

## **The Impact of Job Stress to Job Satisfaction among Engineers: A Literature Review**

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### **Abstract**

The quest to obtain job satisfaction is not an easy task. Most of the time it will come together with job stress. Managing and handling job stress is a must and it is a challenging task. Able to control job stress will increase the productivity while failure to manage will lead to many problems in the workplace. A challenging career as an engineer usually leads to many types of job stress. Job stress is an unpleasant emotional situation that employees experience when the requirement of work-related or not related cannot be counterbalanced with the ability to resolve them. Job stress has been identified by most of the academic researchers as the factor which has contributed to higher or lower job satisfaction and performance. Issues like health problems, role ambiguity, home interference as well as management role and work pressure are among the stress factors which have always been debated as most

common problems. This study will examine the job stress factors that may impact the job satisfaction among engineers. The findings from this paper should be sufficient to conduct future research on the impact of job stress on job satisfaction among engineers or engineering industry.

## **Keywords**

Job Stress; Job Satisfaction; Engineers Stress; Job Stress Effect; Engineers Job Performance

## **1. Introduction**

Job stress always be seen as an unpleasant emotional situation that employee experience when the requirement of work-related or not related cannot be counter balance with the ability to resolve them (Halkos and Bousinakis, 2010). Companies had spent billions to send their staffs for stress management programs and trainings. This is because, it is crucial to manage stress in order to increase job satisfaction and job performance. Job stress had a positive or negative impact towards job satisfaction and performance. Job stress can act as a motivator which creates creativity and satisfaction among employees. Nevertheless, if the employee is being carried away with his or her job stress, it can result to aggressiveness and low job satisfaction.

Therefore, it is the intention of this study to review past literature on the impact of job stress to job satisfaction among engineers not only for the sack of research only but also to alarm the companies and engineers himself on the phenomena call job stress. The factors establish from this study will be used to conduct future research.

## **2. Past Research**

Several studies found that job stress influences the engineer's job satisfaction and their overall performance in the company. This is because organizations demand their engineers' to produce higher productivity. Stress exists among various occupations inclusive of engineers. Stress can bring undesirable impacts on employees through creating job dissatisfaction (Leather, Beale and Sullivan, 2003). When sources of stress increase in job environment, job satisfaction reduces. Low job satisfaction can be predicted through resources of stress such as demands of the profession and great volume of work. Thus, job satisfaction has an important role in improving the performance of engineers (Leather, Beale and Sullivan, 2003; Antoniou, Davidson and Cooper, 2003).

The relationship between job stress and job satisfaction among engineers has become topic of discussions among academicians as well as engineers because it has been seen that engineers are facing severe competitions and work pressure worldwide. Many professionals are able to sustain pressure and others are unable to do so. A continuous pressure leads to dissatisfaction and employee performance. Employees with low occupational stress have more job satisfaction than employees with high occupational stress (Johnson, Cooper, Cartwright, Donald, Taylor & Millet, 2005). For instance, if a person is dissatisfied with the structure of the organization, this dissatisfaction culminates in one of the sources of job dissatisfaction. There is a strong negative relationship between occupational stress and job satisfaction (Sweeney and Quirin, 2009; Lambert, Hogan, Elechi, Jiang, Laux, Dupuy, & Morris, 2009). Job satisfaction also has an average correlation with occupational stress (Sveinsdottir, Biering, and Ramel, 2006).

Several studies been done in measuring occupational stress and job satisfaction in Malaysian context. The level of occupational stress, job satisfaction and relationship between occupational stress and job satisfaction facets has been examined. Majority of male employees reported moderate levels of job satisfaction in the favorable nature of work facet. High occupational stress on the other hand, was related to an unknown superior's evaluation of one's workplace performance (Nor Liyana and Mansor, 2009). Sources of job stress also been investigated such as role ambiguity, role conflict, office politics, and meaningless nature of work and management role. These sources have been identified in term of their important with respect to their impact on dissatisfaction among the employees. Job stress has significant negative relationship with job satisfaction (Jahanzeb, 2010).

The impact of environment stressor and the nature of the employment contract on psychological reaction to occupational stress such as role conflict, work overload, interpersonal difficulties, work-family conflict, work

instability, lack autonomy and pressure of responsibility showed that the role conflict and work overload had a negative impact on job satisfaction. The role of conflict showed a negative impact on the positive emotions at work, while the pressure of responsibility interfered positively in it. The work overload interfered positively in negative emotions at work while the pressure of responsibility interfered negatively. The type of contract did not affect significantly any one of the psychological reactions to occupational stress (Correa and Ferreira, 2011).

Engineers often do not have enough time to do their work well because of unmanageable workloads. Engineers are often required to work overtime, even on weekends. This could interfere with an engineer's home and personal life. The major stress factors in employees were performance pressures: when arousal is either too high or too low, performance declines and so does the job satisfaction; role ambiguity: when employees has inadequate information about his/her work role results in job stress that affect job satisfaction; Home-work interface: family and work are inter-related to the extent that experiences in one area affect the quality of life in the other. The workload and relationship with other factors remained insignificant contributors to work job stress among employees. A possible explanation is that employees usually look up to their supervisors and if they do receive their support, they might feel that their work is appreciated and become more secure in regard to their job which might decrease their stress level and vice versa. There is a negative relationship between job stress and job satisfaction. Those employees who had high level of job stress had low job satisfaction (Muhammad and Muhammad, 2012).

### **3. The Effect of Job Stress**

Job stress has become one of the most critical health issues in the modern world. The Health and Safety Executive (2001) in United Kingdom had documented how prolonged or intense of job stress can be resulted of both physical and mental ill-health. Nevertheless, the negative effect of job stress is not on the part of the employee only since the organization also will expect to experience the unfavourable outcome. Job stress will boost up the medical expenses, higher rates of absenteeism and turnover, more accidents and poorer performance. Thus, is not surprising if job stress has been widely recognised as a significant business concern (Sui, 2003),

Stress will give a variety of consequences and the effect will different among each individual. The experience of stress is related with feeling of increasing distress, which leads to anxiety and depression. People in stress may find difficult to make decision, to think logically and to concentrate. Besides that, they also feel tired and exhausted, become bad-tempered, and hard to rest and sleep. Stress also gives negative effect on physical such as headache, raised blood pressure, back pain, digestive disorder and heart diseases. Among the source of stress that had been found are long hours, unpleasant noises, sights, undue quiet, sudden shift from intense to mundane tasks, time pressure, no second chance and enclosed environment (Muhammad et al, 2011). Job stressor among other career cannot be generalized to engineers. A less job satisfaction among engineer is triggered from a conflict between them and their company desire. Most of engineer aims to be a professional and frustrated if they are not being able to publish and free from practical affairs of the business. They will be happy if able to work on research that contributes to scientific knowledge (Rothmann and Malan, 2006). Thus, most of the engineers feel that their skills and expertise are not fully utilised. The consequences of this argument had caused a job stress among engineers (Cooper et al. 2001).

Engineers are the fast-track individuals and have specialist knowledge and expertise; thus, they will have great expectations and ambitions for their career. Nevertheless, their goals and expectations are sometimes not aligned with their working companies (Taris, 2001). Besides that, the continual need for safety is required in some fields of engineering, however, in some cases the engineers themselves are held legally responsible for that. Regrettable, a continued emphasis on the need for safety in a hazardous environment may be an even greater source of strain than the hazards themselves. Excessively accountability for other people's lives and safety is a significant source of psychological strain (Cooper et.al. 2001).

Unmanageable workloads always being a factor an engineer does not have enough time to do their work well. The sheer number of hours that a person works can produce strain. The requirement to work overtime and over the weekend also contributes to the stress factor. This situation will interface with an engineer's home and personal life. This is supported by that found that work-life balance is the highest stressor for engineers. The competing demands between work and family obligations has resulted a role conflict. On the other hand, high job demands or overload

work may drain employees' mental and physical resources which may lead to health problems or burnout. This circumstance is also a reason for withdrawal from work and reduced motivation or commitment (Rothmann and Malan, 2006; Cooper et. al, 2001). Reitz (2004) conclude the following factors contribute to the satisfaction and dissatisfaction among engineers.

Table 1: Factors contribute to satisfaction and dissatisfaction of the engineer Source: Reitz (2004)

<i>The most factors that give job satisfaction as an engineer</i>	<i>The most factors that give job dissatisfaction as an engineer</i>
<i>1. Challenging work assignments</i>	<i>1. Too much non engineering work.</i>
<i>2. Work environment and colleagues</i>	<i>2. Lack of support for management</i>
<i>3. Constantly changing technology</i>	<i>3. Uncertainty in job market</i>
<i>4. Good compensation</i>	<i>4. Poor compensation</i>
<i>5. Good job security</i>	<i>5. No potential for advancement</i>

In order to lessen the effect of job dissatisfaction among engineers, the organization should consider three levels of intervention strategies. The first level intervention advice the organization to assists engineers with work-life balance. This is the most effective way to lighten the stressor. The second level intervention is the focus on management training to lessen the impact of environmental stressor exert on engineers. This training aims to enhance the engineers' awareness of their levels of strain and to enhance their personal coping strategies. The third level intervention that the organization can employ is assigning an industrial psychologist. Thus, engineers who have suffered stress can be referred for rehabilitation. Counselling may aid engineers to deal with workplace stressors that cannot be change structurally (Rothmann and Malan, 2006)

#### 4. Happiness and Productivity Level

A progressive and innovative manager is vital in achieving productivity gains with human resource management techniques that go beyond pay incentives. By increasing the motivation and satisfaction among engineer workers, they can provide better productivity, loyal, efficient workers, higher quality work, and increased likelihood of staying in organization. Therefore, it is essence of employee motivation and effectiveness of management in training where a direct relationship between effective management with modern human resource management. Hence, managers must provide a good working environment and simultaneously can achieve company goals and employees' goals. Moreover, factors that influence job performance and professional development of engineers have important implications with the development of human resources in technology.

The level of satisfaction among mechanical engineers has relatively high over the years. They would recommend engineering to their children. The three most important areas contributing to satisfaction were challenging work assignments, work environment and colleagues, and constantly changing technology (Reitz, 2004; Boonzaier, 2001). The mediating effects of employee and organization service value equivalence on pay for performance (PFP) and work attitudes. When employees perceived a high PFP link they tended to exhibit more positive work attitudes. These findings offer a new insight into the important role that reward practices such as PFP play in the alignment of employer and organization service quality values. Therefore, employee's satisfaction leads to customer satisfaction (Chiang and Birtch, 2009).

The capacity building and employee is positively correlated to organizational performance. Therefore, the firms through the Human Resource Departments (HRD) should plan and execute training programmes that are line with the objectives of the firm and match the employees' abilities and skills to enhance effective organizational performance. As well as the HRD practitioners should consider desired work related attitudes such as organizational motivation, employee turnover, employee productivity, organizational performance, job satisfaction and motivation to be an additional outcome of employee productivity. Companies also must address employees' satisfaction, health and morale in order to maintain high worker productivity. Moreover, HRD must create conducive working environment for its employees and highly held in high esteem (Wanyama and Mutsotso, 2010),

Happy and satisfy employees will motivate them to participate in planning and decision processes. The person should be concerned in the changing process where a wide range of approaches in participating will exist (Lauer 2010; Summers and Hayman 2005). Thus, the participant is generally considered as a win-win situation where the enterprise and the worker should benefit from these approaches. Table 2 shows some of the main advantages of participants for workers and enterprise.

Table 2: Advantages of employees' participation

1.	<i>A higher motivation of workers can be realized (Lauer, 2010)</i>
2.	<i>As well as workers can design their working environment, thus the intrinsic motivation will rise (Dombrowski et. al 2010). The higher motivation in identification and commitment to tasks will increase and the productivity also may be higher (Lauer, 2010; Scholl, 2007).</i>
3.	<i>The trust of workers in management and enterprise will rise as their needs and wishes are addressed in participation (Sojka, 1999; Summers and Hayman 2005).</i>
4.	<i>Satisfaction of employees will make them implied in knowledge. Their creativity can be utilized to improve the production process (Scholl, 2007; Dombrowski et. al 2007; Grütter et. al 2002).</i>

There is no general objective on the rating of satisfaction, since it is rather subjective and depends on individual motivation and how employees personally perceive their labour conditions. One of the part criteria for satisfaction level besides incentives or responsibility is the participation of the employees. Hence, the characteristics of satisfaction, the participation approaches cannot be separated beneficial and unfavourable. Some of the employees may prefer involved in the decision process about the layout of workplace while others employees may desire doing a routine job. By doing their favours job, it can boost the companies productivity (Dombrowski et. al, 2010).

The success of organization is relying on the employee satisfaction on their job. Thus, it requires in enhancing the employee satisfaction is a critical part since it is become an input towards the success of an organization. In the recent surroundings, the employee satisfaction and customer satisfaction can give the major impact directly towards the achievement of the organization. From the employees' standpoint, encouraging working environment coupled with others incentives such as increment in salary and frequent training which is focused the employees to work with dedication will uplift the organization to the success. Hence, it appears reasonable to state that understanding of employee role is extremely important as it become the key factors in the success of modern organization (Khusor et. al, 2011).

## Conclusion

It is important that companies able to manage their engineers' stress in order to increase their job satisfaction. To date, no specific rule of thumb to gauge the rating of satisfaction among engineers because it still depending on their motivation and how they perceive their employment conditions. The most crucial criteria to gauge the satisfaction level are the participation of the engineers in the companies. Hence, the characteristics of satisfaction, the participation approaches cannot be separated beneficial and unfavorable. Some of the engineers may prefer involved in the decision process about the layout of workplace while others may happily doing a routine job. By doing their favours job, it can boost the companies productivity.

The participation from engineers may lead to higher productivity if they fit the tasks given. This will lead to customer's satisfaction thus these engineers will feel happy on their job performance. Due to the positive effects on

the engineer's participation, they should be assigned an important role in the development of products and process. Besides, engineers himself must know the best way how to create the processes they are working with every day which can lead to higher productivity.

Therefore, the findings from this paper should be sufficient to conduct future research on the impact of job stress to job satisfaction among engineers.

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