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ABSTRACT

Effective delivery system is one of the main goals of every dealer. Based on this maxim, this study looks into a more efficient alternative delivery system of a specific beverages and liquor products dealer named EGR Trading. Being an authorized distributor of different beverages and liquor from Coca-Cola Products, San Miguel Corporation and other suppliers, EGR is identified as one of the dealers that have the highest number of retail outlets. Determining how effective EGR Trading's delivery system is, through analyzing the distance travelled in every route for each designated area, is what the main focus of the study.

Specifically, the study aims to:

1.   Determine the existing delivery system of the EGR Trading;

2.   Develop a model using MTSP with the help of TORA; and

3.   Analyze the existing system and the new model in terms of: (a) the route of delivery; and (b) the distance travelled by each delivery truck.

The researcher identified the existing delivery system of EGR Trading to its retail outlets within Dasmariñas City particularly in San Agustin 1, 2, and 3, Amuntay, Villa Catalina Subdivision, Villa Luisa Subdivision, Dasma Executive Village, City Homes Resortsville Subdivision, Solar Homes Subdivision, Green Breeze, and Langkaan 1 and 2. An interview was also conducted with EGR Trading personnel and essential data such as existing vehicles, existing delivery route, dealer's map location, outlet's map location, and the length of each route were gathered. The data was analyzed

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with the help of TORA, a software that identifies the shortest distance from one retailer to another, and by applying Multiple Travelling Salesman Problem (MTSP), that aims to visit each retail outlets exactly once without repetition, to determine feasible routes.

An alternative delivery route for the three vehicles used by EGR Trading were identified that would result in reduced distance from one retailer to another in the same area as its total distance from and to EGR Trading in terms of their designated areas. The researcher used the same schedule of the three vehicles to conceptualize an alternative route in the context of Travelling Salesman Problem (TSP), thus a prospect that a reduced distance may be achieved using an alternative route in some of the areas covered. Based on the outcome of the study, the combination of the existing system and the alternative one is perceived to be more efficient than choosing the existing and the alternative route separately. Therefore, the objective of reducing the total distance of travelling might be attained in the conceptualized hybrid.