# Studies on Job Stress in Employees of Software Companies: A Review

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Abstract—In this review paper, studies have been undertaken to explore the scope of further research in the direction of job stress. It is observed that there is a definite need for organizations to devise and invest in strategies that can keep the level of role stress within manageable limit among employees. It is even true for teaching profession. It is established that teaching is a process dealing with human minds. It is vital therefore that the teachers must posses sound mental health. Evidently, the facets of teachers' performance such as creativity, classroom management, and implementation of teaching techniques may suffer when job dissatisfaction and the level of occupational stress increases.

**Keywords**: job stress, review, job satisfaction, mental condition, job security.

## 1. INTRODUCTION

The word "stress" is one of the most frequently used words today. We live in the World developing fast, requiring constant adaptation. Technology is changing, so are social habits, values, social structures and people. Everybody has to cope with those changes, not only individuals, but the organisations and government as well. Stress in the workplace is a growing concern in the current state of the economy, where employees increasingly face conditions of overwork, iob insecurity, low levels of iob satisfaction, and lack of autonomy. Workplace stress has been shown to have a detrimental effect on the health and wellbeing of employees, as well as a negative impact on workplace productivity and profits. There are measures that individuals and organizations can take to alleviate the negative impact of stress, or to stop it from arising in the first place. However, employees first need to learn to recognize the signs that indicate they are feeling stressed out, and employers need to be aware of the effects that stress has been there on their employees' health as well as on company profits. This report is a call to employers to take action on stress levels in the workplace. Some people are aware of positive values of those changes, but very few think of the negative consequences that may ensue. According to some estimates, humankind loses 100 million workdays every year due to the aftermath of stress. What matters more, 50 to

75 per cent of today's diseases are related to stress. The European Agency for Health and Safety at Work states that stress within organizations is the second most frequent trouble and affects as many as 28 per cent of employees. The managing of work relates that stress is a "real" issue and any organization that seeks to establish and maintain the best state of physical, mental and social well-being of its employees needs to have policies and procedures that comprehensively address health and safety. These policies will include strategies to manage stress, based on the needs of the organizations and its members, and will have to be regularly reviewed and evaluated.

### 2. LITERATURE REVIEW

Muhammad Jamal [1] studied and founded four types of relation between job stress and performance- curvilinear/U shaped, negative linear, positive linear, and no relationship between the two. Data was obtained from middle managers (N = 227) and blue collar workers (N = 283) employed in a large Canadian organization. Author used tool for analysis was multiple regression and hierarchical multiple regression. Author found that 50% of the job stress could be eliminated if there exists effective coordination between employees and managerial. Ioannis Nikolaou [2] studied relationship between emotional intelligence and sources of occupational stress and outcomes on a sample of professionals in mental health institutions. Author selected 212 employees and collected data by questionnaire as well as the Organizational Stress Screening Tool (ASSET). Author found that there is negative correlation between emotional intelligence and job stress. Author found positive correlation between emotional and organizational commitment. Author intelligence concluded that employment insurance (EI) provided employees loyalty to organization and enhance the effectiveness of employees. Richard A. Feinberg and Leigh Hokama et al. [3] worked on caller satisfaction in the banking/financial services call center. Authors observed that banks and financial institutions depend upon telephone call centers to meet the needs of a changing and ever more

demanding consumer for 24×7 access. Call centers serve as a source of service recovery, added value, market intelligence, and strategic advantage. Authors collected data from almost 1,000 call centers collecting annual base information on almost 500 variables. The critical variables identified for this study are measured as part of the benchmark. This study uses data available from the Purdue University Call Center Benchmark database to determine the critical relationships between call center metrics and caller satisfaction. None of the key factors was found to be determinant of customer satisfaction in call centers in other industry groups was found to be significant in bank call centers. This raises questions about how call centers are managed and serves to highlight the very low customer satisfaction that customers have with their banking call center experience. Mohsin Aziz [4] worked on role stress among women in the Indian information technology sector. Author selected the sample from National Capital Region (NCR) the adjoining districts of Gaziabad, Faridabad, Gurgaon and Noida. Ease of conducting the survey and ensuring a high response rate guided the decision to restrict the geographical area of the study. The questionnaire was initially mailed to 400 full time women information technology professionals. Author found that resource inadequacy has emerged as the most potent role stressor, followed by role overload and personal inadequacy. The research finds differences in the level of stress between married and unmarried employees on several role stressors. However, level of education does not emerge as a significant differentiator of stressors. The study reveals that the women software professionals in India are a stressed group. With changing socioeconomic dynamics of India, more women are joining the workforce and the problem of stress among working women is going to further increase with time. Also, the competition in the market is increasing, and it is putting extra pressure on the employees. While some of the stressors may be common to the other employees, there are some pressures and demands that are uniquely associated with women employees, particularly married women employees.

Sheena Johnson et al. [5] studied on the 26 different occupations. Author found that total stress (physical + mental stress) and job satisfaction depend on occupation. Author found the high emotional employees had been associated with high job stress. Robert Conti et al. [6] studied on 1,391 worked in the UK industry sectors. Author collected data from management interview and visited the plants. Author found that total job stress is combination of mental and physical condition. Author observed that stress level depends on management decisions in designing and operating LP systems. Stress level can be controlled by effective designs and better management decision. Amanda Johnsona and Helen Wilsonb et al. [7] worked on hypotheses with Australian and New Zealand nurses, and compared Australian and New Zealand nurses' experience of workplace stress, coping and health status. They collected three hundred and twenty eight New South Wales (NSW) and 190 New Zealand (NZ) Volunteer

acute care hospital nurses (response rate 41%) from randomly sampled nurses. They used postal survey consisting of a demographic questionnaire, the Nursing Stress Scale, the Ways of Coping Questionnaire and the SF36 Health Survey Version 2 for information collection. They found that the results are consistent with hypotheses, more frequent workplace stress predicted lower physical and mental health. Problem focused that coping was associated with better mental health. Emotion focused coping was associated with reduced mental health. Contrary to hypotheses, coping styles did not predict physical health. NSW and NZ scored effectively the same on sources of workplace stress, stress coping Zaini Abdullahg methods, and physical and mental health when controlling for relevant variables. Dee K. Knight and Hae-Jung Kim et al. [8] worked on causal relationships between role stresses and customer orientation. Authors selected the sample (259) from national department store located in the USA. Participants in the clothing, accessories, shoe, and home furnishings departments completed self administered questionnaires. In an increasingly competitive market environment, retailers often attempt to gain a differential advantage by offering excellent service quality, which depends upon the attitudes and behavior of retail salespeople. There are several compelling reasons for examining the impact of role stress on customer-oriented behavior. First, the consequences of role stress have implications for salespeople engaging in customer-oriented behavior that can impact job performance and ultimately a firm's profitability. Second, given the potential impact of role stress on customer-oriented behavior, this type of examination is needed to augment understanding of managing retail salespeople. Also, due to the inconsistent research findings in relation to role conflict, it is important to continue investigating its relationship to job performance. Finally, retail salespeople transmit company attitudes to customers and convey feedback to management and are thus considered as important conduits between customers and the company. This study extends the literature by examining the consequences of role stress on customer orientation and job performance of retail salespeople. As hypothesized, role stress variables affected customer orientation and also had direct and indirect effects on job performance mediated by customer orientation. Some limitations of this study must be addressed. First, a purposive sample was used to ensure participation of a retail company that included service quality among its business strategies. The participants in this study were employed by eight units of one national department store chain, which limits the generalize ability of the results. If additional retail formats (e.g. national specialty chains, mass merchandisers) had participated in the study, the results might have varied. In our structural equation model, customer orientation accounted for only 20.2 percent of the variance and 8.5 percent of the selling orientation variance. Another stream of research might investigate personal characteristics, such as innovativeness, creativity, attitude toward complaining, locus of control, and self-monitoring required in boundary-spanning positions (Michaels et al., 1987). Mette M. Aanes and Maurice B. Mittelmark [9] worked on interpersonal Stress and poor health. Authors found that the lack of social connectedness, as measured by the subjective feeling of loneliness, mediates the well known relationship between interpersonal stress and psychological distress. Authors selected 3,268 women and 3,220 men in Western Norway. Authors observed that interpersonal stress was significantly related to psychological distress as well as to somatic symptoms both directly and indirectly via paths mediated by loneliness. The size of the indirect effects varied, suggesting that the importance of loneliness as a possible mediator differs for depressive symptoms, anxiety symptoms, and somatic symptoms. In the case of depressive symptoms, more than 75% of the total effect was mediated through loneliness, while in the case of somatic symptoms just over 40% of the total effect was mediated through loneliness. This study supports the hypotheses that social connectedness mediates a relationship between interpersonal stress and psychological distress. The study also provides the first link between interpersonal stress, as measured by the Bergen Social Relationships Scale, and somatic symptoms, extending earlier research on the relationship between interpersonal stress and psychological distress.

Kouvonen Anne et al. [10] worked on job strain and adverse health behaviors. Objective of Authors were to explore the association between job strain and the co-occurrence of adverse health behaviors like smoking, heavy drinking, obesity, and physical inactivity. The authors studied crosssectional data of 34,058 female and 8154 male public sector employees. Job strain conditions are likely to be associated with the co-occurrence of adverse health behaviors that add to preventable chronic diseases. Adverse job conditions may increase the likelihood of co-occurring health risk behaviors. Reducing work stress by increasing job control and decreasing psychological demands might help efforts to promote healthy lifestyles. Meiyung Leung et al. [11] studied on Construction Project Managers. Authors selected 108 construction project managers (CPMs) and collected data. Author used tools for analysis to the data was Correlation analysis and structural equation modeling. Author observed that construction project managers had stress due to time pressure and uncertainties involved in construction projects. Authors observed the results- (a) objective stress reduces the task performance of CPMs while burnout can have a positive effect on it; (b) Interpersonal performance is maximized with a moderate level of objective stress (i.e., an inverted U-shaped relationship between these two variables) and increases in line with the improvement of the task performance of individuals, and (c) organizational performance has U-shaped relationships with both burnout and physiological stresses and is worsened by objective stress. Authors concluded that regular review of project location and group counseling enhances the effectiveness of CPMs. Jui-Chen Chen and Colin Silverthorne [12] worked on relationships between locus of control and the

work-related behavioral measures of job stress, job satisfaction and job performance in Taiwan. A total of 620 survey instruments were mailed to 310 Certified Public Accountant (CPA) firms in Taiwan with two surveys were sent to each firm. The sample was generated from a list of CPA firms. This is a database that includes most of the CPA firms operating in Taiwan. Because not all CPA firms disclose their address, phone number or other available information online, the authors could not select a sample on a completely random basis. To ensure confidentiality, a cover letter explaining the purpose of the study and a preaddressed, stamped envelope were mailed with each questionnaire. All responses were returned anonymously. In total, 209 completed questionnaires were returned for a return rate of 33.7 per cent. The aim of this study was to examine the relationship between locus of control and the work-related behavioral measures of job stress, satisfaction and performance for accountants in Taiwan. Results indicated that an LOC score was a predictor of work related behavior in several areas. Finding these relationships between LOC and the other variables studied is consistent with research results from western cultures. Respondents who had an internal LOC perceived lower levels of job stress, reported higher levels of job satisfaction and job performance. Based on individual responses, the results indicate that high performance CPA firms probably have more internal LOC individuals than low performance firms. The mediator function tests also showed that LOC is a mediator, through which job stress influences job performance. In addition, the mediating effects of LOC indicate that job satisfaction affects job performance and job stress. In other words, for an external LOC individual, job stress would have a negative effect on his or her performance while for an internal LOC individual job stress can enhance his or her performance. Compared with external LOC individuals, an internal LOC individual was more easily satisfied with his or her job, thus increasing job performance. Also an internal LOC individual finds it easier to cope with job stress. Nilufar Ahsan and Zaini Abdullah et al. [13] worked on relationship between job stress and job satisfaction. The sample consists of a public university academician from Klang Valley area in Malaysia. They used the method for data collection as survey instrument in the form of close-ended questionnaire. The field survey was conducted over a period of one month whereby personal interviews were taken to obtain the required information from the respondents. The reasons of using the personal interview are threefold. Firstly, it allows the interviewer to screen the eligibility of the respondents. Secondly, it also allows a closer supervision and better interaction between the interviewer and respondents in answering the questionnaire. Lastly, the interviewer was able to assist the respondents when they found difficulty in understanding any of the questions in the questionnaire. They concluded that it is very important that the university understands the needs of its employees and provide what is best for the employees. Constant appraisal programs and appreciation should be given to reinstate and motivate the employees. Motivation is a key factor as well in affecting job

stress among employees. Employees who are highly motivated will feel happier and are more willing to work for the organizations. Orly Michael and Deborah Court [14] worked on the impact of job stress on the organizational commitment of a random, representative sample of coordinators in the Israeli educational mentoring organization PM. The study used three questionnaires to investigate the influence of the stress variable and its cumulative effects to predict the coordinators' organizational commitment, among 131 PMP coordinators from six different PMP branches around Israel. The findings revealed that stress hinders the coordinators' sense of emotional commitment. As the stress level rises, the coordinators sense of belonging decreases. Another finding was that the stress in the coordinators job does not influence their overall continuance commitment. Strong continuance commitment was found in two categories: role expectations that were not compatible with the role requirements, and the second, unwillingness to leave the job in the middle of the year. In addition, the research indicated that job stress is not related to the PMP coordinators' normative commitment. They felt loyalty to the organization based on the faith that this work is the right thing to do. Jose Manuel Otero and Cristina Castro Bolano [15] worked on exploring stress, burnout, and Job dissatisfaction in secondary school teachers. They collected the data by 1,386 teachers from compulsory secondary education. They used the method for data analyzed was statistical analysis conducted (correlation and regression). Data were processed using the SPSS (version 15.0) package. At a first stage, a correlation analysis was conducted to examine the link between manifestations of occupational malaise (occupational stress, burnout and job dissatisfaction) and a set of selected variables. Next, given the interest in demarcating which of all the variables included in this research best predicts the three facets of teacher malaise, different stepwise multiple regression analyses were conducted (using a level of reliability of .99) taking as criterion variables stress, burnout and dissatisfaction. The independent variables, taken from a variety of domains, were: labor hours per week, seniority in the profession, Type-A behavioral pattern, hardiness, optimism, conscientiousness, social support (colleagues and family), daily hassles and life events. Meltze et al. [16] studied on job insecurity and rising unemployment. Author selected 3581 field worker (1746 men and 1835 women) from Great Britain for survey. Author collected data by interview. Author observed that one-fifth of all working men and women aged 16-64 years felt that their job security was poor. Author concluded that job insecurity affects job stress and mental health. Economic recession increases the job insecurity and unemployment there for less skilled worker gets more job stress. George Halkos et al. [17] worked on effects of stress and job satisfaction on the functioning of a company. Author selected random sample of 425 employees in the private and public sector. Author analyzed the data by logistic regression and correlation of a large number of qualitative and quantitative variables and their influence on productivity. Author concluded that increased stress reduced productivity and increased satisfaction increased productivity and when work begins to overlap with workers' personal life this implies a negative effect on productivity. In this paper the authors used factor analysis in order to identify the responsible factors for the correlation among a large number of variables and their influence on productivity. Their results showed us that productivity is seriously affected by the two qualitative factors, stress and satisfaction. As expected, in the former, increased stress leads to reduced productivity and in the latter, increased satisfaction leads to increased productivity. Usman Bashir and Muhammad Ismail Ramay [18] worked on bankers suffering from stress due to overload of works, conflict, lack of feedback, working hours etc. Author selected 144 graduate, senior employees including managers and customer's services officers of well reputed growing bank in Pakistan. Author analyzed the data by statistical test correlation and regression and reliabilities. Author analysed the data by personal interview. Author concluded that there is negative correlation between job stress and job performances. The present study was conducted among employees of a well reputed growing bank in Pakistan who has three categories under which employees fall those are FTE (Fixed Tenure Employees), bank contract and third party contract employees. The data was collected by means of a structured questionnaire with the help of supervisors and managers, copies of the questionnaire were given to respondents by hand. As the study is pointed towards employee stress and job performance, target sample source is well reputed growing bank in Pakistan, due to time and budget limitations convenient sampling technique is used to explore the relationship between stress and job performance of employees, the sample size is 144. The majority of respondents were male (87%) and married (79%). The average respondent was 39 years of age, having graduate and postgraduate qualifications. The purpose of this study was to find out the relations between the job stress and job performance of employees of banking sector in Pakistan. As per hypothesis job stress had a negative relation with job performance that when stress occurs it effects the performance of employees negatively, (Ivancevich and Donnelly, 1975) that lower the stress it increases the performance so both these are inversely proportional to each other as to the results the correlation shows that both job stress and job performance is negatively correlated. Management support helps in reducing or increases stress in employees. Usman Bashir and Muhammad Ismail Ramay [19] worked on impact of stress on employees Job performance. Author observed that bankers are under a great deal of stress and due to many antecedents of stress such as overload, role ambiguity, role conflict, responsibility for people, participation, lack of feedback and keeping up with rapid technological change. Author selected 144 bank employees of banking sector in Pakistan for data collection purpose. The data obtained through questioners was analyzed by statistical test correlation and regression and reliabilities were also confirmed. The results are significant with negative correlation between job stress and job performances and it is observed that job stress significantly reduces the performance of an individual. The results suggest that organization should facilitate supportive culture within the working atmosphere of the organization.

Dr. Satvinderpal Kaur [20] worked on the job satisfaction and occupational stress of teachers. He selected a sample of 500 teachers randomly selected from secondary schools of Bhathinda district of Punjab. He used the method for data collection as personal interview for study. He observed that quality of teacher and dedication depends on job satisfaction and job stress. Job satisfaction expresses the extent of match between employees' expectations of the job and rewards that the job provides. It is an established fact that a satisfied teacher puts best efforts to make teaching more effective. Job satisfaction positively influences the teachers' performance, students' achievement, organizational commitment and work motivation. Author concluded that the job satisfaction and occupational stress of male and female teachers increase the job satisfaction despite the fact that both the groups of the teachers are equally placed in terms of salary, placement, job security etc is a surprising finding. The reason lies that double duties at home and in schools for female increases mental stress. Urban teachers are found to be more satisfied and less stressed than the rural teachers. Lack of basic facilities, shortage of staff, poor infrastructure and working environment of rural schools cause job dissatisfaction and increase the mental stress of teachers. Negative relationship between job satisfaction and occupational stress reflects that when teachers are not satisfied with their jobs they will definitely feel the stress of the occupation; in order to reduce the level of occupational stress the job satisfaction is increasing and effectiveness is also increasing.

# 3. SCOPE OF FURTHER RESEARCH

Relying on findings it is observed that generalizations to other populations must be done carefully. Additional research should focus on the ways to increase productivity in public sectors where hearing of an action is difficult to use and hard to move. The effect of stress and satisfaction on productivity in specific sectors or geographical areas or professions should also be explored. Finally, more qualitative factors affecting productivity may be explored like emotional intelligence. This study on job stress had several limitations. First the research concentrated on accountants working for CPA firms listed in the major database of accounting firms in Taiwan. The use of a specialized sample like this may limit the effective application of these findings to other vocations and countries without further research. A response rate of about one third is good for this type of research, nonetheless it maybe that with only one third responding there is a sample bias created by those willing to respond. However, it is hoped that the research results will help CPA firms in particular to better understand factors that affect accountants' work-related psychological wellbeing. Future research could include personality variables other than LOC and for different professions. In addition, the replication of this study in other countries would help establish the generalize ability of these findings for accountants and organizations. Finally, there were some limitations to the study, which should be kept in consideration. Firstly, the sample size was limited and numbers of educational institutes were few. The study should also be carried out in other sectors of job market including the banking sector; medical sector, telecom sector etc. Future study should involve more variables for more conclusive results. The importance of the research lies in the highlighting of stress as an essential factor influencing work and performance in organizations, together with the mitigating influence of organizational commitment. These results could help organizations to better understand the influence of organizational commitment and to manage its implications more effectively. It is suggested that further research should investigate whether those working in educational settings have greater normative commitment than workers in other sectors. For future research study suggests that this research is expanded to the all divisions of other countries also to get the generalized conclusions. Furthermore, researchers will prolong this study to the other sectors like, education, tourism, business etc., to check the causes and effects of job stress on employees' productivity. Some of the variables of job stress are discussed in this study, but the study suggests to other researchers to include more job related stress factors in like work overload, role conflict, gender discrimination, demand pressure and many more to make this research more comprehensive. United States National Institute of Occupational Safety and Health has defined workplace stress 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. Job stress can lead to poor health and even injury." Workers who are stressed are also more likely to be unhealthy, poorly motivated, less productive and less safe at work. Their organizations are less likely to be successful in a competitive market. Stress can be brought about by pressures at home and at work. Workers can not be protected from stress arising outside of work, but they can be protected from stress that arises through work. Stress at work can be a real problem to the organization as well as for its workers. Good management and good work organization are the best forms of stress prevention. This study is helpful in assessing the extent of stress experienced by the employees.

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