

ABSTRACT

PT Kereta Api Logistik is a logistics company that uses railway freight as a mode of transportation. One of the business units owned by PT Kereta Api Logistik is ONS (Over Night Services) is a dedicated railway in retail transportation who have route from Jakarta Gudang (JAKG) to Pasar Turi (SBI). The weakness of the rail transportation mode is that there are transshipments between modes in this case the loading and unloading costs, loading, and unloading labour costs have the greatest proportion among other components, which is Rp. 424.835.197 of the total loading and unloading operational costs. Therefore, the purpose of this study is to minimize the total operational costs of loading and unloading by allocating the appropriate number of loading and unloading workers. By using the discrete event simulation approach and conducting simulation optimization to generate a feasible solution, the total operational costs of loading and unloading can be minimized with the existing costs of Rp. 424,835,197 while the proposed conditions resulted in a cost of Rp. 344,094,380 or an operational cost decrease of 11%. In this study it is also known that the appropriate tariff based on activity and operational costs using activity based costing the tariff are Rp. 15.170 for JAKG station, Rp. 10.046 for the SMT station and Rp. 16.957 for SBI stations.

Keywords : Discrete Event Simulation, Simulation Optimization, Activity Based Costing, Loading Unloading