**PERFORMANCE ANALYSIS OF ROUND ABOUTS USING EMPIRICAL METHOD FOR INDIAN TRAFFIC SCENARIO**

**ABSTRACT**

With hike in road traffic due to globalization, it has become a necessity to develop a transportation network which could handle the present as well as the future traffic efficiently. To do so, proper designing and analysis of various infrastructures is to be done. One such infrastructure induced in road network to increase the efficiency of intersections by reducing the delay is roundabouts. Presently, as such no robust model is available for Indian traffic conditions to determine the performance of roundabouts. So, an attempt has been made to develop a model to determine performance of roundabouts based on capacity. From the existing global models, it was observed that the geometrics of the roundabout played a crucial role in addressing the roundabout capacity. Thus, with this aspect as foundation, a model for entry capacity was developed for heterogeneity in Indian traffic. For modelling, data from various roundabout with varying geometry and flow properties were selected for including affect due to variations. In all, five geometric elements were observed to have significant impact on capacity. The degree of saturation, determined by taking ratio of the existing mean flow values and estimated capacity was considered as parameter to determine the level of service thresholds using K-means clustering. Most of the entries were found to work at capacity flows, indicating scope for better design aspects. The comparison of developed model with existing models showed that the UK and the Jordan model underestimated the capacity as compared to the developed model