

Model Scheduling with Dynamic Trip for Public Transportation

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Abstract

The usual vehicle scheduling problem is a static vehicle scheduling problem (S-VSP) problem where the scheduling problem assumes a fixed travel time. While the traffic situation is crowded in urban areas, can cause travel time is dynamic. This may result in delays in departure hours of existing public transport. Therefore, it is necessary to make a vehicle scheduling by considering the dynamic situation. This study will discuss the problem of scheduling public transport vehicles taking into account dynamic travel time or dynamic vehicle scheduling problem (D-VSP) uses a mathematical model in the form of quasi-assignment issues. Based on the research, it can be concluded that the scheduling of public transportation of city which is a dynamic vehicle scheduling problem (DVSP) problem can be modeled as quasi-assignment problem and solved by auction algorithm approach. If implemented on the issue on the route under investigation with some assumptions made, then the results obtained are 38 vehicles with a total operational cost of \pm \$ 800,- each day. Despite the addition of vehicles, the solution remains optimal due to losses in passenger waiting time is not long. This can benefit the company because it can get long-term of customer loyalty.

Keywords: Dynamic, Scheduling, Model, Transportation