

Measuring the baseline sales and the promotion effect for incense products: a Bayesian state-space modeling approach

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Abstract One of the most important research fields in marketing science is the analysis of time series data. This article develops a new method for modeling multivariate time series. The proposed method enables us to measure simultaneously the effectiveness of marketing activities, the baseline sales, and the effects of controllable/uncontrollable business factors. The critical issue in the model construction process is the method for evaluating the usefulness of the predictive models. This problem is investigated from a statistical point of view, and use of the Bayesian predictive information criterion is considered. The proposed method is applied to sales data regarding incense products. The method successfully extracted useful information that may enable managers to plan their marketing strategies more effectively.

Keywords Bayesian method · General state-space models · Marketing