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Advance booking and hotel price variability online: Any opportunity for business customers?

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ABSTRACT

Is it possible for business customers to effectively adjust their purchasing strategies, as a response to revenue management? We consider daily online best available rates for a panel of 357 hotels in Milan and Rome, up to an advance booking of 29 days.

We analyse price trajectories, finding that dynamic pricing strategies with no established trend towards the arrival date are prevalent, with a predominance of decreasing trajectories for lower-scale hotels in Milan during fairs. We show that price levels are explained by a variety of structural determinants. We quantify the effects of advance booking, room quality, services, competition, seasonality and fairs, underlining their different importance on leisure and business destinations. Other features, such as breakfast and refunding options, appear to be used as marketing tools to differentiate rooms, keeping a low pace in price adjustment. Managerial implications are discussed, with reference to both corporate travel departments and hôteliers.

1. Introduction

In light of the recent diffusion of online reservation systems, price dynamics has acquired a relevant managerial role. Nowadays, pricing algorithms are able to determine room rates in response to changes in demand patterns, also taking into account the length of the booking horizon, the inventory level and the operational cost (Guo, 2013). As a consequence, online daily Best Available Rates (BAR) display a great volatility also in locations where the seasonal effect is not dominant, such as metropolitan areas. The interest of academics for online price dynamics has grown in different areas other than (revenue) management. For example, tourism economics has deepened the link between price dispersion and market structure (among others Dai et al., 2013), while in the areas of operational research, computer science and statistics, a great attention has been revolved to revenue management practice and algorithms (e.g. Grauberger and Kimms, 2016). Marketing literature considers price dynamics both one of the main determinants on accommodation selection decisions (Hung et al., 2010), and one of the most powerful tools to expand the tourism demand to new customers with a relatively low willingness-to-pay (Clavé et al., 2015). This literature has also focused on the consumer emotional response to price variability (i.e. acceptability and fairness perception, Kimes, 2010) but, unfortunately, an accurate response assessment still has to be addressed specifically to business consumers (Gustafson, 2012 is a valuable exception). This point is important in light of the theoretical implications related to the difference between consumers (the travellers) and customers (the corporate travel departments), that is frequent in the corporate travel segment (Guizzardi et al., 2016). In fact, the emotional response of surveyed consumers does not necessarily reflect the priority of customers who need to optimize the overall result of the business travel management.

From the point of view of a frequent customer, such as a Corporate Travel Department (CTD), a high price variability implies at least two negative setbacks. First, it is harder for CTDs to steer negotiations, which often appear less convenient than fares instantly available on the market. This raises questions about the objective that should be set by the purchaser, and whether it is meaningful or not, for hotels, to guarantee fixed (corporate) rates. Second, it reduces CTD reputation, diminishing the importance of intermediation, as travellers can contest both the CTD manager purchasing ability and the travel management company role, comparing the room fare provided by the CTD to the BAR available online at any

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time. Unfortunately, such a comparison is often carried out without any consideration about whether the room quality or the restriction placed on prices (i.e. regarding the refunding policy or the minimum length of stay) are actually the same or not.

Thus, the awareness of being in a market with high price heterogeneity – for the same service – increases the perceived utility of deal hunting, while decreasing the perceived utility of a planned approach, i.e. setting up an hotel programme, establishing corporate fare agreements, or negotiating discount rates. The reduction in importance of *strategic* procurement – in favour of a *tactical* approach – happens regardless the lack of evidence that tactical online deal hunting can actually bring greater advantage than a cost-effective purchasing strategy. In fact, any convenience evaluation can be performed only on at year-end, while the high price dispersion does not allow to consider the realized saving informative in predicting the future deal hunting performance. Consequently, price volatility prevents to use business intelligence (e.g. statistics on previous savings) as a proxy for the future results of any procurement strategy with a strong negative impact on the capability to predict indirect operating costs (and the operating margins).

With this in mind, we aim to contribute to partially cover these theoretical and practical gaps, focusing on the price trajectory behaviour, fixed the hotel and the arrival date, from the point of view of a business customer. It is important, for this customer category, to evaluate if it is possible to establish a strategy to avoid high rates, rather than rely on a tactical approach, which increases the risk of not being able to book the room at the needed date. From a theoretical perspective, this mainly means to discriminate between stochastic and deterministic dynamics and investigate the existence of structural determinants. Thus, we model price trajectories in the days preceding the arrival date and we identify internal and external factors affecting pricing policies established by the hôteliers. Moreover, we aim to evaluate if the actual strategies put into effect by the hotel managers reflect some of the basic principles of the online revenue management (RM), as proposed in the literature.

To this extent, we consider a panel of 357 hotels, almost all rated 3 or 4 stars, in the cities of Rome (224 hotels) and Milan (133 hotels). The two destinations have been chosen in order to compare the behaviour of hotel prices across two different markets: while Milan is almost a purely business location, Rome is characterised by a very strong leisure component. Prices refer to the cheapest available room considering a 29 days booking horizon on the interval from July 1st, 2015 to June 30th, 2016.

The paper is organised as follows. Section 2 reviews the relevant literature. Section 3 describes the dataset while in Section 4 the methodology and the results are discussed. The last section draws the concluding remarks.

2. Literature review

Pricing research was consolidated in marketing in the 60s, with an emphasis on marketing mix and customer orientation (McCarthy, 1960). Tourism literature focuses on pricing controlling for destination and hotel-specific variables, while comparatively few studies have focused on the role played by the customer and, in particular, on the possibility that he could adopt purchasing strategies as a response to dynamic room pricing (Denizci et al., 2015).

Location is one of the most cited pricing determinants. Among others, Thrane (2007) finds that, for hotels in Oslo, the distance to downtown negatively affects room rates, while Lee and Jang (2011) find a positive effect on room rates exerted by proximities to central business districts and airports in the U.S. However, Lee and Jang (2012) theorize that rate-based competition is rather contingent on demand levels; when demand is strong, one would not expect rate-based competition. Sainaghi (2011) confirms the relevance of the centrality within the destination in determine RevPAR of hotels in Milan. Using data from New York, Zhang et al. (2011) found that luxury and mid-scale hotel customers are willing to pay more for a convenient location.

Other studies found that quality differentiation of hotel products determines the room rate dynamics. Abrate and Viglia (2016); show that online reputation is gaining importance over the traditional star rating. Schamel (2012); looking at the Bolzano hotel market, reports a strong relation between hotel room price and quality, measured by both customer reviews and official star rating. The analysis shows a major quality effect for business demand, compared to leisure customers. Lee and Jang (2013); underline that, in the low season, lower-scale hotels use steeper discounts to equalize the utility between downscale and upscale rooms, while higher-scale hotels increase room rates smoothly, to discourage customers from shift toward lower-scale hotels with reasonable rates. In the same line, Becerra et al. (2013); show that lower-star rating hotels – with few services – display higher price variations. Symmetrically, higher-scale hotels (strongly differentiated in quality) or hotels that belong to a branded chain (horizontally differentiated) can charge constant (high) prices, with smaller discount, displaying smaller seasonal price variations, even in sun-and-beach destinations (Espinet et al., 2012). Thus, quality differentiation allows hotels to stabilize price patterns, even in very competitive settings, where introducing innovations has a positive effect on the price at which rooms are sold de la Peña et al. (2016), Lee and Jang (2013); find that, on the Houston hotel market, lower-quality hotels apply deeper discounts in the low season. Moreover, they find that neighbouring hotels engage in price competition regardless of seasonality. Balaguer and Pernias (2013); provide additional empirical evidence of spatial dependence among hotel room rates in the metropolitan area of Madrid, finding a negative effect of competitor density on average fares, weaker at weekends, when leisure consumers become the main segment. Price dispersion is also negatively related to the hotel density, especially if local competitors offer the same quality, as expected given the competitive nature of the hotel market (Dai et al., 2014).

Considering internal factors, hotels have strong incentive to sell all the rooms out by the target day, given the industry characteristics: perishable inventory, short-term constrained capacity, high fixed costs respect to variable costs (Guo, 2013), availability of advance booking, fluctuating demand and proper customer segmentation (Denizci et al., 2015). These features, combined with the growing prevalence of online travel agencies, motivate managers to adjust prices in real time, emphasizing maximization of daily revenues (Wang and Brennan, 2014). Thus, length of stay and the length of the lead time to the end of the horizon become important determinants of the price trajectory, particularly in the business travel segment (Schamel, 2012; Wilson et al., 2015). Hotels operate a segmentation of the room market, considering that there exists a negative correlation between the ability to purchase and the advance between booking and arrival date. In fact, clients with higher spending possibility, in general business travellers, tend to make a reservation on the target day or with a short notice of one or two days (Guo, 2013). This situation induces a trade-off between the strong incentive to sell all the rooms out by the target day and the higher profitability of the rooms sold with a short advance booking. The incentive to sell early also presents a qualitative trait, since hotel managers aim to sell the most expensive rooms first, in order to minimise fixed costs of unsold rooms. Contextually, low-valuation customers are often sufficiently patient to wait for last minute promotional sales, while high-valuation customers have a