

## The Relationship between Occupational Stress and Job Satisfaction among Employed Engineers

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### ABSTRACT

The aim of this research was to study the relationship between occupational stress and job satisfaction among employed engineers. The hypothesis presented was that job satisfaction will be negatively correlated with occupational stress. The tools used to assess were the OSI (by Dr A. P. Singh and Dr A. K. Srivastava) and JSS (by Dr T. R. Sharma and Dr Amar Singh) for occupational stress and job satisfaction respectively. The items of these scales were combined into a questionnaire and data was collected through a survey design. The sample consisted of 100 employed engineers (n=50 males and n=50 females) aged 25 to 30 years. The correlation coefficient was calculated for the two variables along with the two-tailed P-Value. The results showed a negative significant relationship between work-related stress and the level of job satisfaction among working engineers, also there were no statistically significant differences based on gender. The research findings were in accordance with the hypothesis.

**Keywords:** Occupational Stress, Job Satisfaction, Job Performance, Mental Health, Applied Psychology, Organisational Psychology

Occupational stress is a work-related stress and can become a chronic condition. Occupational stress can be managed by understanding the stresses of the workplace and taking steps to correct them. It can occur when employees do not feel supported by their supervisors or co-workers, feel that they have little control over the work they are doing, or find that their efforts at work are not in line with the rewards of work. Stress in the workplace worries both workers and employers because stressful workplace conditions have to do with employees' emotional well-being, physical health, and work performance.

Some of the psychological theories that explain occupational stress are the effort-reward imbalance model, the job-demands resources model, and the job characteristics model.

The link between employee effort and employee-related rewards is the focus of the effort-reward imbalance (ERI) model. The ERI model suggests that work marked by high levels of effort and low rewards leads to stress. The rewards of work can be seen as payment or simply acknowledgement.

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## **The Relationship between Occupational Stress and Job Satisfaction among Employed Engineers**

In the job demands-resources model, demands mean workload and resources refer to the physical (equipment), psychological (work-related skills), social (support from the seniors) and organizational resources (how much choice is given to the employee in the matter of task) to do the work efficiently. High demands and lower resources lead to occupational stress.

Job Satisfaction is defined as the level at which an employee feels satisfied and motivated with his or her work. It happens when an employee experiences job security, professional advancement, and a healthy balance between work and personal life.

Fulfilment theory of job satisfaction states that a worker will have job satisfaction if his actual needs that are expected are satisfied. This theory measures satisfaction through the level to which the worker's actual needs are satisfied.

Maslow's need hierarchy theory states that a human being is inherently motivated to satisfy his needs in a hierarchal order starting from physiological needs, safety needs (biological needs), belongingness and love, esteem needs (psychological needs) to self-actualisation (self-fulfilment needs). This can also be applied to the work environment. If all of the needs of an employee are met, they will be satisfied with their job and it will also increase the productivity.

Osafo et al (2020) studied the relationship between occupational stress, job satisfaction and gender difference among bank employees. A questionnaire was used on 112 bank employees across 4 banks. The result showed no significant gender difference and higher occupational stress was related to job dissatisfaction in both.

Chitra et al (2018) studied the psychological well-being of female police officers in relation to job satisfaction and occupational stress from the Southern part of India. A questionnaire was used on a sample of 250 police officers. The result showed that resilience training was effective in decreasing occupational stress and increasing job satisfaction and the overall psychological well-being of the police officers.

Hoboubi et al (2017) studied occupational stress and job satisfaction in relation to job productivity. A questionnaire was used on a random sample of 125 employees. The results showed that there was no significant relationship between job stress and job performance, but a significant relationship between job satisfaction and job productivity.

Darmody (2016) studied occupational stress and job satisfaction in primary school principals. 898 responses from primary school principals were assessed. The result showed that job satisfaction was low and they felt stressed about their jobs. There was a significant relationship between both the variables.

Haque et al (2016) studied occupational stress in relation to organisational commitment and job satisfaction. Convenience and snowball sampling was used and data was collected from a total of 825 employees (403 from UK and 425 from Pakistan) through online survey questionnaire. The result showed that the employees from Pakistan score higher in occupational stress than the UK employees though their job satisfaction and organisational commitment had no significant difference from the UK employees.

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De Simone et al (2016) examined the relationship between work stress, job satisfaction and overall physical health in teachers. A questionnaire was administered to a sample of 565 teachers. The result showed that occupational stress inversely affected job satisfaction as well as physical health.

George et al (2015) studied the job stress and satisfaction amongst bank employees. A questionnaire was administered to 337 employees. The result showed that employees from different sectors had different levels of job stress and satisfaction. There was a significant relationship between occupational stress and job satisfaction.

Kataoka et al (2014) studied the effect of occupational stress on job satisfaction amongst university teachers. A questionnaire was designed and was filled by 405 teachers. The results show that job stress has a negative impact on job satisfaction and mental health.

Akomolafe et al (2014) studied the effect of psychological factors such as job stress, self-efficacy on work satisfaction in secondary school teachers. Descriptive research design was used on a sample of 400 teachers. The result showed that both psychological factors affected job satisfaction. Self-efficacy directly and occupational stress inversely affect job satisfaction.

Mark et al (2012) studied job satisfaction and occupational stress in healthcare staff in hospitals. 2 questionnaires (one for occupational stress and one for job satisfaction level) were used and a total of 90 questionnaire was filled. The result showed that workers who had high scores in occupational stress had low scores in job satisfaction.

### ***Rationale of the Present Study***

The purpose of this research is to assess the relationship between occupational stress and job satisfaction amongst engineers. Prior studies and research have proven that there is a significant relationship between work-related stress and job satisfaction. The studies are mostly on employees not related to the engineering sector, which is a major source of occupation in India. Therefore, there is a need to reduce the research gap, which would shed light on various occupational stressors faced by the employees in that industry.

### ***Hypothesis***

- Job satisfaction will be negatively correlated with occupational stress amongst employed engineers.
- There will be no significant difference based on gender.

### ***Variables***

- In the present study, Occupational Stress is the independent variable, while Job Satisfaction is the dependent variable.

## **METHODOLOGY**

### ***Sample:***

A sample of 100 participants was selected, which consisted of female employed engineers (n=50) and male employed engineers (n=50), through non-probability sampling, all aged from 25 to 30 years.

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### *Sampling Method:*

The subjects were selected through purposive sampling and the questionnaires were filled by those who had an engineering degree and were presently employed in their own profession.

**Inclusion Criteria** required that the subjects must be working as engineers, and should be 25-30 years of age.

**Exclusion Criteria** was that the subjects were not employed, and/or in the same profession as their degree.

### *Materials*

The tools that have been used in this research are Dr A. P. Singh and Dr A. K. Srivastava's Occupational Stress Index (OSI), to assess occupational stress amongst the employees (engineers), and Dr Amar Singh and Dr T. R. Sharma's Job Satisfaction Scale, to assess job satisfaction amongst the employees (engineers).

The OSI was developed in 1981, and consists of 46 items out of which 18 are negatively framed. Responses are recorded on a 5-point Likert Scale. It is used to evaluate the level of work-related stress in employees in different aspects of their professional life.

The Job Satisfaction Scale was developed in 1969, and consists of 30 items out of which 6 questions are negatively scored. The subject has to choose one of the five options as their response. This scale measures the level of job satisfaction that an employee feels towards their professional role as well as their work environment.

### *Procedure*

A questionnaire was prepared by combining Occupational Stress Index (OSI) and Job Satisfaction Scale (JSS), and was sent to a sample of 100 employed engineers (50 males and 50 females) through on-line mode. Their doubts were cleared by providing a thorough description of the questionnaire at the start of the process, and informed consent was taken.

The subjects had to select one option out of 5 options corresponding to Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree. Their responses were scored based on the respective scales.

In the OSI, the positive keys were scored with 1, 2, 3, 4, 5 for SD, D, UD, A, SA respectively. And the negative keys were scored with 5, 4, 3, 2, 1 for the same sequence. On the other hand, in the JSS, the positive questions were scored with 0, 1, 2, 3, 4 for the same and the negative questions were scored with 4, 3, 2, 1, 0.

## **RESULTS**

The total responses from the male sample group were scored and grouped into two different categories (columns) for the two scales, and the Pearson's Correlation Coefficient, as shown in Table 1, was calculated to find out if there was a significant relationship between occupational stress and job satisfaction.

The total responses from the female sample group were also scored and grouped into two different categories (columns) for the two scales, and the Pearson's  $r$ , as shown in Table 2, was calculated to find out if there was a significant relationship between the two variables and also if the result significantly varied with gender.

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The Pearson's  $r$  for the male sample was calculated to be  $-0.82$  with a two-tailed  $P$ -Value less than  $0.00001$ , while the Pearson's  $r$  for the female sample was  $-0.83$ , also with a two-tailed  $P$ -Value less than  $0.00001$ . The result was significant at  $p < 0.01$ ,  $p < 0.05$  and  $p < 0.10$ , hence suggesting a very strong relationship between both the variables.

As predicted, there was an extremely significant negative correlation between the two variables, occupational stress and job satisfaction, with no significant gender differences.

**Table 1 Correlation table for the male sample group:**

	<i>Occupational Stress</i>	<i>Job Satisfaction</i>
<i>Occupational Stress</i>	1	$-0.8243$
<i>Job Satisfaction</i>	$-0.8243$	1
<i>P-Value</i>	$P < 0.00001$	

**Table 2 Correlation Table for the female sample group:**

	<i>Occupational Stress</i>	<i>Job Satisfaction</i>
<i>Occupational Stress</i>	1	$-0.8337$
<i>Job Satisfaction</i>	$-0.8337$	1
<i>P-Value</i>	$P < 0.00001$	

## DISCUSSION

The Pearson's correlation coefficient for the male sample was  $-0.82$ , which suggests that there is a significant negative relation between occupational stress and job satisfaction amongst male employed engineers. Most of the subjects who had higher occupational stress scored lower on the job satisfaction scale, and those who had scored lower on the occupational stress had higher scores on the job satisfaction scale. This suggested that the level of occupational stress does affect an employee's job satisfaction. The engineers who had high work-related stress were dissatisfied with their jobs and showed low job performance.

The Pearson's correlation coefficient was  $-0.83$  for the female sample, which suggests that there is a significantly negative relationship between occupational stress and job satisfaction amongst female employed engineers. Similar to the male subjects, those who scored higher on occupational stress had lower job satisfaction, and those who scored lower on occupational stress had higher job satisfaction. This indicated that the female engineers who had high work-related stress were not content with their job roles and the overall work environment.

There was no statistically significant difference in the sample based on gender.

As the hypothesis suggested, the findings were similar for both the genders, and concluded that occupational stress was negatively correlated with job satisfaction in the demographic of employed engineers.

## CONCLUSION

In today's world, the work environment has become extremely stressful for its employees. Majority of the employees have been suffering from chronic occupational stress, which adversely affects job satisfaction. This in turn leads to low job productivity, imbalance between family and professional life, decreased self-esteem and self-worth, and a severe lack of coping skills, which eventually result in serious mental health issues. The present

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study was carried out to understand the relationship between job-related stress and job satisfaction, and how work-related stress affects job satisfaction amongst engineering employees.

The study concluded that there was a significant negative correlation between occupational stress and job satisfaction, and the gender differences were statistically insignificant. This result can open doors for a number of future studies that could provide solution to the issue of high prevalence of occupational stress amongst different professions. The organizations should be more considerate towards its work-force and provide proper mental health facilities for the employees.

### **Recommendations**

The study revealed the effect of occupational stress on not only work satisfaction but also on the mental health of underpaid and overworked employees, hence there is a need for more research on this topic, and in-depth study of how occupational stress severely affects the mental well-being of employees from different fields. The relationship between work environment and the overall well-being of workers can be researched further.

### **Limitations**

- The limitations of the empirical findings presented here should be taken into account. There is a lack of prior research on occupational stress amongst engineers, as most of the literature is on teachers and healthcare professionals, hence further study is required for thorough comprehension.
- Research can be carried out on a larger sample for accurate statistical findings, as the increase in sample size leads to more precision in results, moreover, a range of data collection methods can be employed for the same.

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### **Conflict of Interest**

The author(s) declared no conflict of interest.

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