OPTIMIZATION MODEL OF TOLL PLAZA USING A COMBINATION OF QUEUEING AND SIMULATION

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Abstract

In the present paper, we calculated the average of data collected from different toll plaza. A combined queueing and simulation study was used for optimization and comparison of data by QMS (Queueing Model Simulator). Finally, efforts were made to find out, which type of the payment system is useful to reduce the queueing length on the toll plaza. A hybrid approach of simulation and queueing theory proved to be a powerful method in analyzing the queueing processes of the toll plaza. This approach combined the insights from queueing theory provided the conceptual frame work and limited the number of variants to be examined, while simulation was used to compare and evaluate the variants.

Key Words: Queueing model, Simulation, Optimization model, Highway toll plaza, Traffic capacity, queueing model, simulation.