Computation of a Suburban Night Train Timetable Based on Key Performance Indicators

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Timetable evaluation can be based on a set of key performance indicators. This article presents six essential key performance indicators: Fixed interval service frequency, direct connections, transfer waiting time, use of dedicated rolling stock, dedicated train personnel, dedicated tracks and travel time. A short description and specific calculation method is given for each of these. The article recommends three different approaches for dividing the railway network into sections of analysis in regards to the key performance indicators. Three timetable variants for suburban night trains in Copenhagen are evaluated. Each timetable variant was created with a different performance focus. Values for each of the six key performance indicators are calculated and an average value is found for all timetable variants. It can be concluded that the actual implemented timetable receives the highest scores, but a clear picture of which timetable variant is best is not achieved. To get a clearer picture the introduction of weights is recommended both for the indicators as a whole and in the specific calculation methods. A prioritization of the selected key performance indicators is essential and weights in form of e.g. passenger numbers are needed in the specific calculations.

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