JOB STRESS EVALUATION DURING PROJECT LIFE CYCLE (PLC) ON WORKING EMPLOYEES

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ABSTRACT: Stress is caused due to pressure or limitations in work which could lead to professional exhaustion. Job stress has affected the health of human being who worked, especially in construction oriented organizations. This paper evaluated the impact of job stress during planning and execution phases of Project Life Cycle (PLC) on job performance and employee turnover. Path model was used to evaluate the impact of job stress on job performance and employee retention. Regression test was used to fulfil the hypothesis. This research work concluded that there was a moderate stress at planning level and high stress at execution phase of PLC. Thus, stress at execution stage posed significant effect on employee turnover and also on work performance during execution phase of the project. Outcome of present study is going to be very helpful at all levels of project management with regards to detection of stress and also carry suitable actions to overcome the matter with peculiar circumstances.

Key words: Job Stress Evaluation, Employee Retention, Job Performance and Project Life Cycle.

INTRODUCTION

The construction industry is considered as the most stressful due to its nature of work. Workforce usually faces a lot of pressure and generally can handle it well, but sometimes workforce may find this pressure difficult to handle which may be called such pressure as a 'stress'. Basically, human beings incline to resist the outer forces acting upon them (Hobfoll, 1989). If stress is experienced on daily basis then human body becomes distressed and directed towards disturbing experiences (Cohen , 2001). Working hours in construction environments are longer and hard for high level managers and labor (Van Wanrooy and Wilson, 2006). According to (Haynes and Love, 2004) extended work hours, work overload and less spending time with family are three noteworthy stressors in construction industry of Australia. There is a direct impact of workplace factors on stress and job satisfaction, further stress directly influencing job satisfaction predicting job performance too (Kirkcaldy et al., 2002, Leong et al., 1996 and Lyne et al., 2000). Job stressors lead to job dissatifaction and a greater tendency to leave organization (Cummins, 1990). Job stress may result not in favor of workforce and the organization too as stress lowers down the motivation and performance of employees working in respective severe enivronments (Montgomery et al., 1996). Work stress has severe impact on job performance of employees working in construction industry (Yozgat et al., 2013). Stress also occurs when an individual perceives that the job demands are not possible to be met or accomplished. That is the moment when strain originates and demotivates employees (Lazarus and Folkman, 1984). According to (Jamal, 2004) job facets could be the elements which can cause a severe result next to job stress called 'burnout'. Job performance has a direct relation to job characteristics and the environments (Milkovich et al., 1991). Job stress is donating to employee nonappearance, turnover, and very low job performance, which is considered as a key management issue (Miller et al., 1990). The essence of job performance is governed by job demands, goals, mission of the organization and rules of the organization to which activities are valued (Befort and Hattrup, 2003). Employees having good understanding and team work spirit can control their sentiments in support of upholding an optimistic mental state which results in a positive job performance (Carmeli, 2003). Work needed to be done in limited resources is a great task to be done and job performance is affected by such work stress of an employee or labor (Jamal, 1984). Employee retention is mainly affected by the stress mostly by the work overload, extensive working hours, or any bad experience that an employee face during carrying out a project. Turnover in construction project mainly affected during execution phase, reason behind this phenomena is that, an employee is incorporated with various tasks prior to complete previous tasks which leads the employee to get highly disturbed and hence ceases and leave the job (Parker and Skitmore, 2005). According to Foreman, (2009) there is a negative relationship between job satisfaction and employee turnover whereas occupation is associated with job satisfaction, and employees turnover. The objective of this research work was

a) To determine the stress change from planning phase to execution phase of PLC.
b) To determine relationship of planning stress with job performance and employees turnover.
c) To determine the relationship of execution stress with job performance and employee turnover.

MATERIALS AND METHODS

All data was collected by approaching construction oriented organizations. All information was gained with the full permission of respondents whereas total Respondents were 180 experienced Project Managers, Line Managers and Project Supervisors. Data was collected through a structured instrument following a convenience sampling technique. There were 125 Construction projects in Lahore, Pakistan which were taken as a sample for this study. The questionnaire used was decoded according to the requirements of this study and same items were evaluated in both phases of every variable. Job stress was calculated using Time, Cost and Quality Parameters. Following parameters were also known as iron triangles in project management. Iron triangle were the factual assessment measures of performance which were perceptible too (Jha and Iyer, 2007).

Scale developed by (Parker and DeCottis, 1983) was used to assess job stress. Instrument was reduced to 10 items as per the compatibility to this study. The 5-point likert scale was used i.e. 1= Strongly Dis-Agree to 5= Strongly Agree to get more clear results. Moreover, for planning phase Cronbach Alpha was α=0.858 whereas for execution phase Cronbach Alpha was α=0.773.

Job performance was assessed by using instrument that was altered by (Singh et al., 1996). Job performance was measured through 6 items as per this research. The 5 point semantic differential scale was used 1= Poor to 5= Excellent and having Cronbach Alpha for planning and execution phase α= 0.770 and α= 0.877 respectively. Employees turnover was measured by using instrument of (Mak and Sockel, 2001) and it contained 4 items. The 5 point likert, 1= Strongly Dis-Agree to 5= Strongly Agree, scale was incorporated to get clear results whereas Cronbach Alpha for planning and execution phase was α= 0.871 and 0.867 respectively. Overall reliability of instrument was α=0.892.

People on construction project usually face work stress therefore, this research will help the construction project oriented organizations to keep balance and control stress among people associated with the project. Stress generally was more on execution phase than on planning phase of the project. Thus we hypothesized as under:-

H_1: There was a significant change in job stress from planning phase to execution phase of PLC.

H_2: Job Stress at execution phase had significant impact on Job Performance during planning and execution Phases.

H_3: Job Stress during execution phase had significant impact on Employee Turnover during planning and execution phases.

H_4: Job Stress during planning had significant impact on Job Performance during planning and execution phases.

H_5: Job Stress during planning had significant impact on Employee Turnover during planning and execution Phases

RESULTS

To evaluate the impact of job stress during planning and execution phase of PLC on job performance and employee retention, Path model was used, further regression statistical analysis was performed to fulfill hypothesis. Figure-1 showed the theoretical framework of job stress impact during planning and execution phase of PLC in construction project on job performance and employee turnover. JobPS = Job Stress at Planning Phase. JobES = Job Stress at Execution Phase, JobPrfPlanStrress = Job Performance Planning Stress, JobPrfExeStress = Job Performance Execution Stress, EmplyTOPlanStress = Employee Turnover Planning stress and EmplyTOExeStress = Employee Turnover Execution stress.

The measurement model fit indices ($\chi 2$ =7.572 with df= 4, $\chi 2$/df=1.893, GFI=0.986, TLI=0.896, CFI=0.972, SRMR= 0.009, and RMSEA=0.07) met the minimum acceptance level which suggested the measurement model fits adequately with the data. Following Figure-1 showed the conceptual model containing all the loadings:-

Further, to establish the significance, the standardized regression coefficients have been reported following the guidelines of (Arminger et al., 1995 and Bollen and Long, 1993).

Regression estimates for the study work are presented in following table 1:-

Analysis of table 1 estimates was as under:-

(1) There was a significant change of Job stress from planning phase to execution phase of PLC. (2) There was a significant impact of Job stress at execution phase on employee turnover during execution phase. (3) There was a significant impact of job stress at planning phase on job performance during execution phase. (4) There was a non-significant impact of Job stress at planning phase on job performance during planning phase. (5) There was also a non-significant impact of job stress at planning phase on employee turnover at planning phase. (6) There was non-significant impact of job stress at execution phase on job performance at planning phase. (7) There was a significant impact of job stress at execution phase

on job performance during execution phase. (8) There was a significant impact of job stress at execution phase on employee turnover during planning phase. (9) There was a significant impact of Job stress at planning phase on employee turnover during execution phase.

Table 2 and table 3 showed the difference in mean and paired sample t-test depicting that there was a significant shift of stress from planning phase to execution phase of PLC.

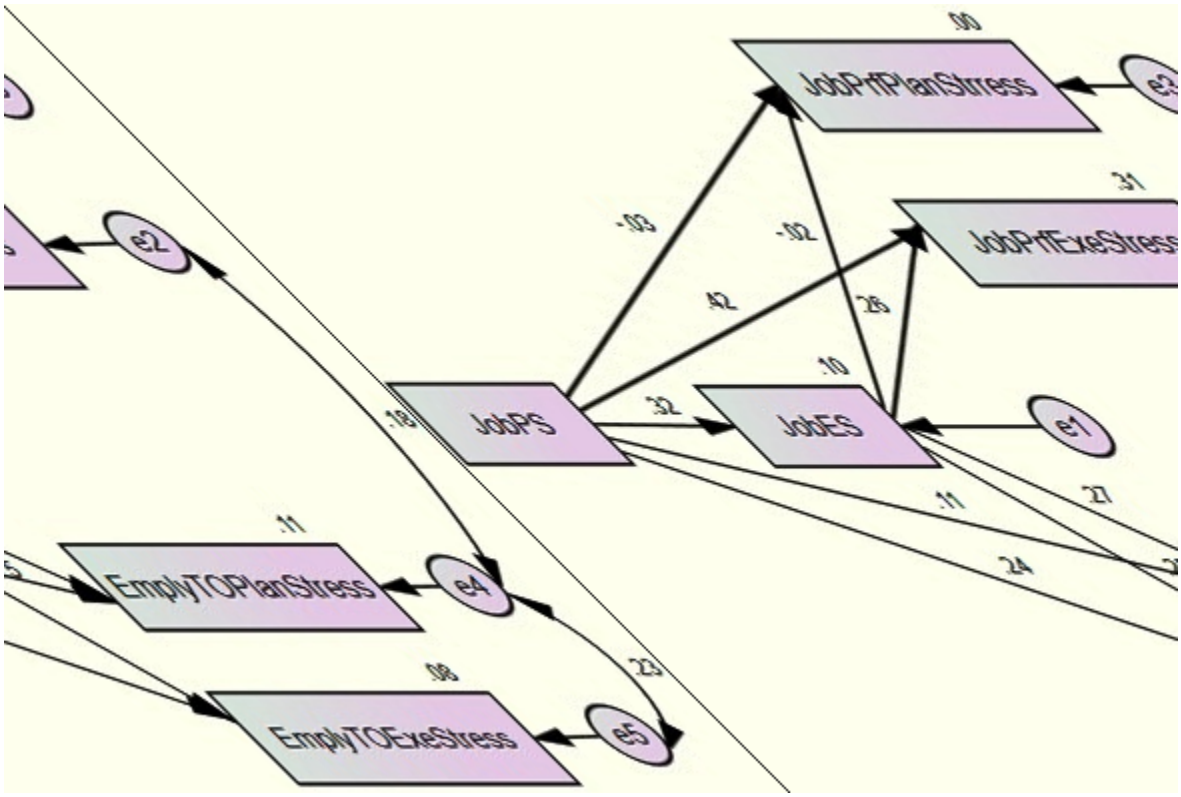

Figure 1: Conceptual Framework

Table 1. Showing Regression weights for Job Stress theoretical framework

Standardized Regression Weights				
			Estimate	P
1JobES	<---	JobPS	0.317	***
2EmplyTOExeStress	<---	JobES	-0.25	***
3JobPrfExeStress	<---	JobPS	0.418	***
4JobPrfPlanStrress	<---	JobPS	-0.027	0.732
5EmplyTOPlanStress	<---	JobPS	0.112	0.131
6JobPrfPlanStrress	<---	JobES	-0.023	0.774
7JobPrfExeStress	<---	JobES	0.262	***
8EmplyTOPlanStress	<---	JobES	0.271	***
9EmplyTOExeStress	<---	JobPS	0.239	0.002

Table 2. Showing Difference in Means for Job Stress at Planning and Execution phases of PLC

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	JobPS	2.6736	150	.38492	.03143
	JobES	3.9636	150	.28446	.02323

Table 3. Showing Paired Sample Statistics for Job Stress at Planning and Execution phases of PLC

Paired Samples Test									
		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	JobPS - JobES	-1.29000	.41365	.03377	-1.35674	-1.22326	-38.195	149	.000

We had measured the stress intensity between two phases through ETA Square method. ETA Square was used to see the magnitude difference through a scale given by 'Jacob Cohen' as if, ETA SQUARE was = 0.01 it has Small Effect, if ETA SQUARE = 0.06 it has Moderate Effect and if ETA SQUARE = 0.14 it has large effect.

$$\text{ETA SQUARE} = t^2 / t^2 + 100 - 1$$

't' is taken for the paired sample t-test and derived as following:

$$\text{ETA SQUARE} = (-38.195)^2 / (-38.195)^2 + 100 - 1$$
$$\text{ETA SQUARE} = 1458.858 / 1458.858 + 100 - 1$$
$$\text{ETA SQUARE} = 1458.858 / 1557.858$$
$$\text{ETA SQUARE} = 0.936$$

According to the scale mentioned, ETA SQUARE value was 0.936 which was resulting in a very large effect, which means stress at planning phase was lesser as compared to stress at execution phase of PLC (Cohen J., 1988).

DISCUSSION

Results depict that there was significant change in stress from planning phase to execution phase, and both that can result in severe outcomes in shape of poor job performance and employee turnover. Ratio of turnover was high in execution phase because employee has to do multiple task before completion of previous tasks (Parker and Skitmore, 2005). The complexity of relationship between worker and his work sometimes become a serious problem which could lead to severe consequence known as Burnout (Yener and Coskun, 2013). It has been reported by the various research workers (Kirkcaldy et al., 2002 and Lyne et al., 2000) that stress directly affects the job satisfaction which clearly direct towards employee perfromance and turnover due to stress. Job satisfaction was only possible when there was a less stress or controlled working environement not creating stress among employee. Contruction work was generally considered as highly stressful and had severe impact on employee perfromane which could be the reason of turnover (Yozgat et al., 2013). According to (Haynes and Love, 2004) extended working hours, work overload and less spending time with family were three noteworthy stressors. These three stressors could be the coping strategy of higher management to reduce the stress and get highly effective output both in work and among performance of employees, taking such step could lower the turnover of employees and hence, more loyalty and motivation will be developed. Hypothesis adopted are discussed as following:-

H_1: There was a significant change in job stress from planning phase to execution phase of PLC. H2: Job Stress at execution phase had significant impact on Job Performance during planning and execution Phase. H3: Job Stress during execution phase had significant impact on Employee Turnover during planning and execution phase. H4: Job Stress during planning had significant impact on Job Performance during planning and execution phase. H5: Job Stress during planning had significant impact on Employee Turnover during planning and execution Phase.

Conclusion: Research study was aimed at evaluation of the impact of job stress during planning and executon phase of PLC which conlcuded that low level job stress existed during planning phase but a high level job stress was pronounced at execution phase of PLC. Job stress at execution phase had also significant impact on employee turnover at planning and executon phases of PLC. Whereas, job stress at execution phase posed significant impact on job performacne at execution phase of PLC but no significant impact at planning phase. However, job stress at planning phase had significant impact on employees turnover on both planning and exeutuion phases, where, on job performance had no significant impact at planning phase but at execution phase. The outcome of the research emphasised that higher management should monitor the stress and maintain the level of stress to get effective output and avoid employees turover. This would enhance the performance of employees at every level of the project.

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