

## **ABSTRACT**

PT. Kukuh Tangguh Sandang Mills is one of many companies that engaged in textile manufacturing. This company produces cloth from cotton and polyester as main materials and a few other materials according to customer's demand. As one strategy to remain competitive, PT. KTSM should be looking for someways to improve productivity, and that way is to save on production costs. To save on production costs alone, there are lots of ways. One of them is minimizing the costs that related to the displacement of material and manufacturing facility layout.

From the observations, PT KTSM especially spinning department, does not have an efficient manufacturing facilities layout, it is seen from the location of several machines that have not been arranged properly. One of the parameters of a good layout is the minimum cost of material handling. Meanwhile, to minimize material handling can be seen from the moment of displacement which is calculated by multiplying the distance and frequency of material movement between facilities. In this study, manufacturing facility layout is made based on product type layout (product layout). Before preparing the new layout, it takes the initial layout, from to-chart, move cost-chart which becomes input for CRAFT algorithm. CRAFT algorithm in this research contained in the software named WinQSB.

Through this research, can be obtained the layout design of more efficient manufacturing facilities, it can be seen from the movement moment which can be reduced up to 19.71% in the proposed layout. It is certain that can be potentially save the company's total production costs if they see the results of the research that material handling costs and related to the layout is 20-50% of production costs, which means that the proposed layout can save 4-10% of production costs in each month.

**Keywords:** layout, CRAFT algorithm, movement moment