ABSTRACT

Distribution is one of the most important parts of logistics activities. In the distribution process, it can be done through outlets/retailers that have been distributed according to the distribution area. PT KSA is one of the distributors with a fairly wide distribution area. In the division that handles the distribution of Kao Indonesia products, there are 2470 retailers who work with PT KSA. However, in 2021 the division based on the report on the results of monitoring product distribution from January to October 2021 has not been able to achieve its product distribution target. There are several reasons for not achieving these targets, one of the reasons is the less maximized working time in promoting and distributing Indonesian Kao products. From the problems that occur in the company, in this final project the objective is to design a schedule for salesman visits to improve the distribution of Kao Indonesia products at PT Kunci Sukses Abadi.

In an effort to achieve this target, in this study a salesman visit scheduling design was made by determining the order of the visits. Determination of this order aims to minimize the distance and travel time that will be used by the salesman by maximizing the available working time each day. The concept of Traveling Salesman Problem is used in this study by using the Integer Linear Programming model. The design stage is carried out starting with observations at PT KSA and using a literature study in accordance with the problems that exist in the company. Determination of the design specifications that will be made based on engineering standards and realistic limits. After determining the design specifications, the author begins to collect data. The data collected is based on two aspects, namely the customer and the company. After the data has been collected, the writer starts the design process, starting with calculating the distance and travel time in each area with the help of Google Maps. Followed by analyzing the distance results by sorting between the closest distances and after that data processing that has determined the objective and constraint functions by running assisted with the VRPy solver. The last process in the design is calculating the distance and travel time at the output of the solver. The results of the design are verified against the design specifications and validated to the

company's stakeholders, namely the supervisor of the Kao Indonesia division who is responsible for product distribution.

The existing condition of the company only determines the order of visits in the morning before the salesman runs his job. It really does not maximize working time every day. The design results obtained are in the form of a visit route sequence in each coverage area. The route is used as a reference to determine the needs of salesmen in each coverage area, which later the route will be used in 24 working days. The Tangerang City area has 5 newest proposed routes, South Tangerang City 3 routes and Tangerang Regency has 11 new proposed routes which are divided into 3 teams. The proposed route will be used in salesman visit activities. The arrangement of the order of these visits has an impact on the effective utilization of labor which aims to increase the achievement of product distribution.

This final project is to design a route sequence in scheduling a visit by a salesman. In implementing the results of the proposed improvement plan, the company must know the possibilities that occur and the things that need to be anticipated by the company because it can happen that the company needs to regulate the available salesmen in implementation or recruiting if the available salesmen are still used but there are still problems in the distribution of their products, As a result, companies need to spend more to recruit human resources.

Keywords — Distribution, Scheduling, Integer Linear Programming, TSP