

## **ABSTRACT**

*Transportation plays significant role in supply chain sector. Transportation is the movement of goods from the source of goods or shipping point to the destination or customer in order to fulfill demand. Optimize the transportation sector will make a huge benefit since transportation cost significantly drives the cost of supply chain. PT XYZ Karawang handle the distribution of ceramics from PT ABC to Jabodetabek area using the company vehicle and sometimes rent several vehicles to fulfill the demand in Jabodetabek area. PT XYZ has to achieve a target that they set for every month. However, there are only 4 months in a year which satisfy the company. Transportation costs that comes from fixed costs, fuel costs, toll fees, vehicle rent cost, and other tentative costs that plays a big role in this circumstance. This research aiming to solve the distribution route design in order since this cause has a huge effect to the symptom to occur.*

*Optimizing the distribution route can be solved by using Vehicle Routing Problem approach with the characteristics of VRP with time windows, VRP with heterogenous fleet, VRP with multiple products, VRP with multiple trips, and VRP with split delivery.*

*Keywords: Transportation, VRP with time windows, VRP with heterogenous fleet, VRP with multiple products, VRP with multiple trips, VRP with split delivery.*