Abstract

Public Transit Systems play an important role in transporting people in urban areas. Hence there is an increasing need for the design of an efficient route network design and fleet size allocation of the transit units among the routes. An efficient route network design and fleet size allocation is one which minimize the travel time of passengers, number of transfers required for the passengers to travel from their origin to their destination, and the waiting time of passengers at the stop while maximising the total number of people who are served by the transit system. This study attempts to arrive at an efficient route network design and fleet size allocation that serves the above mentioned criteria using principles of Genetic Algorithm. The developed model is tested on the benchmark network from Mandl (1979); to check the efficiency of the model the results were compared with results obtained by other researchers. The results indicate that the proposed model outperform the other models. The model is also tested on a bigger network which is based on Kanpur city, India. The proposed model gave promising results when applied for the bigger network also.