



## **Abstract**

This thesis investigates Cost Mitigation in outbound distribution of beverage industry. The increasing cost of fuel and maintenances of trucks made the requirement of cost optimization in outbound logistics. As a beverages manufacturing company, Coca Cola Beverages Sri Lanka has to be competitive by reducing cost of distribution while maintaining the service level.

Analysis carried out using secondary data that obtained from Sales reports and SAP system. And high demand fluctuations have been extracted which directly influence to the cost of distribution. Although company sought to optimized distribution operation, focus of trucks allocation has not been rational. Because company emphasize to deliver shipment, based only on distributor order without considering average demand of particular region. Thereby high number of small trucks travels to the distributors in a same region instead of consolidated shipments in a high capacity truck. So evaluating this scenario, decision has been taken to create systematic way for truck allocation by cost comparison of different capacity trucks depending on the mileage.

Therefore, to mitigate cost of outbound distribution, mathematical model has been developed by using Integer Linear Programming. With using reliable sources to collect the data by assuring confidentiality of the information. Software assistance taken by Lingo 13 optimizer to solved this mathematical model.

Lastly, Author has been stressed the important of uses of mathematical model for optimized cost of distribution by presenting cost reduction over 18% compared to current scenario.