CHAPTER 2

LITERATURE REVIEW

Suhendri (2005) has done the research about scheduling at PT. Aneka Adhilogam Karya. He used operation splitting for the research to reallocate the machine's load. The objective is to minimize the makespan.

Putro (2005) has done the research about flow shop scheduling with parallel machine by using Aslan's Frequency algorithm. The objective of the research are develop the Aslan's Frequency algorithm in flexible flow shop case, and compare the performance of Aslan's algorithm to SB-LS (shifting bottleneck – local search) in makespan minimization.

Rinawati (2007) has done the scheduling research at PT Budi Manunggal Yogyakarta. The objective is to minimize the makespan by comparing the makespan from several size of lot size to the company initial lot size.

Sari K.A. (2008) has done the research about the effect of product structure complexity and lot size on makespan minimization in multilevel product scheduling. Product structure used is 2 levels of product structure with maximum number of parts are 5 in each level.

Lestianingsih (2008) has done the research about the effect of product structure complexity and lot size on makespan minimization in multilevel product scheduling. Product structure used is 2 until 5 levels

of product structure with maximum number of part is 1 in each level.

Sari M.P. (2008) has done the research about the effect of product structure complexity and lot size on makespan minimization in multilevel product scheduling. Product structure used is 2 until 5 levels of product structure, maximum number of parts are 2 in each level.

Carolina (2008) has done the research about the effect of product structure complexity and lot size on makespan minimization in multilevel product scheduling. Product structure used is 3 levels of product structure with maximum number of parts are 3 in each level.

Hapsari (2008) has done the research about the effect of product structure complexity and lot size on makespan minimization in multilevel product scheduling. Product structure used is 3 levels of product structure with maximum number of parts are 4 in each level.

Yanti (2009) has done the research about the effect of product structure complexity and lot size on makespan minimization in multilevel product scheduling. Product structure used is 4 levels of product structure with maximum number of parts are 3 in each level.

The similarity among those researches is the objective. All the objectives are the same, which is makespan minimization.

The difference among those researches is Suhendri (2005), Putro (2005), and Rinawati (2007) are case study researches in a company. But the other researches and this research are literature study which using product structure combination, lot size alternative and setup and run time variation to achieve

a goal. The main goal is to complete the long term research project of the Production System Laboratory of UAJY about the effect of product structure complexity and setup time-run time ratio in makespan minimization on multilevel product scheduling.

This research has the same purpose with Sari (2008), Lestianingsih (2008), Carolina (2008), Hapsari (2008), and Yanti (2009), which are to minimize makespan in multilevel product scheduling and find out the effect of product structure complexity to optimum lot size. The differences are this research uses 4 levels of product structure with maximum number of part are 4 in each level, and the number of item produced is 45.