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TITLE: An analysis of the impact of implementing Revenue Management Systems on hotel operational performance

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ABSTRACT

OBJECTIVES:

There are few empirical studies on the effectiveness of Revenue Management Systems (RMSs) as a source of hotel performance improvement. We attempt to fill this gap by identifying the extent to which the adoption of RMSs improves hotel performance, either by affecting room occupancy (RO) or average room rate (ARR), and eventually increasing its revenue per available room (RevPAR). In addition, studies suggest that Yield Management is an expansive strategy that allows hotels to increase output (revenue in accommodation), while holding inputs (labour) constant, thus improving labour productivity. Furthermore, given that RMSs allow hotels to make more accurate forecasts of future levels of demand, these systems allow the hotelier to match that demand with appropriate levels of staffing in the different areas of the hotel. Thus, an additional hypothesis to be tested in this paper is that the use of RMS has an additional positive impact on hotel average labour productivity.

METHODOLOGY:

The study used a data sample of 106 chain hotels with a rating of three or more stars located in Andalusia (Spain). Given that our interest is to determine whether hotels using RMSs outperform non-user hotels, this analysis can be conducted using a linear

regression model in which the dependent variable (a specific hotel's performance indicator) is explained by a set of dummies variables representing various relevant attributes of a hotel. In particular, a dummy variable is included in the equation to control for whether a hotel is an RMS-user or not. Thus, a t-test on the individual dummy coefficient for RMS-users provides us with an estimation of the difference in the mean value of the dependent variable between hotels using RMS and non-users.

Four different performance indicators can be considered as a model's dependent variable: room occupancy (RO), achieved daily room rate (ARR), average revenue per available room (RevPAR), and labour productivity. However, given that the relative contribution of an RMS to improvement in hotel performance may differ in periods of low and high demand, the mean values of the first three performance indicators in the high and low seasons have been considered as alternative dependent variables in the estimations.

EXPECTED RESULTS:

The results obtained suggest that the use of RMSs by hotels has a significant impact on performance, allowing establishments to reach higher levels of occupancy in both high and low seasons. However, this is not the case when the indicator of performance considered is the ARR. In this case the coefficient corresponding to hotel category being the only one significantly different from zero. This means that, in both seasons, hotels that use an RMS do not achieve a higher ARR than non-users, while holding everything else constant.

Considering *RevPAR*, the estimation results indicate that the effect of an RMS on performance is marginally significant only in the low season, when presumably the RMS leads to a higher occupancy rate. Finally, the estimation results show that there is no evidence that the employment of an RMS has a significant effect on labour productivity.

Note that the way RMS act as hotel performance levers might differ in low demand and high demand periods. However, these results seem to refute the common belief that RMSs lead to performance improvements through better management of the ARR,

especially in high demand periods. If the implementation of an RMS involves controlling the trade-off between rate and occupancy, these findings suggest that the effectiveness of an RMS as a tool for improving performance is mostly achieved in hotels in Andalusia through better management of occupancy rather than by achieving higher rates. This is not a surprising result if we take into account that the main objective of the implementation of a RMS is to maintain occupancy at an acceptable level, specially, when demand is low.