



ANALYSIS OF WORKPLACE STRESS AND ORGANIZATIONAL PERFORMANCE IN HUMAN RESOURCE MANAGEMENT: A CASE STUDY OF AIR TRAFFIC CONTROLLERS OF PAKISTAN

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ABSTRACT

Today main issue in management and organization is corporate sustainability which includes organizational performance. Organizational performance is one of the strategic issues for any management. The purpose of the study is to investigate the relationship between workplace stress and organizational performance; and mediational affect of employees' health issues between workplace stress and organizational performance. Both primary and secondary data were used for the current study. A self-developed questionnaire was used after validating it through a pilot study for collecting the data. Proportionate random sampling technique was used to select the sample – air traffic controllers. The hypotheses were accepted at significant 'p' value proving the model as good fitting. Out of 134 questionnaires, 122 were received back from the respondents and used for the current study. The study results confirm that there is a negative relationship between workplace stress and organizational performance; while there is a partial mediational affect of employees' health issues between workplace stress and organizational performance. The quantitative technique was used for investigation of the problem. The practical implications of the paper include implementation of the results provided by the researcher to reduce workplace stress by providing appropriate health facilities to the subjects; and increasing organizational performance. The findings of this study are important for corporations and future researchers on organizational behavior field. Original finding have a potential to contribute related field and especially aviation management and strategy since sever workplace stress has an direct impact on both performance and employee sustainability in aviation business. The research aims to raise awareness of organizational behavior to achieving business objectives since human resource is most critical risk on the way of corporate sustainability.

Keywords: Air traffic controller, Corporate sustainability, Human resources management, Management, organizational behavior, Organizational changes, Performance, Resource constrain, Strategy.

JEL Classification: D23, M1, M54, M120, O15, P27.

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1. INTRODUCTION

The issue of stress is one of the key problems facing organizations. [Statistics Canada \(2004\)](#) concluded that as many as 38.8% Canadian aged 15 to 75 are slightly feeling stress at workplace; 25% relatively feeling stress; while 5.4% are extremely stressed at work. The employees perception with regard to his or her ability to cope with change is mediated both by the support provided by the organization during the period of change and the magnitude or type of organizational change.

Since economic resources are scarce in nature, consideration is to be given to resource requirements. According to [Marilyn \(2003\)](#), “budget constraints, downsizing, fear of job loss and loss of benefits, layoffs, outsourcing, shorter work weeks, cuts in overtime, overflow of duties from not hiring new employees to fill positions, and a slowing economy all lead to worker insecurity and this in turn leads to worker stress.” [Marilyn \(2003\)](#) study indicates that “organizational change, restructuring, and downsizing are some of the greatest job stressors.” People are watching colleagues being made redundant and restructuring taking place and their own workload increasing as a result ([Willmott, 2011](#)).

Job or work influence workers health. Work can be a source of satisfaction and gives meaning to the life. Mostly the workplace stress has been blamed to have a negative emotional affect like anxiety, physical health problems, for example, headache or stomach upset (in short run); and in the long run, it can be a source of cardiovascular disease. Stress outcome can also be a “counterproductive behavior” at work. While stress at work is a health problem, this becomes an economic issue for many individual, organizations, and for society in general. According to [Chandra \(2004\)](#), “work-life conflict added billions to Canada’s soaring healthcare costs.”

A study of [Rubina et al. \(2008\)](#) concluded that there is a negative relation between stress and performance; while [James et al. \(1997\)](#) opinioned ‘performance’ as a dependent variable and sought to identify variables that produced variations in performance. [Allen \(2009\)](#) study concluded that the research had shown the link between work and health.

2. LITERATURE REVIEW

The study focuses on the air traffic controllers’ workplace stress; therefore, the main stress variables included in the study were resource constraints and organizational change experienced by the subjects. Giovanni study identified six main activities of air traffic controllers: aircraft monitoring, resolving aircraft conflicts, managing aircraft sequences, planning flights, assessing impact of weather, and managing sector. These six main activities are further divided into 46 sub-activities and 348 tasks the air traffic controllers perform.

2.1 Resources Constraints

Money, men (women) and material, machinery, market, and methods are known as economic resources, which may be internal and external resources like co-workers, airport supervisors, experts, feedback and support. The most important resources that air traffic controllers have to

plan and manage on day-to-day basis are people, machines, technology, materials, and budget provisions. Availability of these economic resources could propel achieving desired results, but on the other hand, scarcity of these resources may deteriorate the performance of air traffic controllers and the air traffic services of the civil aviation authority of Pakistan for its clients. Resource constraints have attracted the attention of organizations.

The performance is viewed as an activity wherein individual can accomplish his/her tasks successfully subject to the normal constraints of reasonable utilization of the available resources (Laiba *et al.*, 2011). In another study, Marilyn (2003) concluded that budgetary constraints, downsizing, fearing job loss or benefits, layoffs, outsourcing, reduced overtime, work over-load from not hiring new employees, and a slowing economy, lead to job insecurity and this in turn leads to worker stress. Employees surviving economic recession and remaining on payroll might be having a feeling of stress because of decreased resources and increased burdens (Overman, 2010). Employee engagement has a significant impact on the bottom-line performance of a company. After all, workplace elements such as lower absenteeism, lower staff turnover and high employee productivity all lead to higher corporate profitability" (Barbara, 2010).

2.2. Organizational Change

Marilyn (2003) study termed the organizational change, restructuring, and downsizing as some of the greatest job stressors. Generally people react badly to the process of change in the first instance to move from current state to a vision of the future (Taylor and Francis, 2005). The study further concluded that employees are apprehensive about the fear of unknowns; initially some employees are pleased that at least something is happening but then fear of uncertainty sets in, the study. However, this fear of unknown is reduced if there is two-way communication at the initial stage. The study of David (2003) concluded that certain jobs – air traffic controllers among them, have always been considered stressful; while Taylor and Francis (2005) pointed out that timings are extremely significant when managing the change.

Mark *et al.* (2006) study mentions that "as direct and indirect change increase, stress increases, as level of control and input into change increases, stress decreases" and "control and input served as a moderating variable between stress and direct change." Roslyn (2008) concludes that "the future of work is not about a 'one-size-fits-all' approach; the future of work is about a flexible and adaptable workforce." The study further states that "flexibility and adaptability options relate to employee's needs, abilities and talents" and the "future organizations are adaptable and flexible to the needs of their workforce and will find rewards in becoming employers of choice."

2.3. Organizational Performance

Performance management is a process of activities designed to monitor, measure and adjust various aspects of employees and organizational performance through management controls

(Bobby, 2008). Performance management also integrates the management of organizational performance with the management of individual performance.

A study by the Social Market Foundation (2005) identifies criticisms of performance targets: “there are too many targets, which are too rigid and affect employees’ morale. The study of Allison (2010) states that discarding the performance appraisal from the industries, most of the productivity of many industries might increase, harmonize workplace communications, reduce the stress and subsequently focus on their strategic directions.

2.4. Workplace Stress and Performance

According to (James *et al.*, 1997), organizational performance is a dependent variable and the study sought to identify variables that produced variations in performance. The relationship between stress and performance is negative as concluded by Rubina *et al.* (2008).

The study of Jungwee (2007) indicates that “the negative implications of work stress are recognized as a challenge to both employers and workers.” According to Bashir and Ismail (2010), “there is a negative correlation between job stress and performances; and that job stress significantly reduces the performance of an individual” and “organization should facilitate supportive culture within the working atmosphere of the organization.”

Csatari (2011) Canadian study of 2737 employees pointed out that workers think their poor performance could seriously impact their coworkers, company, and environment; and their job stress is increased resultantly. The study of Laiba *et al.* (2011) concluded that “the job stress had a negative relation with job performance that when stress occurs it effects the performance of employees negatively, that lower the stress it increases the performance so both these are inversely proportional each other.” There is a negative linear relationship between stress and performance (Bashir and Ismail, 2010).

Hypothesis.1 There is a negative relation between workplace stress and organizational performance

2.5 Relationship between Stress Employees Health Issues and Organizational Performance

According to Chandra (2004), “work-life conflict added billions to Canada’s soaring healthcare costs.” Klie (2008) study reveals that “the global economy is putting pressure on organizations to compete and that pressure is trickling down to employees who have to work harder and longer hours.” Employees’ health can be affected by work, both positively and negatively. Work can be a source of satisfaction and gives meaning to the life. Mostly the workplace stress has been blamed to have a negative emotional affect like anxiety, physical health problems, for example, headache or stomach upset (in short run); and in the long run, it can be a source of cardiovascular disease. Stress outcome can also be a “counterproductive behaviour” at work.

According to [Dua \(1994\)](#), “the work-related stress is of growing concern because it has significant implications like dissatisfaction, lowered productivity and lowered emotional and physical health.” [Graham \(2006\)](#) study indicates that “not only have many workers experienced stress on the job over the past year, but large numbers also report that their health is affected over this period as a result of stress in the workplace.”

According to the study of [Adamson et al. \(2011\)](#), an evidence is growing about prevalence of musculoskeletal symptoms which increase with extended hours of computer job and exposure to psychosocial stressors such as work-overloads and impracticable deadlines. [Diane \(1999\)](#) study revealed that “66% of respondents to a study on rising health care costs felt their Employee Assistance Program was effective in reducing employee stress; while 50% felt it was effective in reducing absenteeism.” Research conducted by [Dyck \(2001\)](#) concluded that “workplace stressors could lead to mental and physical illnesses that led to higher benefits costs and lower productivity and morale that, in turn, threaten the health of the organization itself.” [LePine et al. \(2005\)](#) study concluded that “role overload was negatively related to psychological health, which was the only significant relationship of role stressors on psychological or physiological assessments of employee health” and study also reveals that “role overload for this sample was significantly positively related to job satisfaction.” A nationwide [Survey \(2000\)](#) on health care found that “47% of employed Canadians with health benefit plans said they faced a great deal of stress at work” and the survey further stated that “26% of respondents said that stress in the workplace has made them physically ill at times, and 11% said they took more time off work because of stress”.

[David \(2003\)](#) study indicates that “workplace stress can wreck health, career and jeopardize personal happiness. Stress is terrible for organizational performance. It is a contributing factor towards employees’ injuries, absenteeism, presenteeism, and illness costing businesses. According to [Klie \(2008\)](#), “stress could really run down the immune system, which made much more vulnerable to more serious diseases.” [McGinty \(2007\)](#) study reveals that “stress is believed to trigger 70 percent of visits to doctors and 85 percent of serious illnesses.” [Lerner \(2010\)](#) study states that “stress-related disease is caused by excessive and prolonged demands on a person’s coping resources.” [Dobson \(2010\)](#) study indicates that “people are interested in staying healthy and curious to know how they are doing.” According to [Paul \(2002\)](#), “higher levels of stressors are associated with physical symptoms, such as headaches, and poor job attitudes.” Study conducted by [American Psychological Association Study \(2007\)](#) concludes that “workers who reported ‘stressed’ incurred health care costs that were 46 percent higher than other employees.”

[Clements \(2008\)](#) study concluded that “47% of respondents dealt-with employees suffering from stress by referring them to their family doctors; 18% of organizations had undertaken stress audits to identify causes of the problem in the workplace despite the HSE having introduced standards in 2004.” [Clair \(2009\)](#) cites experts’ warning that “the consequences of sick staff still going into work included reduced productivity and morale, and rising stress levels.” As reported by the [Nation \(2009\)](#), “the highly-stressed employees were more prone to illness, insomnia and, more drastically, depression.” [Allen \(2009\)](#) study states that “research has shown the link between

work and health” and “work can affect both physical and psychological health.” Individual work styles in response to workload demands and stressors are significantly associated with musculoskeletal symptoms. Individual work styles in response to workload demands and stressors are significantly associated with musculoskeletal symptoms (Adamson *et al.*, 2011)

Allen (2009) study indicates that “where health and wellness is managed well, organizational performance increased more than 2.5 times”. The study also finds “a strong link between employee well-being and engagement and retention.” The Nation (2009) reported that “highly-stressed and burned-out employees were more prone to illness, insomnia and, more drastically, depression.” Allen (2009) found “strong link between employee well-being and engagement and retention.”

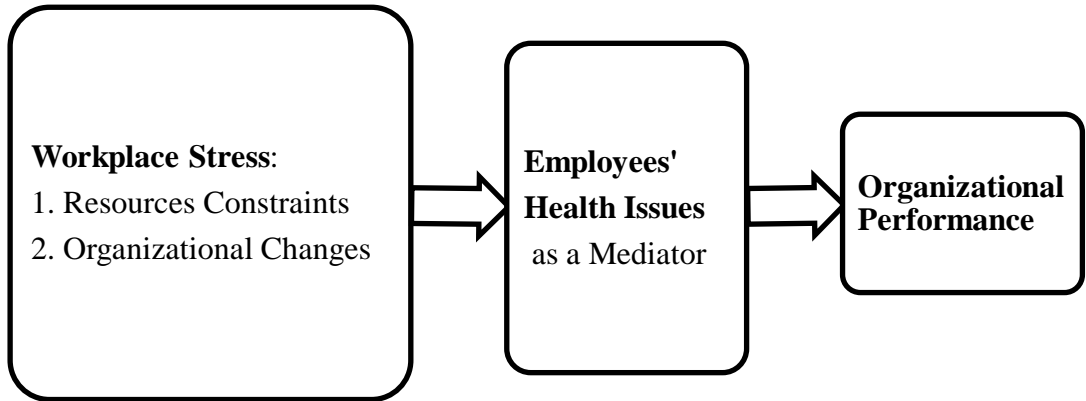
According to Financial Adviser (2009), “businesses that take heed of their responsibility to look after the health and welfare of their staff will not only reap the benefits of a happier workforce but enhance on their business capital.” Tynan (2009) indicates the “stress as a person’s physical or emotional response to demands or pressures, come in different forms and impacted different areas of lives - family, relationships, finances, health and work.” According to Boesveld (2009), “people get fatigued and they are tired and their vigilance goes down” and the study also revealed that “linking overtime and long working hours with hypertension, cardiovascular disease, fatigue, stress, depression, musculoskeletal disorders, chronic infections, diabetes, general health complaints and all-cause mortality.” According to Filsinger (2010), “78 per cent of employers believe work-related stress is one of their top health-risk concerns.” The Star (2011b) survey found that “44 percent of finance directors and 38 percent of HR directors believed employee health was a priority for their companies” and the survey further concluded that “60 percent of financial directors and 72 percent of HR directors agreed with the notion that workplace health was a threat to UK productivity and competitiveness.” Allen (2009) study concludes that “research has shown the link between work and health” and “work can affect both physical and psychological health.”

Hypothesis.2 Employees health Issues mediate the relationship between Workplace Stress and Organizational Performance

3. CONCEPTUAL FRAMEWORK

Based on variables literature review, the relationships are illustrated in Figure.1. Workplace Stress has a negative relation with the organizational performance; and employees’ health issues mediate between workplace stress and organizational performance:

Figure-1. Conceptual Framework



The above framework is hypothesized as under:

- Hypothesis .1** There is a negative relation between workplace stress and organizational performance
- Hypothesis .2** Employees Health Issues mediate the relationship between Workplace Stress and Organizational Performance

4. METHODOLOGY

4.1 Sampling

Air Traffic Controllers of civil aviation authority of Pakistan working at Jinnah International Airport (JIAP), Karachi, Allama Iqbal International Airport (AIIAP), Lahore, Benazir Bhutto International Airport (BBIAP), Islamabad, and Multan International Airport (MIA), Multan was the total population. The sample consisted was 20% of the population as shown in Table.1.

Table.1. Sample Statistics

Population	Element	Proportionate Sampling	
		(20% ofelement)	Questionnaires Received Bach
JIAP, Karachi	325	65	64
AIIAP, Lahore	280	56	51
BBIAP, Islamabad	30	6	4
MIA, Multan	35	7	3
Total	670	134	122

Out of 134 distributed questionnaires, 122 respondents returned back the questionnaires as the rest could not return for unknown reasons. This shows 91% response rate, which is acceptable in social sciences research (Fowler, 1988).

4.2. Instrument Development

The research instrument was a self-developed by the researcher and administered by him for the current study. Its validity was tested through pilot study and focus groups meeting based on which few changes were incorporated in the final questionnaire to meet the local values and traits for greater validation. For analyzing the resources constraints, organizational changes, employees' health issues and organizational performance, 12 statements for each variable were included in the questionnaire. Likert scale was used where number-1 indicated 'strongly disagree', number-2 indicated 'disagree', number-3 indicated 'neither agree nor disagree', number-4 indicated 'agree', and number-5 indicated 'strongly agree.'

4.3. Data Analysis

Hypothesis.1 was analyzed using simple regression in SPSS 18.0 version; while for analysis of hypothesis.2, [Baron and Kenny \(1986\)](#) 4-steps method was used in which several regression analyses were conducted and significant of the coefficients at each step was examined.

4.5 Reliability Test

The reliability test for variables was confirmed through computing the cronbach alpha. According to [\(Nunnally, 1978\)](#) the minimum alpha of 0.6 sufficient for early stage of research. Based on cronbach alpha results, study variables are under acceptable range as shown in Table.2 apart from the descriptive statistics. The model is good fitting as confirmed by correlation analysis, as there is a high correlation among different variables

Table-2. Descriptive Statistics

Name of Variables	Reliability Test	Mean Value	Standard Deviation
Resources Constraint	0.923	2.8914	.82335
Organization Changes	0.908	2.5806	.66269
Employees' Health Issues	0.890	1.9795	.6248
Organizational Performance	0.860	2.3864	.56540

There is high positive correlation among variables as depicted in the descriptive statistics of Table.1. Therefore, the model is a 'good fitting' one. Pearson correlation coefficient confirms high correlation among most of the study variables as shown in Table-3.

The workplace stress is negatively correlated to the organizational performance with value -0.800 to which correlational analysis supported. Thus, workplace stress can negatively affect organizational performance. Workplace Stress is negatively correlated with employees' health issues with the value -.322. Organizational Performance is negatively correlated with employees' health issues at value -.217 and negatively correlated with workplace stress with the value of -0.800.

Table-3. Correlation Analysis

Sr. No.	Variable Name	Organizational Performance	Workplace Stress	Employees' Health Issues
1	Organizational Performance	1	-.800**	-.217*
2	Workplace Stress	-.800**	1	-.322**
3	Employees' Health Issues	-.217*	-.322**	1

** Correlation is significant at 0.01 level (2-tailed).

* Correlation is significant at 0.05 level (2-tailed).

Employees' health issues are negatively correlated with organizational performance with the values of $-.217$ and negatively correlated with workplace stress with value of $-.322$. All values are significant at 0.01 or 0.05 levels.

5. HYPOTHESIS TESTING

After correlational analysis, the researcher tested the proposed hypotheses against the collected data as follows:

Hypothesis.1 There is a negative relation between workplace stress and organizational performance

To analyze the hypothesis.1, SPSS 18.0 version was used and simple regression analysis was conducted. Resultantly, hypothesis-1 is accepted with beta value of $-0.6.12$.

Analysis show that 61.1% variance in organizational performance is explained by workplace stress, which is apparent by the value of $R=0.611$. The model's goodness of fit is described by values $F=29.766$ at $p=0.000$. The negative relationship between predictor and predicted variable is evident and significant by value of $t=5.280$. Therefore, it H1 is accepted.

Hypothesis.2 Employees' Health Issues mediates the relationship between Workplace Stress and Organizational Performance

The 4-steps method of [Baron and Kenny \(1986\)](#) was used to analyze hypothesis.2 as summarized in Table-4.

Table-4. Results of 4-steps [Baron and Kenny \(1986\)](#) methods for Hypothesis.2

Step #	Step Path	Estimates	95% Confidence Interval (CI)	Beta Value	'P' value
1	c	5.566	1.342 to 10.346	.342	.007
2	a	1.541	.398 to 3.465	.421	.009
3	b	1.397	.745 to 2.987	.578	<.001
4	c'	4.786	-.678 to 8.561	.345	.087

Effect of Workplace Stress on path 'c' (Organizational Performance) is equal to 5.566 ($p = .007$), with a 95% CI of 1.342 to 10.346 and a medium effect size ($d = .651$). Step # 1 is passed. The effect of Workplace Stress on path 'a' (Health) is equal to 1.541 ($p = .009$), with a 95% CI of .398 to 3.465. Step # 2 is passed. The effect of Health on Organizational Performance controlling for Workplace Stress or path 'b' is equal to 1.397 ($p < .001$), with a 95% CI of .745 to 2.987. Step # 3 is passed. The effect of Workplace Stress on Organizational Performance controlling for Health or path 'c' is equal to 4.786 ($p = .076$), with a 95% CI of -.678 to 8.561. The least squares mean for Workplace Stress Control is equal to 12.784 and the least squares mean for Workplace Stress is equal to 16.782. Step # 4 is passed.

A mediational diagram for un-standardized estimates is shown in Figure 1 and for standardized estimates is shown in Figure 2. Thus, it is concluded from results that there is a partial mediation.

Figure-1. Mediational Diagram (Un-standardized Coefficients)

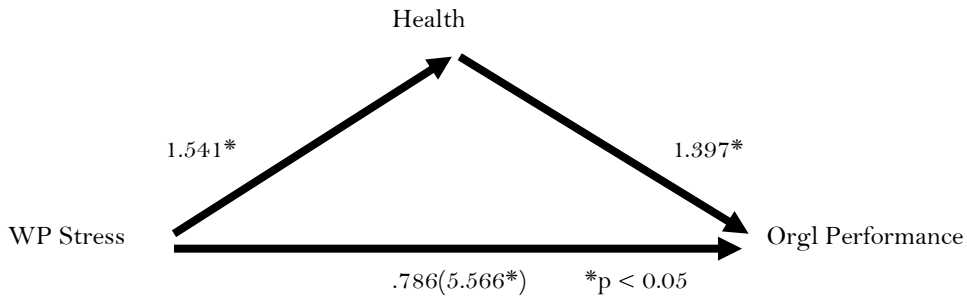
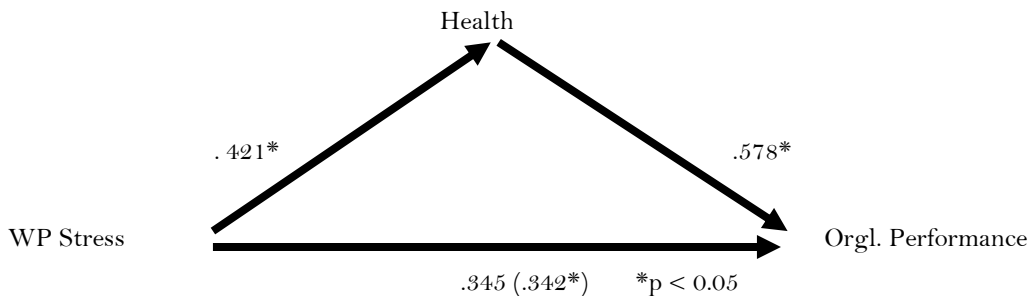


Figure-2. Mediation Diagram with Standardized Coefficients



6. CONCLUSION

Organizational behavior and performance are the strategic issues for any management for its corporate sustainability. To get sustainable business, manager is to manage business workplace stress environment that has a direct impact on human resource. The study concludes that workplace stress has negative relations with the organizational performance; while employees' health issues mediate between workplace stress and organizational performance.

The study is based on a self-developed questionnaire, which was used after validating through a pilot study for collecting the data. Proportionate random sampling technique was used to select the sample – air traffic controllers. The model is a ‘good fit’ and hypotheses were accepted at a significant ‘p’ value. As hypothesized, workplace stress has inverse relationship with organizational performance; and employees’ health issues mediate between workplace stress and organizational performance. The study will contribute towards the literature on organizational behavior, management and its strategy in sustainability perspective. The findings are helpful in improving the level of performance through positive impact on employees’ health issues in reducing workplace stress provided the results of study are applied to the civil aviation authority of Pakistan.

7. STUDY IMPLICATIONS

The practical implications of the study include implementation of the results provided by researcher to decrease level of subjects stress and address their health issues; and increase organizational performance. Sample size for the current study is consisted of the air traffic controllers of civil aviation authority of Pakistan. So the results are very much helpful for the same field. If the results of the current study are applied to the air traffic controllers workplace of civil aviation authority. It can improve the level of performance through positive impact on employees’ health issues in reducing workplace stress.

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