Which uncertainty is important in multistage stochastic programmes?: A case from maritime transportation

Given that the scope of stochastic programming is to suggest good decisions and not to estimate probability distributions, we demonstrate in this paper how to numerically evaluate which properties of random variables are more important to capture in a stochastic programming model. Such analysis, performed before data collection, can indicate which information should be primarily sought, and which is not critical for the final decision. We apply the analysis to a real-life instance of the maritime fleet renewal. Results show that some properties of the stochastic phenomena, such as the correlation between random variables, have very little influence on the final decision.

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