Determination of Occupational Stress Level and Mental Workload in a Manufacturing Company

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Abstract

Occupational Stress (OS) and Mental Workload (MWL) are some of the common things that employees are facing during their work. These two factors can happen because of responsibilities, rules of the company, lack of support, and the environment. This can lead to a reduction in productivity which is something important for every organization. So, OS and MWL are two important factors that we intended to reduce both of them for a better result in any organization. Many organizations want to decrease the level of occupational stress and mental workload of workers. We seek to investigate occupational stress in the manufacturing sector by establishing its causes and recommending on industrial engineering solutions to reduce it. The prime objective of this study is to investigate occupational stress and mental workload in the manufacturing sector by reviewing the various causes and effects of occupational stress on the sector.

Objectives of this study can be itemized as follows:
- Understanding of OS and MWL and the Measurement of OS and MWL
- Understanding of Perceived Stress Scale (PSS) and NASA-TLX
- Measuring OS and MWL in a Manufacturing Company
- Reducing the OS and MWL for the Company by using IE tools

The team members started by understanding the concept of MWL and OS and their measurements by doing literature reviews to know how may affect the performance. And after the investigation of MWL and OS, we decided to use the NASA-TLX to measure the MWL and PSS-10 to measure the OS of the decision makers in a manufacturing company. Also, we constructed NASA-TLX and PSS-10 based surveys to identify whether decision makers are facing MWL and OS or not. Then these surveys were distributed to all of the decision makers, in the manufacturing company. Then After collection of surveys from 32 participants, analysis of the surveys for MWL and OS for 32 participants are done by using Excel. We found out that Company's Stress level was moderate because they had a score of 20.06 in PSS-10, and their MWL level was high because they had a 50 NASA-TLX score. In addition, we found out that the highest stressors in the Company were "too much work", then "lack of career progression".

Keywords
Occupational Stress, Mental Workload, NASA-TLX, PSS-10

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