical Environment Factors. Extra organisational factors consist of family problems, financial difficulties, and conflict of family demands and organisational demands.

The objective of the study is to identify areas of work where stress is caused by the nature of the work being performed, and to highlight the flash points where stress occurs and the factors that contribute to it.

### **METHODOLOGY**

The issues are addressed through a descriptive research study approach. Much of the existing literature in the field has relied upon survey evidence to develop baseline measurements of occupational stress in the IT field.



In order to provide insights into the conditions of work and employment, a sample survey, with elements of both cluster and stratified random sampling method was used. The sampling frame was set up to include firms primarily engaged in the development, marketing or servicing of software but not IT-enabled services. Sampling was done in four major IT clusters in Tamilnadu; Chennai, Coimbatore, Madurai and Trichy. The sampling frame was drawn from firms' names that were compiled using a mix of sources, such as local directories, state level IT department and so on. Firms for the sample survey were chosen on two criteria: Size of the firm and location of firm.

In order to account for all size of firms the sample survey was stratified into three size groups, distinguishing between firms employing less than 100 employees (small size firms), more than 100 and less than 500 (medium size firm) and more than 500 (large size firm). The size distribution and the sample size for each location were both set consistent with aggregate numbers from the study of the databases of the firms. The survey has covered employees in all three-size classification in more or less proportionate manner. Firms tend to concentrate at specific geographic locations as a result of increasing returns to scale as the scale of production in the region increases. Given the distribution pattern Chennai was an obvious choice for the study. Then, the region with the smallest agglomeration and smallest average number of products/services per software firm, Tier II cities such as Coimbatore, Madurai and Trichy were chosen for the study. The number of activities the software firms takes up is a signal towards its innovative capability. The study has given almost equal amount of weight to the sample from Chennai, and from the rest. Thus the survey consists of 45% of the software professionals covered from Chennai, 30% from Coimbatore, 15% from Madurai and from 10% from Trichy. The responses to the questionnaire was collected from 1000 professionals, 450 from Chennai and 300 from Coimbatore, 150 from Madurai and 100 from Trichy. These employees were selected from 65 different firms.

The major sources of stress for the sampled software professionals have been analysed based on 42 statements measuring stressors on a five point scale on the Likert model ranging from strongly agree to strongly disagree and strongly satisfied to strongly dissatisfied.



## RESULTS & DISCUSSIONS

The responses collected were analysed using factor analysis technique, to identify the most significant factors causing job stress among software professionals. Factor analysis has been carried out by following Principal Component Analysis with Varimax rotation.

The identified significant sources of work stress through factor analysis are broadly classified into six factors such as individual factors, group factors, organisational – role and job factors, physical environment factors and extra-organisational factors. Statements having loadings less than 0.4 and statements which are less significant in causing job stress (i.e. statements with negative loadings) are not included in this analysis.

Table 1 shows the factor groups of sources of job stress mentioned above.

**Table 1 Classification of Significant Sources of Work Stress into Broad Categories / Factors**

<b>Work Stress Factors</b>	<b>Factor Loadings</b>
<b>I Individual Factors</b>	
For me, work comes first, then family or private life.	0.932
If I postpone something that I was supposed to do today, I will have trouble sleeping at night.	0.93
If a task has to be done well I'd better take care of it myself.	0.726
Your job reduces the amount of time you can spend with your family	0.654
People close to me say I sacrifice myself too much for my job.	0.537
As soon as I get up in the morning I start thinking about work problems.	0.532
I have a lot of responsibility in my job	0.499
<b>II Group Factors</b>	
I have been physically or emotionally affected by the bullying at work	0.747
I don't get proper guidance from my superiors	0.716
I have been physically or emotionally affected by the racial abuse at work	0.672
I don't get help and support from my colleagues whenever its required	0.466
<b>III Organisational Role Factors</b>	
I have constant time pressure due to a heavy workload	0.93
The deadlines I am expected to work to are unrealistic	0.917
I don't have a say in decisions about my work	0.787
My job does not provide me with a variety of interesting things to do	0.785
I don't have a clear understanding of the task I am expected to do	0.784
My work demands a high level of skill or expertise	0.623
<b>IV Organisational Job Factors</b>	
My job promotion prospects are poor	0.949
Training and Development & Career Opportunities in this	0.948



organisation are poor	
I am not satisfied with my organisation's welfare amenities	0.708
Incentives given under appraisal system are not up to the satisfactory level	0.619
I am not satisfied with the appraisal system	0.772
My job security is poor	0.674
<b>V Physical Environment Factors</b>	
I am not satisfied with the ventilation facilities in my organisation	0.917
Lighting facilities in my organisation is not satisfactory	0.914
I don't have comfortable workspace	0.777
Condition of computer keyboard and mouse is not satisfactory	0.674
Reflections and glare on computer screen is a source of stress for me	0.595
<b>VI Extra-organisational Factors</b>	
Family worries or problems distract you from your work	0.745
Problems at work make you irritable at home	0.717
Family obligations reduce the time you need to relax or be by yourself	0.697

### Association between Demographic Variables and Work Stress Factors

Based on the significant stressors identified and broadly classified, further analysis has been made to understand whether stressors differ according to the difference in the demographic and job related variables, through Analysis of Variance (ANOVA).

#### Gender and Sources of Stress

An attempt has been made to study the relationship between sources of stress of software professionals and their age. In this context, Analysis of Variance is performed and the results have been presented in the following Table 2.

**Null Hypothesis:** There is no significant difference among respondents based on gender with respect to stressors.

**Table 2 Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Gender**

Work Stress Factors	ANOVA (F Ratio)	Sig.
Individual Factors	5.966	0.015
Group Factors	3.203	0.074
Organisational Job Factors	1.116	0.291
Organisational Role Factors	23.357	0.000
Physical Environment Factors	0.887	0.347
Extra-organisational Factors	12.717	0.000

A cut of point of .05 (Significant at 5% level) is used as a criterion for statistical significance. The Table 2 clearly shows that the observed significance values for the factors Group



Factors, Organisational Job Factors and Physical Environment Factors are not significant. The results show that these factors have no significant relationship with gender.

Table 2 also shows that the observed significance values for the factors Individual Factors, Organisational Role Factors and Extra-Organisational Factors are significant. Organisational Role factors of stress are the major stressors, which differ for the different gender groups of software professionals with a high F ratio of 23.357. Individual factors also make significant difference among the respondents belonging to different gender groups. There has been significant relationship between gender of the software professionals and stress caused by Extra-organisational factors.

In view of this explanation, the null hypothesis is rejected for Organisational role factors, Individual factors and Extra-organisational factors and accepted for all the other factors of stress (Group Factors, Organisational Job Factors and Physical Environment Factors).

#### **Work Stress Factors and Age Groups**

Here, an attempt has been made to study the relationship between sources of stress of software professionals and their age. In this context, Analysis of Variance is performed and the results have been presented in the following Table 3.

**Null Hypothesis:** There is no significant difference among employees belonging to the different age groups with respect to stressors.

**Table 3 Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Age**

<b>Work Stress Factors</b>	<b>ANOVA (F Ratio)</b>	<b>Sig.</b>
<b>Individual Factors</b>	1.160	0.324
<b>Group Factors</b>	0.576	0.631
<b>Organisational Job Factors</b>	3.375	0.018
<b>Organisational Role Factors</b>	2.286	0.077
<b>Physical Environment Factors</b>	30.236	0.000
<b>Extra-organisational Factors</b>	1.449	0.227

The above Table 3 shows that the relationship between age and stress factors is not significant except for the Organisational Job Factors and Physical Environment Factors. The value of 'F' has been found to be very high at 5% significance level with p-value = 0.000 for Physical Environment Factors. There has been significant relationship between age of the software professionals and stress caused by Organisational job factors.



Hence, the null hypothesis has been rejected for the Organisational Job factors and Physical Environment Factors and accepted for all the other factors of stress. Dissatisfaction in the performance appraisal system and lack of proper lighting and ventilation facilities are the most significant organisational job and Physical Environment Factors which cause stress.

#### **Academic Qualification and Sources of Stress**

In this part of the analysis, an attempt has been made to measure the relationship between educational qualification of the software professionals and sources of stress. The following null hypothesis has been framed to test the significance of relationship between education and sources of stress.

**Null Hypothesis:** There is no significant difference among respondents belonging to the different educational levels with respect to stressors.

The following Table 4 shows the summary of ANOVA 'F' ratios for sources of stress with respect to academic qualification.

**Table 4. Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Academic Qualification**

<b>Work Stress Factors</b>	<b>ANOVA (F Ratio)</b>	<b>Sig.</b>
<b>Individual Factors</b>	0.224	0.880
<b>Group Factors</b>	0.130	0.942
<b>Organisational Job Factors</b>	1.865	0.134
<b>Organisational Role Factors</b>	0.280	0.840
<b>Physical Environment Factors</b>	18.358	0.000
<b>Extra-organisational Factors</b>	0.282	0.839

The above Table 4 shows that the relationship between academic qualification and stress factors is not significant except for the Physical Environment Factors. The value of 'F' has been found to be very high at 5% significance level with p-value = 0.000 for Physical Environment Factors.

Hence, the null hypothesis has been rejected for the Physical Environment Factors and accepted for all the other factors of stress. Lack of proper ventilation and lighting facilities are the most significant Physical Environment Factors which cause stress.

#### **Work Stress Factors and Marital Status**

Here, an attempt has been made to study the relationship between sources of stress of software professionals and their marital status. In this context, Analysis of Variance is performed and the results have been presented in the following Table 5.





**Null Hypothesis:** There is no significant difference among the respondents belonging to different marital status with respect to stressors.

**Table 5. Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Marital Status**

Work Stress Factors	ANOVA (F Ratio)	Sig.
Individual Factors	1.470	0.231
Group Factors	0.114	0.892
Organisational Job Factors	1.854	0.157
Organisational Role Factors	1.057	0.348
Physical Environment Factors	12.138	0.000
Extra-organisational Factors	0.297	0.743

The above Table 5 shows that the relationship between marital status of the respondents and stress factors is not significant except for the Physical Environment Factors. The value of 'F' has been found to be very high at 5% significance level with p-value = 0.000 for Physical Environment Factors. There has been significant relationship between marital status of the software professionals and stress caused by Physical Environment Factors.

Hence, the null hypothesis has been rejected for the Physical Environment Factors and accepted for all the other factors of stress.

#### **Region and Sources of Stress**

The regional picture is also enlightening. The Table 6 below shows key statistics of the sources of respondents from the four zones in Tamilnadu such as Chennai, Coimbatore, Madurai and Trichy. The following null hypothesis has been framed to test the significant relationship between the sources work stress of the software professionals and the region they belong to.

**Null Hypothesis:** There is no significant difference among employees of different regional areas with respect to stressors.

**Table 6. Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Region**

Work Stress Factors	ANOVA (F Ratio)	Sig.
Individual Factors	0.127	0.944
Group Factors	0.036	0.991
Organisational Job Factors	0.736	0.530
Organisational Role Factors	2.704	0.044
Physical Environment Factors	0.138	0.937
Extra-organisational Factors	0.279	0.840



A cut of point of .05 (Significant at 5% level) is used as a criterion for statistical significance. The Table 6 clearly shows that the observed significance values for the factors Individual Factors, Group Factors, Organisational Job Factors, Physical Environment Factors and Extra Organisational Factors are not significant. The results show that these factors have no significant relationship with the region of the respondents.

Table 6 also shows that the observed significance value for the factor Organisational Role Factors is significant. Organisational Role factors of stress are the major stressors, which differ for the different regions of software professionals with F ratio of 2.704.

In view of this explanation, the null hypothesis is rejected for Organisational role factors and accepted for all the other factors of stress (Individual factors, Group Factors, Organisational Job Factors, Physical Environment Factors and Extra-organisational factors).

### **Job Tenure and Sources of Stress**

An attempt has been made to measure the relationship between the tenure of the job of software professionals and sources of stress. The following null hypothesis has been framed to test the significance of relationship between lengths of service and sources of stress.

**Null Hypothesis:** There is no significant difference among employees of different levels of experience with respect to stressors.

**Table 7. Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Job Tenure**

<b>Work Stress Factors</b>	<b>ANOVA (F Ratio)</b>	<b>Sig.</b>
<b>Individual Factors</b>	1.860	0.156
<b>Group Factors</b>	0.251	0.778
<b>Organisational Job Factors</b>	0.217	0.805
<b>Organisational Role Factors</b>	4.569	0.011
<b>Physical Environment Factors</b>	18.379	0.000
<b>Extra-organisational Factors</b>	2.141	0.118

The above Table 7 shows that the relationship between job tenure of the respondents and stress factors is not significant except for the Organisational Role Factors and Physical Environment Factors. The value of 'F' has been found to be very high at 5% significance level with p-value = 0.000 for Physical Environment Factors. There has been significant relationship between levels of experience of the software professionals and stress caused by organisational role factors.



Hence, the null hypothesis has been rejected for the Organisational Role Factors and Physical Environment Factors and accepted for all the other factors of stress.

### Organisation Size and Sources of Stress

In order to understand whether stressors differ according to the size of the organisations where the software professionals are working, Analysis of Variance has been performed and the following null hypothesis has been tested.

**Null Hypothesis:** There is no significant difference between software professionals belonging to different organisation sizes with respect to sources of stress.

The summary of ANOVA 'F' ratios for causes of stress and size of organisation has been furnished in the following Table 8.

**Table 8 Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Organisation Size**

Work Stress Factors	ANOVA (F Ratio)	Sig.
Individual Factors	3.650	0.026
Group Factors	0.107	0.899
Organisational Job Factors	1.925	0.146
Organisational Role Factors	3.341	0.036
Physical Environment Factors	30.899	0.000
Extra-organisational Factors	3.708	0.025

The 'F' ratios of ANOVA performed to test whether stressors differ according to the size of the software concern reveals significant results for Group factors and Organisational Job factors and insignificant results for all the other factors of stress. Hence, the null hypothesis is not accepted for Group factors and Organisational Job factors and accepted for rest of the stress factors.

Thus it is understood that individual factors, role factors, Physical Environment Factors and extra-organisational factors causing work stress do not differ according to the size of organisation.

### Type of the Software Organisation and Sources of Stress

In order to understand whether stressors differ according to the type of the software organisations where the software professionals are working, Analysis of Variance has been performed and the following null hypothesis has been tested.



**Null Hypothesis:** There is no significant difference between software professionals belonging to different types of software organisation with respect to sources of stress.

The summary of ANOVA 'F' ratios for causes of stress and size of organisation has been furnished in the following Table 9.

**Table 9. Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Organisation**

Type		
Work Stress Factors	ANOVA (F Ratio)	Sig.
Individual Factors	1.180	0.308
Group Factors	0.553	0.575
Organisational Job Factors	3.171	0.042
Organisational Role Factors	2.018	0.133
Physical Environment Factors	18.496	0.000
Extra-organisational Factors	3.018	0.049

The 'F' ratios of ANOVA performed to test whether stressors differ according to the type of the software concern reveals significant results for Individual Factors, Group factors and Organisational Role factors and insignificant results for all the other factors of stress (Organisational Job factors, Physical Environment Factors and Extra-organisational Factors). Hence, the null hypothesis is not accepted for Group factors and Organisational Job factors and accepted for rest of the stress factors (Organisational Job factors, Physical Environment Factors and Extra-organisational Factors).

Thus it is understood that Organisational Job factors, Physical Environment Factors and Extra-organisational Factors causing work stress do not differ according to the type of the software organisation.

#### **Current Position and Sources of Stress**

In order to understand the relationship between the designation held and sources of stress, Analysis of Variance has been performed. The following null hypothesis is tested.

**Null Hypothesis:** There is no significant difference among respondents of different designations with respect to stressors.

The following Table 10 shows the summary of ANOVA 'F' ratios for sources of stress with respect to designation held by software professionals.



**Table 10. Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Current Position**

Work Stress Factors	ANOVA (F Ratio)	Sig.
Individual Factors	1.043	0.384
Group Factors	0.432	0.785
Organisational Job Factors	2.910	0.021
Organisational Role Factors	2.830	0.024
Physical Environment Factors	34.324	0.000
Extra-organisational Factors	2.224	0.065

The above Table 10 clearly shows that stress caused by organisational role and job factors differ significantly among respondents with respect to their designation levels. The reasons for the differences arise due to the fact that tasks to be performed and responsibility differ according to the level of positions held. Also, there has been significant relationship between positions held by the software professionals and stress caused by Physical Environment Factors. Work Stress Factors from other factors such as individual factors, group factors and extra-organisational factors do not have significant differences for respondents whose position level differs.

Hence, the null hypothesis is accepted for individual factors, group factors and extra-organisational factors and rejected for organisational role & job factors and Physical Environment Factors.

#### **Average Working Hour and Sources of Stress**

In order to understand whether stressors differ according to the number of hours worked per week on average by the software professionals, Analysis of Variance has been performed and the following null hypothesis has been tested.

**Null Hypothesis:** There is no significant difference between average working hours with respect to sources of stress.

The summary of ANOVA 'F' ratios for causes of stress and average working hour has been furnished in the following Table 11.

The 'F' ratios of ANOVA performed to test whether stressors differ according to the average working hours reveals significant results for Organisational Job & Role factors, Physical Environment Factors and Extra-organisational factors and insignificant results for the Individual factors and Group factors. Hence, the null hypothesis is not accepted for the



Organisational Job & Role factors, Physical Environment Factors and Extra-organisational factors and accepted for the Individual factors and Group factors.

**Table 11. Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Average Working Hour**

Work Stress Factors	ANOVA (F Ratio)	Sig.
Individual Factors	1.919	0.105
Group Factors	1.894	0.109
Organisational Job Factors	3.022	0.017
Organisational Role Factors	2.784	0.026
Physical Environment Factors	18.813	0.000
Extra-organisational Factors	2.882	0.022

### Work Pattern and Sources of Stress

In order to understand whether stressors differ according to the work pattern type, Analysis of Variance has been performed and the following null hypothesis has been tested.

**Null Hypothesis:** There is no significant difference between work patterns with respect to sources of stress.

The summary of ANOVA 'F' ratios for causes of stress and work pattern has been furnished in the following Table 12.

**Table 12. Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Work Pattern**

Work Stress Factors	ANOVA (F Ratio)	Sig.
Individual Factors	1.055	0.367
Group Factors	0.194	0.901
Organisational Job Factors	1.576	0.194
Organisational Role Factors	2.081	0.101
Physical Environment Factors	29.393	0.000
Extra-organisational Factors	3.810	0.010

The 'F' ratios of ANOVA performed to test whether stressors differ according to the work pattern reveals insignificant results for Individual Factors, Group Factors, Organisational Job & Role factors and significant results for the Physical Environment Factors and Extra-organisational factors. Hence, the null hypothesis is accepted for Individual Factors, Group Factors, and Organisational Job & Role factors and not accepted for Physical Environment Factors and Extra-organisational factors.



### Nature of Employment and Sources of Stress

In order to understand whether stressors differ according to the nature of employment, Analysis of Variance has been performed and the following null hypothesis has been tested.

**Null Hypothesis:** There is no significant difference between natures of employment with respect to sources of stress.

The summary of ANOVA 'F' ratios for causes of stress and nature of employment has been furnished in the following Table 13.

**Table 13. Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Nature of Employment**

Work Stress Factors	ANOVA (F Ratio)	Sig.
Individual Factors	0.119	0.888
Group Factors	0.744	0.475
Organisational Job Factors	0.189	0.827
Organisational Role Factors	4.811	0.008
Physical Environment Factors	12.331	0.000
Extra-organisational Factors	3.078	0.046

The 'F' ratios of ANOVA performed to test whether stressors differ according to the nature of employment reveals insignificant results for Individual Factors, Group Factors, Organisational Job Factors and significant results for the Organisational Role Factors and Physical Environment Factors.

It is evident from Table 13 that there is a marginally significant relationship between the stressors and extra-organisational factors. Hence, the null hypothesis is accepted for Individual Factors, Group Factors and Organisational Job Factors and not accepted for Organisational Role Factors, Physical Environment Factors and Extra-organisational Factors.

### Salary and Sources of Stress

Here, an attempt has been made to study the relationship between sources of stress of software professionals and their emoluments. In this context, Analysis of Variance is performed and the results have been presented in the following Table 14.

**Null Hypothesis:** There is no significant difference among respondents belonging to the different levels of salary with respect to stressors.



**Table 14. Summary of ANOVA 'F' Ratios for Causes of Stress with Respect to Salary**

Work Stress Factors	ANOVA (F Ratio)	Sig.
Individual Factors	1.520	0.181
Group Factors	1.004	0.414
Organisational Job Factors	1.440	0.207
Organisational Role Factors	1.146	0.334
Physical Environment Factors	11.216	0.000
Extra-organisational Factors	1.061	0.381

The 'F' ratios of ANOVA performed to test whether stressors differ according to the salary earned reveals insignificant results except for the Physical Environment Factors. Hence, the null hypothesis is accepted for all the factors (Individual, Group, Organisational-Job, Organisational-Role and Extra-organisational factors) except Physical Environment Factor.

### **FINDINGS & CONCLUSION**

It is observed from the results of factor analysis on the sources of works stress among the software professionals that the significant causes of job stress which have been identified in the order of importance are Organisational Role Factors, Organisational Job Factors, Physical Environment Factors, Extra-organisational Factors, Group Factors and Individual Factors. With respect to Organisational role factors, "Work Pressure" is considered to be the main reason for employees' high stress level because of the demand for high skill or expertise level from them. The respondents experience 'Role Overload' because of the unrealistic time deadlines with respect to their work. The lack of physical environment factors like proper ventilation facilities, lighting facilities, and stress free and proper workstation and equipments are considered to be great sources of work stress among the software professionals. The results show that Group factors, Organisational job factors and Physical Environment Factors have no significant relationship with gender. There has been significant relationship between age of the software professionals and stress caused by Organisational job factors and physical environment factors.

There is no significant relationship between academic qualification and stress factors except for the factor V (i.e. Physical Environment Factors). Hence, the null hypothesis has been rejected for the factor V (i.e. Physical Environment Factors) and accepted for all the other factors of stress. It is found from the analysis that the relationship between marital status of the respondents and stress factors is not significant except for the stress factor V (i.e.





Physical Environment Factors). It is found from the analysis that the relationship between the region and stress factors is not significant for the stress factors except for the Organisational role factors. It is also understood from the analysis that Organisational Job factors, Physical Environment Factors and Extra-organisational Factors that cause work stress do not differ according to the type of the software organisation.

It is found from the analysis that the relationship between job tenure of the respondents and stress factors is not significant except for the factors IV and V (i.e. Organisational Role Factors and Physical Environment Factors). It is found from the analysis that the stress caused by organisational role and job factors differs significantly among respondents with respect to their designation levels. From the analysis done with respect to sources of work stress it was found that physical environment factors, organisational role factors and organisational job factors were the major stressors.

Stress was often defined as a dynamic condition in which an individual was confronted with an opportunity, constraint, or demand related to what he or she desires and for which the outcome was perceived to be both uncertain and important.

Although stress is regarded as negative, so is not the case in reality, as stress also offers an opportunity of a potential empowerment. However, stress is harmful when it exceeds the normal coping power of the body. It might lead to a state of depression, ill functioning of other body parts, anxiety, boredom etc.

Stress is generated due to the constraints i.e. the forces that prevents individuals from doing what they desire and also when they fail to meet the expectations of themselves and others. If winning or losing becomes unimportant then there is no stress.

Research shows that certain individuals have the inherent tendencies to accentuate stress. Stress for such individuals is an addictive phenomenon. Employee's often suffering from at workplace due to individual differences with their peers, subordinates or superiors. An employee spends about 60 working hours each week on as average. The main causes of stress however are the rest of the non working hours. As humans treat their personal relationships quite dearly, so any family problem as a broken relationship, trouble in disciplining children is the causes of stress for an individual. Financial crunches also act as major causes of stress. It has found that people earning fifty thousand per month may be as



stressed as individuals earning fifteen thousand per month because they tend to be poor money managers.

The three primary ingredients of business environment that tend to generate stress among employees are economic uncertainty, political uncertainty and technological uncertainty. Today's economic conditions are more turbulent because of the recession which had heightened the fear of job insecurity more than ever. Political conditions become a cause of stress due to the unstable systems. Technological uncertainties induces stress because as technology lifecycle is as short as six months the skills developed by an employee to work with a particular technology obsoletes at a much faster pace.

Software organisation can work towards effectively distressing its employees by redesigning a few of its activities as selection and placement; goal setting as according to the employees potential; redesigning jobs by providing flexible and employee friendly options; increasing employee's participation in decision making concerning his project and tasks and increasing both formal and informal channels of organisational communication. Starting with organisation supported wellness programs that focus on the improvement of employee's total physical and mental condition.

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