ANALYSIS OF HIERARCHICAL COMPETITION STRUCTURE AND PRICING STRATEGY IN THE HOTEL INDUSTRY

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I. BACKGROUND

Strategic pricing is often considered a crucial component of successful hotel operation. It is well-known that hotel managers face an ongoing but important problem of inventory management, that is, fixed upper limit in capacity with a perishable product (Weatherford and Bodily, 1992). Such nature of the hotel industry encourages managers to use price as a strategic lever to optimize hotel revenue in the short run. These price adjustments, also known as revenue management, has received favorable attention in the recent decade by the industry and academia alike.

As the market result of price adjustments is determined not only by consumers' quantity responses to the own price but also their responses to the competitors' price responses (Lee, 2015; Lee and Jang, 2013; Karakaya and Yannopoulos, 2011), hotels' pricing decisions should be based on a rather systematic process that investigates and integrates both sides of the forces affecting price responses. While the majority of the related literature in the context of hotels has focused on the one side of this mechanism – customers' responses to the own prices, less attention has been paid to the other side – competitor reactions to own price changes. Without a good understanding of the market structure that encompasses the competitors' behavior, the industry's solution on strategic pricing can be quite far from optimal. For example, a hotel's discounting effort to attract customers in times of low demand may not succeed if its competitors immediately follow the price cut of the hotel (Eliot, 2013). In this vein, spatially-competing nature of hotels' room rates has become increasingly important research topic in recent years. Price comparison among hotels in the same geographic market has been dramatically facilitated through the internet-based online travel agencies (OTAs), travel review websites with booking/reservation services and meta-search engines rendering little to virtually no search cost of consumers.

II. RESEARCHOBJECTIVES

To this end, the current study adopts theoretical framework of competitive price interactions suggested by Guiltinan and Gundlach (1996). In Guiltinan and Gundlach (1996), it is suggested that firms strategically react in varying ways to competition based on their countervailing power. Countervailing power in this context involves the firm's ability to reduce the extent of harms or damages from competition. A review of the extant literature on firm-specific characteristics and applicable theories lead to identification of several factors that may result in asymmetry in countervailing power among hotels. The current study anticipates recursive patterns in strategic price reactions among hotels varying in the above characteristics.Therefore, this study investigates the possibility of heterogeneous strategic price reactions among hotels to provide empirical evidence on the theory of competitive pricing behaviors and strategic responses in the lodging market. Findings of the study will contribute significantly to the domain of knowledge on lodging management, where relevant empirical attempts are rather scarce. Moreover, the theoretical framework of countervailing power to understand hotels' strategic price reactions is a new theory presented by this study.

III. METHODS

In order to fulfill the objective of the study, three separate sets of data are collected, merged, and jointly analyzed. First, data on hotel prices are collected from prominent online travel agencies (OTAs) using a web crawler. The second dataset includes geographic information of the sampled hotels as well as that of important points-of-interest (POIs). Third, regional economic indicators that may influence the hotels' demand and, in turn, the room rates are collected and merged to the (OTA and shapefile) dataset at the smallest spatial unit possible, to mitigate ecological fallacy.

The short-term tactical pricing and long-run strategic prices are calculated for each individual hotel i (i=1,2,3,…,N) at time t (t=1,2,3,...,T). Two groups of competitors are identified in terms of their countervailing power, based on the number of room, the ownership and operation type, and the operation history. Two systems of panel equations for short- and long-term pricing are respectively drawn and calculated. Considering the distances with each competitor, the spatial correlation is taken into account through the spatial econometric techniques.

IV. EXPECTED RESULT AND IMPACT

The findings of this study will reveal the competitors' impact on hotel pricing strategy both short-term and long-term. The different effects (coefficients) between the two groups of competitors, if exist, will be the evidence of hierarchical competition structure, supporting the asymmetries in countervailing power by hotels. Furthermore, the time-series of data will allow detecting the recursive as well as the non-recursive process of price competition. The findings of this study are expected to contribute both theoretically and practically, by deepening the understanding of competitive market interaction in the context of hotel pricing.

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