

ABSTRACT

In the world of fashion, especially in Indonesia, the development of the fashion industry has become a significant phenomenon. According to the State of the Global Islamic Economy report in 2022, this is supported by data that the Muslim fashion industry in Indonesia grew by 18.2% with total consumption reaching Rp300 trillion. PT XYZ has a wide variety of hijab and gamis products with a variety of color choices. Product distribution by PT XYZ uses three distribution fleets, namely Daihatsu Gran Max Box. The distribution consists of Jember City and Regency, Lumajang Regency, Malang City and Regency, and Banyuwangi Regency. In addition, the lack of efficient distribution route planning results in mileage and results in a long duration of distribution time. To overcome this problem, the TSP (Traveling Salesman Problem) method is used to design an optimal distribution route in this problem, namely a fleet that distributes to several outlets / retailers once and then returns to the Company for that requires the shortest distance traveled in distribution. Brute force is an easy method so it is likely that this method can solve all problems by choosing a solution from all possible combinations of distribution routes. The result of using this method is an increase in the efficiency of the proposal resulting in a decrease in average mileage by 14% with details of fleet 1 which is 28% or 39 Km, fleet 2 which is 0.6% or 3 Km, fleet 3 which is 15% or 47 Km and of this value is already below the mileage on the Actual route. Based on the proposed route, it resulted in a decrease in average duration of time by 14% with details of fleet 1 by 28% or equivalent to 58 minutes, fleet 2 by 0.6% or equivalent to 8 minutes, and fleet 3 by 15% or equivalent to 41 minutes and of this value is already below the distribution cost on the actual route.

Keyword: Fashion Muslim, Traveling Salesman Problem, Brute Force, Distribution Mileage