Dani Broitman and Yakov Ben-Haim, 2022, Forecasting residential sprawl under uncertainty: An info-gap analysis, *Land Use Policy*, 120 (2022) 106259.

Abstract Spatial planning defines objectives for spatial ordering of a region, together with instruments required to realize them. However, since the future is uncertain, many factors involved in spatial planning are unknown in advance. Scenario-based forecasting is a common way to deal with this fundamental uncertainty. This prospective approach offers guidance to decision makers regarding problems that are likely to appear in the future, and possible ways to manage them in advance. The performance of the forecasting can be assessed in retrospect once the future arrives. However, a method for assessing past management of uncertainty is lacking. This is important because learning from past performance under uncertainty can provide useful insights for the future. These insights can help to design future scenario-based forecasts that are more accurate, and more robust to uncertainty. This paper develops a methodology to combine retrospective analyses focused on past performance with prospective scenario-based forecasting. We use info-gap decision theory to model and manage uncertainty in scenario-based forecasting assessing efforts to contain residential sprawl in The Netherlands. The suggested approach informs prospective scenario-based forecasting, learning from previous experiences regarding their performance and their management of uncertainty and robustness.

Keywords scenario-based forecasting, residential sprawl, Netherlands, uncertainty, robustness, info-gap.

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