

ABSTRACT

Production is an important activity for manufacturing industries. This activity will be effective and efficient if the flow of the material in production floor runs fluently. The smoothness of the material removal will make the completion time of product faster. High competition among the manufacturing industries forces them to make the material flow shorter. This can be done by arranging the layout of machines. PD Gasing Lestari is one of many furniture industries on Palembang city, makes some products based on the center industry's order. The products have much variations so the material flow will be very high and the cost will be increased. The distance between machine is far enough so the cost of material handling will be increased too and bigger.

Layout of group technology system with Similarity Coefficients and Rank Order Clustering method are used to make the group of machine. The efficiency of the group of machine from Similarity Coefficients method is better than Rank Order Clustering method, so Similarity Coefficients method is chosen as the best way to solve the layout problem at PD Gasing Lestari. This method will produce three groups of machines. The groups is shown in code and they are 3-4-2-1-5-6, 15-17-9-16-11-8-10-13, and 7-12-14. This method reduces the flow of material movement. At the beginning, it is 5.713.094,1 and it becomes 4.570.606,1 after using the method. The same thing happens to the cost of material movement which is 81.468.721,87 in the beginning and becomes 65.176.842,99. This method is successful to decrease the material flow and the cost in the amount of 20%, so the group technology layout is proper to be applied.

Keyword: Group Technology, Similarity Coefficients, Rank Order Clustering, Material Handling Cost.