THE FACTORS INFLUENCING JOB STRESS OF SOFTWARE PROFESSIONALS AT IBM INDIA PVT.LTD. INDIA

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ABSTRACT

The aim of this research paper wasto investigates the factors influencing job stress of software professionals at IBM India Pvt.Ltd., Gurgaon. It was indicated that how software professionals therewere influenced by the major determinants of job stress and it is also analysed that the determinants contributed more impact on jobstress. The well-designed pretested questionnaire was used for data collection. The total sample size for research study was taken to be 160. Out of these 160 employees, 100 were male and 60 were female. The convenience sampling was used for the study and the factor analysis statistical tool was used for data analysis. The factor analysis confirmed that the four major factors were work role, organisational climate, personal growth and communication access affecting software professionals at IBM India Pvt. Ltd., Gurgaon. The Principal Component Analysis (PCA) had been shown to examine the underlying factors of job stress scales. These principal components accounted for about64.042 % of the total variation. The finding revealed that the total 64.042% of job stress components were influenced to job stress of software professionals at IBM India Pvt. Ltd., Gurgaon.

Keywords: Job Stress, Job Stress Index, Factor Analysis, Principal Components Analysis, Reliability Statistics, Eigen Values, Communality

1. Introduction

Now-a-days, the employees' turnover has been an important issue in the software industries. High turnover ratio in the organizationscauses high cost of recruiting and training new employees, decrease of organizational performance, lack of organizational employee continuity and organizational stability [1], [2]. Therefore, turnover is an undesirable event in the organizations, because long-term productivity is affectednot only by hiring the best qualified personnel, but keepingthem in the organization for long periods of time [3].The reasons behind the turnover decision have been investigatedfor years. However, the literature review shows thatthe main factor that affects employees to quit their currentjobs is the intention itself [1], [2], [4], [5], [6]. Accordingto the Theory of Reasoned Action, an individual's behaviour is determined by his or her behavioural intention [7]. Themore an individual shows intention to perform a particular behaviour, the more he or she is expected to act it [7]. As such, we should emphasize on the employee's intention tojob stress is one of the common problems that employees confront with increasing frequency. Recently job stress is becoming a contagious in the work environment. Therefore a large number of researches have been focused on job stressand its effects on the various aspects of the organizational output. According to AbuAlRub [8] job related stress among working people is drastically increasing worldwide and work place has become an integral part of everyday life and is referred as 'worldwide epidemic' by the World Health Organization.

2. Review of Literature

The following literature review points out the factors affecting the job stress. Mackay et al.[9]suggested that the potential stressors for these hazards areorganizational culture and function, role in the organization, career development, decision latitude and control, inter personal relationship atwork, work-home interface and changes.
Tang and Chang [10] studied on the effectof role stressors like role ambiguity and role conflict among the employees and they concluded that these role stressors affect the employees' creativity. Rubab et al. [11] concluded that at the workplace women are often subjected to under pressure by male counterparts that produce higher level of stress among Verma [12] concluded that the Job stress and Burnout have become two of the buzzwords of the present century influencing job-satisfaction of the employees.

The work place isincreasingly a critical problem for employees, employers and the society. Researchers who study stress have demonstrated the direct and indirect costs of stress. Ahsan et al. [13] investigated the relationship between job stress and job satisfaction. The determinants of job stress examined under this study include, management role in the organization, relationship with different people in the organization, pressure of extensive work, homework interface, performance pressure and role ambiguity. The sample consisted of a public university academician from KlangValley area in Malaysia. The results showed that there is a significant relationship between four of the constructs tested. The result also showed that there is significant negativerelationship between job stress and job satisfaction.Rehman et al. [13] conducted a research which examined the impact of job stress on employee job satisfaction. The study was done on a sample of 150 employees which were from the private colleges of Pakistan. Job stress was measured on the basis of workload and physical environment. The result of this study was that the job stress is positively related to employee's job satisfaction.CaplanNakakisKonstantinos and Ouzouni Christina [14] conducted a study on factors influencing stress and job satisfaction of nurses working in psychiatric units. This review showed that a variety of factors influencing stress and job satisfaction of mental health nurses. The influence of the quality of collaboration amongst nurses and between nurses and doctors on nurses' job satisfaction was uncertain. A strong negative relationship was found between clinical leadership, inter-professional collaboration, and stress and employee job satisfaction.Although it was found that there exists a positive relationship between clinical leadership and nurses' job satisfaction, but the association between clinical leadership and quality of inter-professional collaboration is unclear. In addition, a positive but weak relationship was revealed between the clinical leadership and the quality of relationships amongst nurses.Issues in the organization, scarcity of nursing staff and patient care were found to be related to ward type mental health nurses' stress and emerged as mediating variables between stress and job satisfaction. Manzoor et al. [15] conducted a research which examined the relationship between job stress and job satisfaction among the faculty members of universities in Lahore, Pakistan.In order to assess the stress level and satisfaction, role of management, work pressure,role, ambiguity, and performance pressure were used as variables. Results concluded thatemployees were highly satisfied with their jobs (13.5%) or who were highly stressed on theirjobs were few (2.5%); most of the employees were however averagely satisfied on eachvariable used in questionnaire to assess the level of job stress and job satisfaction.

Chen et al [16] conducted a study on nurses working in middle-level hospital operatingrooms. Job stress, strategies for coping with stress, and job satisfaction were the focus of the study. Major findings of this study were that the stress level and frequency perception of nurses were significantly related to the type of hospital, the most intense stressor perceived by or nurses was safety of patients, administrative feedback was the stressor which was most frequently perceived by or nurses was although all the stressors were positively related to strategies to cope up with destructive stress, professional status, patient safety, and or environment were also positively related to constructive stress coping strategies, factors including work rewards, or environment, and administrative management of job satisfaction were inverselyrelated to destructive stress coping strategies and factors including work rewards, or environment, and administrative management of job satisfaction were inversely related to all job stressors. Casey [17] suggested that stress is a part of person's daily life; however excessive amounts of stress have been linked to diminished performance in number of area including home work life, and relationship as well as the physical and psychological health of individual.

2.1 Objectives of the study
The main objective of this study is to investigate the major factors of job stress of software professionals at IBM India Pvt. Ltd., Gurgaon.

2.2 Research questions
How the factors have impact on job stress of software professionals at IBM India Pvt.Ltd., Gurgaon.

2.3 Problem statement of the study
To what extent the job stress factors are influential to job stress of software professionals at IBM India Pvt. Ltd., Gurgaon.

3. Research Methodologies
The population of the study consists of software professionals at IBM India Pvt. Ltd, Gurgaon, India. Sample size was 160.The convenience method of sampling was used for data collection. There was the pre tested questionnaires used as instrument for data collection. The questionnaires were framed on the basis of Likert 5 point scale from strongly agree to disagree, where point-1 strongly disagree, 2disagree, 3 neither agrees nor disagree, 4 agree and 5 strongly agree. The correlation and regression method were used as statistical tools for data analysis. The collected data was reduced with

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the help of factor analysis. The extraction method used was Principal Component Analysis, followed by Varimax with Kaizer Normalization.

4. Results and Discussion
4.1 Reliability Statistics
The reliability of the questionnaires was evaluated through Cranach's Alpha which measures the internal consistency. Cranach's coefficient alpha is calculated for each dimension of variables to verify the internal consistency of all scales. The Reliability Statistics carried out that the coefficient of Cronbach Alpha for the research scale 0.937=93.7% which had bearing a good internal consequence of the construction of the investigated scale consistency for this study

4.2 Factor Analysis:
The factor analysis is a statistical tool which is used to describe variability among observed and correlated variables. It is an explorative analysis. The factor analysis reduces the information in a model by reducing the dimensions of the observation and is used for simplifying the data and reducing the number of variables in predicative regression model.

4.2.1 Factor Analysis KMO and Bartlett's Test:
It is a statistical approach to analyze interrelationship among a large numbers of variables.

Table.1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.906
Bartlett's Test of Sphericity	Approx. Chi-Square df. Sig.	1235.832 210 .000

4.2.1. a. Kaiser-Meyer-Olkin (KMO) and Bartlett's Test:
It measures strength of the relationship among variables. The KMO also measure the sampling adequacy which should greater than 0.5 for a satisfactory factor analysis to proceeds. If any pair of variables has a value less than this, it considers dropping one of them from the analysis.The KMO test measure the sampling adequacy which falls in the acceptable range with a value of **.906.**

4.2.1. B.Barlett's test of spericity: is significant, thus the hypothesis that the inter-correlation matrix involving these 21 variables is an identity matrix is rejected. Thus from the perspective of Bartlett's test, factor analysis is feasibl

4.2.2. Communalities:
It shows how much of the variance in the variables has been accounted for the extracted factor. Communalities show 39.3% of the variance in the variables has been accounted for the extracted factor. The Principal Component Analysis (PCA) has been conducted to examine the underlying factors of job stress scales. Four factors were derived by using the scree test criterion. These principal components accounted for about64.062 **%** of the total variation. A cut-off of 0.50 was used for item scale selection and it was adopted a normalizedVarimax rotation to bring about simple and interpretable structure.

Reliability Statistics		
Cranach's Alpha	Cranach's Alpha Based on Standardized Items	N of Items
.937	.936	21

4.2.3 Total Variance Explained:
There are all the factors extractable from the analysis along with their Eigen values, the percent of variance attributable to each other ,the first factor accounts for 46.037% of the variance, the second factor 6.511%, third factor 6.231%, and fourth factor is 5.284% .All the remaining factors are not significant.
4.2.4 Scree Plot:
The Scree plot is a graphic aid of the Eigen-values against all the factors. The graph is useful for determining how many factors to retain. It is intended to help in deciding where the "trivial" dimension is begun.The curve begins to flatten between 1 to 4 S, There are the four factors have been retained
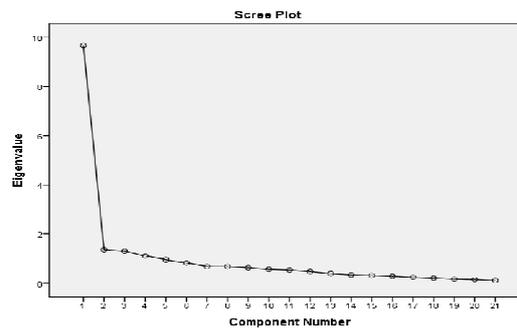
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Figure 1: Scree Test for component Analysis

4.4.5. Component (Factor) Matrix:

The loadings of the twenty one variables on the four factors extracted. The higher the absolute value of the loading, the more the factor contributes to the variable. There are first four are the results for the four factors that are extracted. The fifth column provides summary statistics detailing that how well each variable is explained by the four components.

The first row of numbers at the bottom of each column is the Eigen values and indicates the relative importance of each factor in accounting for the variance associated with set of variable being analyzed. The sums of squares for the four factors are 9.668, 1.367, 1.309, and 1.110 respectively. The factor 1 is accounting for the most variance and factor 4 is less.

4.4.6 Rotated Component (Factor) Matrix:

The VARIMAX rotated component analysis factor matrix. The total amount of variance extracted is the same in the rotated solution as it was in the unrotated one, 64.062 %. Two differences are apparent in the following table. First, the variance has been redistributed so that the factors are different. Specially, in the VARIMAX rotated factor solution, the first factor accounts for 27.375% of the variance, compared to the 46.037% in the unrotated solution. As the same second factor accounts for 16.936% of the variance versus 6.511% of variance in the unroated solution, Third factor accounts for13.349% of variance versus 6.231% of variance in unroated solution, and Fourth factor accounts for 6.403% of variance versus 5.284% of variance in the unroated solution.

In the rotated factor solution, variables 2,6,13,15,17,18,19 and21 load significantly on factor 1; variables1,3, 4,7 and 14 load significantly on factor 2; variables 9 and 20 load significantly factor on 3; variables 16, load significantly on factor 4. The factor 1 has eight significant loading, factor 2 has 5 significant loading, factor 3 has 2 significant loading and factor 4 has one significant loading. So, Principal Component Analysis (PCA) has been conducted to examine the underlying factors of job stress scales. Four factors were derived, by using the scree test criterion. These principal components accounted for about64.062 **%** of the total variation. A cut-off of 0.50 was used for item scale selection and it was adopted a normalized varimax rotation to bring about simple and interpretable structure. Finally, from the analysis, obtained four summarized factors, the data through Component Factor Analysis and using VARIMAX method as four factors including their sub process.

Table 2: Principle Components and Associated Variables

Factor	No. of variables	Factor Loading Variables	Extracted Factor
F1	8	a. Supervision(.526) b. Administration (.606) c. Promotion Policy (.717) d. Role Conflict(.864) e. Income policy(.697) f. Role ambiguity(.647) g. Work load(.783) h. Work stagnation(.852)	Work Role
F2	5	a. Working Environment (.601) b. Social injustice (.761) c. Work demand (.601) d. Target(.562) e. Work group(.580)	Organisational Climate

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| F3 | 2 | a. Interpersonal relationship(.844)
b. Career development (.602) | Personal Growth |
| F4 | 2 | a. Communication System (.800)
b. communication with superior(.600) | Information Access |

Table 3: Summarized Factor Analysis of Job Stress at IBM India Pvt. Ltd

Extracted Factor	Eigen value	% of variance	Commutative variance
Work Role(F1)	9.668	46.037	46.037
Organisational Climate(F2)	1.367	6.511	52.547
Personal Growth(F3)	1.309	6.231	58.778
Information Access(F4)	1.110	5.284	64.062

The results of factor analysis are shown in table 4.4.8.Those factors which had an Eigen value of greater than 1.0 were retained. Also the variables, which clearly loaded on one factor, with loadings of greater than 0.5 were retained**.**

5.Conclusion:
The stress gives both good and bad results. Sometimes stress improves the efficiency of employees as well as organisation but sometimes it causes several problems for both the organisations as well as the employees. Most of the organisations are taking care of their employees and providing stress management strategies to reduce the stress level. Therefore, it is necessary to know the stress level of employees and it helps the organisation to identify the effective strategies to be implemented and in reducing the employees' stress. The findings revealed that there were four factors i.e. work role (46.03%),organisational climate (6.511%),personal growth(6.231%), and information access(5.284%) and total 64.042% of job stress components were influenced to job stress of software professionals at IBM India Pvt. Ltd., Gurgaon.

Suggestions:
1. Software and software related jobs are relatively stressful jobs and the organisations should consider the deadlines given to their employees.
2. Emotional support from the management of the organisation can reduce the job stress of software professionals.
3. The organisation should improve the stress management strategies to reduce job stress. It helps to improve the employees engagement and reduce the attrition rate of employees

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