

Hotel price forecasting using time series. An exploratory research

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Abstract

This paper proposes the use of time-series-based forecasting methods to identify the main predictor variables of prices in hotels located in the city of Barcelona. However, in contrast to previous works, the research focusses on online prices, i.e., the prices set by hotel companies' revenue management algorithms, rather than purchase prices. For the training of the time series, a dataset of hotel prices offered on Booking.com with a horizon of zero days in advance has been used. In addition to the price series itself, a set of exogenous variables has been included to improve the predictive capacity of the model. As a result, the relative importance of the lags of the endogenous variables and of the exogenous variables, as well as the prediction error, have been obtained. The lag is the main variable in the determination of the forecast and, more specifically, those referring to one day-, one week-, and one month-lags.

Keywords: *Hotel price; Time series; autoregressive models; Revenue management.*

This publication is part of the project TED2021-130406B-I00, funded by MCIN/AEI/10.13039/501100011033 and by the European Union "NextGenerationEU"/PRTR, and the authors would also like to thank the company BeonX, S.L. for their collaboration