

Abstract

The Objective of this independent study is to apply the technique of line balancing in order to increase process efficiency of the case study. The case study is a process of slide rail car seat manufacturing. Based on the initial study, the process has 8 Stations. In each station, the process is divided into work elements. Each work element is time-captured 10 times. With the significant level at 0.05, the appropriate time capture number is calculated. Some work elements may require more time collections and they are captured. Standard time of each work element is calculated and the total standard processing time is 199.84 second. The process efficiency is 81.34 percent and the balance delay is 25.63 percent. To balance the process, precedence table and diagram are constructed. Two line balancing techniques are applied. The first proposed means is rank position weight method and the second is largest number of following element heuristic method.

The result shows that the production efficiency is 79.50 percent or increased by 1.87 percent, the percentage of loss of balance is 20.49 percent or decreased by 5.14 percent, and production rate is 164.23 items or increased by 6.78 percent. The second methodology shows the result as follows. The production efficiency is 87.05 percent or increased by 5.71 percent, the percentage of loss of balance is 12.94 percent or decreased by 12.65 percent, and production rate is 179.82 items or increased by 16.91 percent. Therefore, the second methodology is more appropriate. Furthermore, the number of employees is decreased by one person.