

ABSTRACT

CV Berkah is one of the home industry in Yogyakarta which produce several kinds of bread with make to order (MTO) production system. The absence of definite rules that govern the sequence of jobs result in jobs processed based on corporate habits. Almost all production processes use human labor but the amount of labor is limited so that workers often experience overtime. However, in reality there are still unemployed workers in some work stations because of waiting for materials that are still processed in previous work stations. Therefore, it is necessary to arranging appropriate procedures or methods to allocate labor, so as to avoid idleness during normal working hours and no excessive overtime required with minimal makespan

This research proposes scheduling method with priority rules Short Processing Time (SPT) and Longest Processing Time (LPT) as decision to prioritize the job's sequence. This priority is chosen in processing order to provide faster result so as the result of the maskepan is smaller than the process of production which is undertaken by the company. Then, allocation of the labor is done based on the calculation of labor's needs at each work station.

The method used by the company to produce makespan 728.48 minutes while the results showed that the model with SPT priority produce makespan of 695.47 minutes and the model with the priority of LPT produce makespan of 649.6 minutes. Models with SPT priorities are preferred because it can provide idle time, overtime and lower overtime costs compared to LPT priority models and company methods. Validation is done by comparing makespan, idle time, overtime and overtime cost toward the change of production's amount and production's start time.. Validation results show that the model is valid and not affected by changes of variables and parameters.

Keywords: labor allocation, multifunctional, flowshop, makespan