

Freight Vehicle Movement Pattern on National Roads in Sri Lanka

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Transportation in Sri Lanka is mainly based on the road network which is centered on Sri Lanka's capital, Colombo. It is reported that over 95% of the freight movements are taking place on roads. However, majority of the studies focuses on passenger transportation and minimal literature available on freight transportation in Sri Lanka. Objective of this paper is to analyze the freight vehicle movements in Sri Lanka in various aspects such as vehicle type, type of commodity, load and capacity.

This study uses the roadside origin and destination survey data collected from 35 locations all over the country by the Transportation Engineering Division of University of Moratuwa. First the data from the 35 locations were analyzed qualitatively and quantitatively to find which type of vehicle mostly uses for freight transportation and the type of commodity highly distributed and find whether there is any correlation between commodity type and the type of vehicle and loading patterns.

Next part is, preparing a combined origin and destination matrix to find the freight trip distribution pattern. When preparing combined origin and destination matrix at Divisional Secretariat Division (DSD) level, it is found that most of the cell values are zero. It may be due to inadequacy of sample sizes or there is no freight trips during the time of data collection or those trip may not be going through the selected survey locations.

Hence, the combined origin and destination matrix was prepared for District level, It is found that 69% of the freight vehicles are medium goods vehicles while light goods vehicles and multi-axel goods are 19% and 6% respectively and remaining 5% are heavy goods and tractors.

Except within the Colombo district trips most of the medium goods vehicles trips are moving from Gampaha district to Colombo district.

When considering the commodity type it is found that 38% are empty goods vehicles, 10% are construction materials the remaining 14% are perishable and other agricultural products and the remaining 38% are other types of goods.

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It is also found that 46% are empty loaded vehicles, 25% are fully loaded and remaining 29% are 1/2 loaded, 1/4 loaded and overloaded vehicles.

With respect to the total freight vehicle combined matrix, it is found that 36.9% trips are generated from Colombo district and 53.2% trips are attracted to Colombo districts.

Finally it is found that most of the perishable goods are fully loaded and medium goods vehicles are mostly used to transport the perishable goods.

Key words: freight vehicles, Origin and Destination, Goods transport by road, Types of freight vehicles, Commodity types