Examination of Operation Quality for High-frequent Railway Operation

The examination of operation quality for high-frequent operation requires other approaches than the typical evaluation of punctuality (trains on time) and reliability (operated trains). This is because passengers in high-frequent railway systems do not necessarily notice train delays as they just take the first train in their direction. The article examines four different approaches to examine operation quality for high-frequent operation that are based on the experiences of the passengers. These approaches are the service frequency of the operation, travel time extension, a combination of the service frequency and travel time approaches, and passenger delays. The service frequency and travel time approaches are simple measurements with low complexity and complement each other. Therefore, the article recommends combining the service frequency and travel time approaches to get a more accurate measurement. However, if an even more accurate measurement is wanted, the article recommends using the passenger delay approach. For the passenger delay approach, the article recommends using a 3rd generation passenger delay model since it is the most accurate type of model and it can be combined with railway operation simulation software. Combining the passenger delay model with simulation software gives the possibility to forecast future infrastructure and operation scenarios which make it possible to improve the planning.

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