The Effect of Short-term Leases on Hotels' Agglomeration and Market-entry Strategies: A Game Theory Approach

HIGHLIGHTS

- Short-term leases affect incumbent hotels' agglomeration benefits.

- Lower agglomeration benefits affect hotels' market-entry decisions.

- Cost leadership is the best market-entry strategy for hotels.

- Homogenization is the second-best market-entry strategy for hotels.

ABSTRACT

Hotel agglomeration has been recognized as a driving force behind the success of tourist destinations. However, little research has delved into the effect of short-term leases on the dynamics of agglomeration. Utilizing a game theory approach, this study fills this gap in the literature by investigating the influence of short-term leases on agglomeration in the hospitality sector. Employing random-effect and logit models, our research reveals significant changes in the capacity of hotels to harness the benefits of agglomeration in the presence of short-term leases. With these altered market dynamics, newly established hotels gain a competitive advantage by undercutting short-term leases in terms of price class. However, inertia or misinterpretation leads mid-price and upscale hotels to choose a different strategy. This study advances our understanding of demand-driven agglomeration and offers valuable insights into the optimal market-entry strategies for new hotels.

KEYWORDS

INTRODUCTION

Agglomeration, the clustering of firms within a specific geographic area, has been foundational for understanding firm behavior in economics and business research (McCann & Folta, 2008). The consequences of this clustering include agglomeration externalities, that is, the effects on firms that simultaneously represent benefits (Kalnins & Chung, 2004) and costs (Mazzeo, 2002). However, the literature shows that the benefits generally outweigh the costs for hotel firms (Baum & Mezias, 1992; Fang et al., 2012; Kalnins & Chung, 2004; McCann & Vroom, 2010), with shared resources, increased visibility, and aggregated demand collectively enhancing profitability (Canina et al., 2005; Woo & Mun, 2020) and guiding hotel location choices (Fang et al., 2019, Feng et al., 2022, Yang et al., 2012;). Moreover, the advantages of agglomeration can extend beyond individual firms to include positive contributions to overall destination development and labor productivity among tourism-related entities (Kim et al., 2021; Yang, 2012).

The rise of short-term leases has disrupted traditional oligopolistic hotel market dynamics (Guttentag, 2015; Mazzeo, 2002), leading to significant changes in tourism destinations (Dogru et al., 2020). Depending on distinct resources, such as operational, marketing, and human resources (Bianco et al., 2024), as well as reduced operational costs (Zervas et al., 2017), short-term leases have affected the margins of established hotel firms, especially lower-end hotels (Guttentag & Smith, 2017). Indeed, such hotels benefit from agglomeration externalities; thus, for example, co-located higher-end convention hotels also attract guests who stay at lower-end hotels (Canina et al., 2005).

While prior research on agglomeration has explored the benefits for hotels (Canina et al., 2005; Woo & Mun, 2020), the effects of short-term leases on agglomeration dynamics remain understudied. This gap in literature is surprising for two reasons. First, short-term leases have become a fixture of the lodging market. Second, agglomeration is a key determinant of a hotel's success, with wide-ranging implications for destination competitiveness and operational performance (Fang et al., 2019; Yang, 2012; Kim et al., 2021). Thus, failing to account for short-term leases limits the capacity to assess profitability and market entry strategies, particularly regarding location.

On the other hand, research investigating hotels' responses to short-term leases has focused on responses at the corporate level (Zach et al., 2020) or the pricing responses of incumbent (that is, existing) hotels to the entry of short-term leases into the market (Chang & Sokol, 2022). However, the manner in which new hotels entering the market are positioning themselves (and should do so) based on the price class of incumbent short-term leases has not been investigated. As a result, it is currently unclear how new hotel establishments should account for short-term leases in their market-entry strategies.

To address these gaps in the literature, we investigate the influence of short-term leases on hotels' ability to benefit from agglomeration and the subsequent effects on their market-entry strategies by seeking to answer two research questions:

1) *How have short-term leases affected agglomeration externalities in the lodging market?*

2) *How have short-term leases affected the market-entry strategies of new hotels?*

To answer these questions, we use a range of random-effect and logit models to analyze a dataset of 4,130 hotel establishments and 135,564 short-term leases operating in Texas. We take a game-theoretic approach for several reasons. First, game theory can serve to investigate competitive interactions among firms (Nash, 1951). Second, a game theoretical view allows for a thoughtful evaluation of changing processes by separating events into stages. Lastly, game theory is specifically applicable to "free riders," firms that utilize their competitors' resources for their own benefit without compensation.

Our findings show that the entrance of short-term leases into the lodging market has had a notable impact on the ability of incumbent hotels to enjoy the benefits of agglomeration and, thereby, altered the established market dynamics. In this new landscape, the classes of newly established hotels except luxury hotels find it profitable to pursue a cost leadership market-entry strategy that involves offering lower prices than the short-term leases in the market. However, only budget and economy hotels have adopted this rewarding strategy; mid-price and upscale hotels have preferred a homogenization strategy, aligning their offerings more closely with those of short-term leases. This strategic decision, which diminishes hotels' ability to gain a competitive advantage, is probably attributable to inertia or misinterpretation of the new equilibrium. Lastly, the market-entry strategies of luxury hotels were not adjusted despite being negatively affected by short-term leases.

LITERATURE REVIEW

Agglomeration

The research on firm agglomeration, or co-location, has examined why competing firms cluster in the same area (McCann & Folta, 2008) and has shown that the agglomeration of tourism providers promotes tourism development (Fang et al., 2019; Yang, 2012). Additionally,

the concentration of skilled hospitality and tourism labor in one region as a result of agglomeration positively impacts productivity both there and in neighboring regions (Kim et al., 2021). The resources deployed by firms create these benefits, which, in turn, are enjoyed by the entire destination, including competing firms (Kalnins & Chung, 2004). Hotel firms also have more direct ways to enjoy the benefits of competitors in the context of agglomeration. For example, hotels that locate close to a competitor with a popular conference center may enjoy part of the demand that the center generates (Canina et al., 2005). Moreover, Chung and Kalnins (2001) showed that independent hotels agglomerating with chain hotels outperform their counterparts that do not, thus demonstrating that knowledge spillover also represents an important benefit of agglomeration.

Consequently, the extent to which tourism firms can access resources through agglomeration has been found to be a determinant factor in location choices. Woo and Mun (2020), for example, found that international hotels entering a foreign market select locations based on access to local knowledge. Similarly, Bianco et al. (2024) found that accommodations that are managed by the same firm can increase their competitive power by locating close to each other because shorter distances enhance knowledge sharing. Furthermore, agglomeration has been found to be among the main determinants when hotels choose locations (Fang et al., 2019; Yang et al., 2012).

However, the distribution of the benefits of agglomeration is not uniform across market participants. Simply put, firms with fewer resources tend to gain more from agglomeration while contributing less to the overall resource pool (Canina et al., 2005). Kalnins and Chung (2004) found that, to obtain the maximum benefit from agglomeration and avoid the shortcomings of excessive competition, hotel firms tend to co-locate with higher-class competitors, which employ

more and better resources, and that luxury hotels prefer to co-locate with hotels of a similar class and avoid clusters already populated by lower-end hotels in order to reduce the spillover of the benefits to competitors.

Agglomeration can also intensify competition, leading to potential downsides such as reduced overall prices (Balaguer & Pernías, 2013). Like the benefits of agglomeration, these downsides do not affect all firms similarly. Rather, the intensity of the competition perceived by single players in agglomerated markets is contingent on firms' similarity (Baum & Mezias, 1992) such that more homogeneous firms within a market in terms of services offered, class, and size face more intense competition (Mazzeo, 2002). Thus, market entry decisions for new hotels – that is, whether to enter a market and the appropriate class – are crucial for lodging firms (Baum & Mezias, 1992).

The prospect of positive and negative agglomeration spillovers from the market entry of a new competitor affects the competitive decisions of incumbent firms. Thus, when a new player enters the market, the incumbent hotels raise or lower prices based on whether its entry is likely to create positive or negative agglomeration spillovers (McCann & Vroom, 2010). Moreover, to deter the entry of new players that may create negative agglomeration spillovers, incumbent hotels may invest resources to build unused capacity. For example, Conlin and Kadiyali (2006) found that some hotels tend to build more rooms than the market demands to deter new entrants. While these studies address the market entry of hotels, it is necessary to reassess the effects of agglomeration for short-term lease properties, which are often managed by individuals with little or no lodging management experience.

Competitive changes with short-term leases

Today, short-term leases are among the accommodation choices in nearly every market. While the professionalization of short-term rental hosts is increasing (Pérez-Rodríguez & Hernández, 2023), as a result of the entry of many new entrepreneurs, the contemporary lodging market differs substantially from the previous oligopolistic market, which was characterized by a few hotel firms operating multiple properties (Mazzeo, 2002). In other words, short-term leases disrupted the traditional lodging market, significantly impacting established hotel firms (Guttentag, 2015). Indeed, several studies have found a negative effect of short-term leases on hotel performance and investigated boundary conditions such as location, unit ownership, and hotel quality as moderators of this effect (Dogru et al. 2020; Zervas et al., 2017).

While, as just mentioned, previous research on agglomeration has documented changes in agglomeration dynamics following the entrance of new hotel competitors into the market (see, in addition to McCann & Vroom, 2010, Baum & Mezias, 1992; Mazzeo, 2002; McCann & Folta, 2008), the current research does not directly address the effect of the entrance of short-term leases. Indeed, while Pérez-Rodríguez et al. (2023) and La et al. (2022) discussed agglomeration as a potential factor to consider regarding the effect of short-term leases on hotels, their studies did not directly investigate it. They suggested that/It seems plausible that the entrance of short-term leases affects agglomeration dynamics, as previously observed with hotels, and that these new entrants benefit from agglomerating with established hotels more than the hotels do. This consideration reflects the main drivers of firms' benefits from agglomeration, namely, resources and prices (Canina et.al, 2005).

In terms of resources, hotels typically offer structured services (e.g., pools, spas, and front desks), emphasize in-person customer service, and directly control their operational and

marketing resources. The human resource organization of short-term leases is generally less structured – often with no direct guest interaction at all – and typically depends entirely on hosting platforms (e.g., Airbnb) for operational and marketing resources (Bianco et. al., 2024). Hence, while established hotels expend resources and effort in attracting tourists to a destination, short-term leases "free ride" by enjoying the increased common demand without contributing to it (Kumar et al., 2011). Furthermore, the fact that, nowadays, short-term leases offer services similar to hotels but often at a lower price (Guttentag, 2015), is another factor in benefiting from agglomeration externalities (Canina et al., 2005).

We argue that the disruption caused by short-term leases not only alters agglomeration dynamics but also compels hotels to rethink their competitive market-entry strategies in this new landscape. To analyze these strategic interactions involving hotels and short-term leases and their market-entry decisions, we employ game theory. This framework provides insights into how the players involved make decisions independently in a competitive, non-cooperative environment and the evolving dynamics of the hospitality industry.

The game-theoretical foundations of hotels' market-entry decisions

Game theory focuses on the strategic interactions among agents (Nash, 1951). In the hospitality and tourism literature, game theory has been used to investigate, for instance, pricing models (Arenoe et al., 2015), asset disposal strategies (Bourke et al., 2020), supply chain strategies (Chen et al., 2021), and the adoption of instant booking by short-term leases (Feng et al., 2022). We postulated that the short-term lease market has created a non-cooperative sequential game. That is, players, in line with Myerson's (1991) definition, compete against each other and make decisions independently rather than cooperating on joint strategies.

Moreover, the game is sequential in that players continuously interact and compete with and react to each other (Osborne, 2004). Accordingly, we formulated theories based on the differentiated Bertrand competition model, which serves to analyze markets in which players compete in terms of both price and product differentiation. We reasoned that this is an appropriate model for the phenomenon under investigation because the players attract customers using price and offers of products and services that are differentiated in some ways (e.g., product attributes, brand, and quality; Simon, 1987).

In line with prior research in game theory and industrial organization (e.g., Mazzeo, 2002; McCann & Vroom, 2010), we adopt a multi-stage, scenario-based framework in which each stage reflects a new set of strategic conditions emerging from earlier outcomes. This approach mirrors real-world decision-making where firms anticipate and respond to evolving market circumstances rather than making one-time, static choices. Accordingly, we examine the hotel market in three stages—before short-term leases enter, after they enter, and upon the subsequent entry of new hotels—to capture how each stage's outcomes inform the strategic behaviors in the next.

Stage 1: Hotels before the entrance of short-term leases (pre-entry stage)

Prior to the market entry of short-term leases, hotels operated in a relatively protected oligopolistic environment (Mazzeo, 2002) characterized by substantial entry barriers such as the high cost of initial investments (Baum & Mudambi, 1995). In this setting, hotels wielded considerable market power, with the ability to set prices well above marginal costs, while at the same time competing for market share against each other (Baum & Mudambi, 1995). According to Nash's (1951) equilibrium concept, no hotel can unilaterally increase its profits by reducing prices. Should any hotel attempt to disrupt this equilibrium by doing so, its competitors would

likely respond in kind, effectively reestablishing the equilibrium. Therefore, each hotel seeks to maximize its revenue through the demand model

$$D_i = f\left(P_i, Q_i, \{P_j, Q_j\}_{j\neq i}, A\left(P_i, Q_i, \{P_j, Q_j\}_{j\neq i}\right)\right) \tag{1}$$

where D_i is the demand for hotel i, P_i and Q_i are its price and quality, respectively, $\{P_j, Q_j\}_{j\neq i}$ represents the effect of the set of choices of market competitors in terms of price and quantity on this demand, and $A\left(P_i, Q_i, \{P_j, Q_j\}_{j\neq i}\right)$ represents the agglomeration externalities that can be captured by hotel i based on the relation between the price and quality of hotel i to the price and quality offered by its market competitors j. Previous studies have tended to find that the agglomeration externalities at this pre-entry stage are generally positive for hotels (for a review, see McCann & Folta, 2008).

Stage 2: Short-term leases enter the market

   With the entry of short-term leases, the market landscape dominated by hotels underwent significant change, with the incumbent hotels being negatively affected (Dogru, et al. 2020; Zervas et al., 2017). We reasoned that short-term lease have affected incumbent hotels not only in terms of price competition but also in terms of their ability to benefit from agglomeration (Canina et al., 2005; Kalnins & Chung, 2004; Woo & Mun, 2020). Therefore, hotels' demand function (Equation 1) can be expanded by $\{P_{STL_k}, Q_{STL_k}\}_k$ to indicate the set of prices and quality levels of short-term listings, which directly affects hotels' demand (Dogru, et al. 2020; Zervas et al., 2017):

$$D_i = f\left(P_i, Q_i, \{P_j, Q_j\}_{j\neq i}, \{P_{STL_k}, Q_{STL_k}\}_k, A\left(P_i, Q_i, \{P_j, Q_j\}_{j\neq i}, \{P_{STL_k}, Q_{STL_k}\}_k\right)\right) \tag{2}$$

However, the general demand function at this stage is also affected by the extent to which short-term leases are able to enjoy the advantages of agglomeration previously enjoyed by hotels. Hence, the agglomeration externality term in our model includes the interaction

$$A\left(P_i, Q_i, \{P_j, Q_j\}_{j \neq i}, \{P_{STL_k}, Q_{STL_k}\}_k\right).$$

As mentioned previously, short-term leases can be seen as "free riders" in that they benefit from a common pool of resources without contributing to it (Kumar et al., 2011). For example, Airbnb hosts do not typically invest in building convention facilities or promoting tourism through destination marketing organizations in the same way that hotels do, but they can benefit considerably when hotels make such investments. Consequently, short-term leases should be able to enjoy the benefits of agglomeration that hotels enjoy (Canina et al., 2005; Kalnins & Chung, 2004), a conclusion supported by the fact that short-term leases gain positive agglomeration externalities from other short-term leases (Xie et al., 2020).

Short-term leases, with lower operational costs and distinct, personalized experiences, have positioned themselves as competitive alternatives to traditional hotels (Guttentag, 2015). Consequently, the general benefits of agglomeration that hotels gained by co-locating with higher-class hotels in a market (Canina et al. 2005; Marshall, 1920) and by luxury hotels co-locating with other luxury hotels (Kalnins & Chung, 2004) are now eroding because short-term leases offer comparable accommodations at similar or lower price points.

Lastly, the disruption provoked by short-term leases to the existing hotel market caused them to be seen as legitimate competitors (Bianco et al., 2024; Guttentag, 2015). Thus, their effect on hotels' agglomeration externalities depends on their levels of price and quality

(P_{STL_k}, Q_{STL_k}), as is the case with their hotel counterparts. Accordingly, we propose the following hypotheses:

H1: Agglomeration positively affects hotels' performance.

H2: The positive effect of agglomeration on hotels' performance is negatively moderated by the number of short-term leases at the same price level in the market.

Stage 3: New hotels enter the market

Given the effect of the market entry of short-term leases on incumbent hotels' demand (Guttentag & Smith, 2017; Zervas et al., 2017) and the competitive legitimation that this effect involves (Bianco et al., 2024), new hotel entrants can be expected to adapt their market-entry strategies to optimize their demand function in this new market context (in which short-term leases enjoy the benefits of agglomeration). This adaptation is crucial, especially since agglomeration externalities have been shown to have a significant influence on hotels' market-entry strategies and performance (Kalnins & Chung, 2004).

During Stage 1, hotels determine the quality of a new property (ranging from budget to luxury) based on their ability to leverage resources from their competitors through agglomeration externalities (Kalnins & Chung, 2004). To mitigate this new competition, incumbent hotels could attain Nash's equilibrium – following the arguments of McCann and Vroom (2010) – by adjusting their prices based on the new entrant's ability to create positive or negative agglomeration externalities. The presence of multiple short-term lease hosts, by disrupting the lodging market oligopoly (Guttentag, 2015; Mazzeo, 2002), alters hotels' capacity to enjoy the advantages of agglomeration upon entering the market. Therefore, if short-term leases affect agglomeration externalities (as we hypothesize in H2), the market-entry strategies of new hotels

entering the market will also be affected. In other words, since agglomeration represents a critical factor in market-entry strategies (Fang et al., 2019; Feng et al., 2022; Yang et al., 2012), once the possibility of benefiting from agglomeration has been disrupted by the presence of short-term leases, the latter have to be taken into consideration by hotels that enter the market subsequently.

Indeed, since short-term leases have become a determinant factor in market-entry decisions, new hotels entering a market have three ways to position themselves *vis-à-vis* this new competitor: they can offer levels of quality and price similar to those of short-term leases in the market (homogenization), lower levels of quality and price (cost leadership), or higher quality at a higher price (differentiation). For example, if a market is dominated by short-term leases classified as mid-price, new hotels can enter with a mid-price brand (homogenization), an upscale brand (differentiation), or an economy brand (cost leadership). These three strategies, widely used in strategic management research generally and game theory in particular (Porter, 1980; Zhang et al., 2024), represent the basis for market-entry positioning in response to incumbent competition.

We theorize that a cost leadership strategy (i.e., positioning in the market to offer a product at a lower price) is the most effective strategy for new hotels. First, undercutting the existing short-term market best positions them to enjoy the advantages of agglomeration. Indeed, hotel class is negatively associated with the benefits resulting from agglomeration externalities (Canina et al., 2005). On the other hand, hotels of the same class as most short-term leases in the market (homogenization strategy) enjoy the benefits appropriated by short-term leases while higher-end hotels (differentiation strategy) only stand to lose from agglomerating with lower-level accommodations (Kalnins & Chung, 2004).

Second, though short-term leases have recently improved in terms of professionalization (multi-unit ownership) and high-quality offerings (Zhang et al., 2023), most are still single-unit owners that compete on the basis of price (Chang & Sokol, 2022). Therefore, by undercutting the current short-term lease market, new hotel entrants could attract a wider customer segment by leveraging price as a key competitive advantage. This strategic pricing enables hotels not only to reclaim market share from short-term leases but also to appeal to a wider spectrum of budget-conscious consumers who, while seeking cost savings, do not wish to compromise on the essential services and structured hospitality experience that hotels uniquely provide, such as daily housekeeping and reliable front office services (Han & Bai, 2022). In light of these considerations, we extend H2 to formulate another hypothesis.

H3a: When the presence of same-price-level short-term leases in the market diminishes the positive effect of agglomeration on hotels' performance, new hotel entrants that adopt a cost leadership strategy relative to the market positioning of incumbent short-term leases outperform entrants that adopt homogenization or differentiation strategies.

Though the homogenization strategy (i.e., new hotels positioning themselves at the same price point as most incumbent short-term leases) entails positive outcomes, such as anticipating the development of the newly established market equilibrium (Magill & Quinzii, 2002), this strategy also has some shortcomings. To begin with, the dominant market presence of short-term leases in the same price class increases price competition (Freedman & Kosova, 2012), which tends to diminish performance (Mazzeo, 2002). Moreover, the advantages of agglomeration for hotels theorized in previous studies (Canina et al., 2005; Kalnins & Chung, 2004) would accrue to short-term leases.

New hotel entrants that pursue a differentiation strategy (i.e., position themselves at a higher level than most of the incumbent short-term leases) may likewise enjoy fewer advantages of agglomeration because the benefits of reputation and higher quality could spill over to short-term leases (Canina et al., 2005). However, the differentiation strategy implies that hotels possess better resources and offer facilities and amenities that short-term leases cannot (Bianco et al., 2023). This non-price strategy with a focus on quality (Chang & Sokoli, 2022) may mitigate the risks associated with saturation and price sensitivity (Bayoumi et al., 2013), and such mitigation is an important consideration because new short-term leases may again enter the market after a hotel does. Consequently, we further extend H2 by formulating three more hypotheses.

H3b: When the presence of same-price-level short-term leases in a market diminishes the positive effect of agglomeration on hotels' performance, new hotel entrants that adopt a differentiation strategy relative to the market positioning of incumbent short-term leases outperform those that adopt a homogenization strategy.

H4a: When the presence of same-price-level short-term leases in a market diminishes the positive effect of agglomeration on hotels' performance, new hotel entrants prefer the cost-leadership strategy to other market-entry strategies.

H4b: When the presence of same price-level short-term leases in a market diminishes the positive effect of agglomeration on hotels' performance, new hotel entrants prefer the differentiation strategy to the homogenization strategy.

METHODOLOGY

To investigate the influence of short-term leases on hotels' benefits from agglomeration externalities and their consequent market entry strategies, we employed a series of random-effect models to examine the effects on competitive advantage, addressing H1, H2, and H3a/b, and analyzed the actual market entry strategies adopted by hotels (H4a/b) using a binomial logit model.

Data

Our dataset consists of all the hotels operating in Texas from January 2014 to December 2023. We selected Texas because of the availability of data necessary to assess the study context and the previous use of this state as a representative sample in hospitality and tourism research (e.g., Bianco et al., 2024; Zhang et al., 2024) as well as general management research (e.g., Kalnins & Chung, 2004; McCann & Vroom, 2010). We collected the data from three sources to create a property-specific dataset for hotels and short-term leases. First, we used STR population data for property-specific information on hotels such as name, location, price class, brand, and ownership (e.g. Bianco et al., 2024; Canina et al., 2005). Second, we matched the data with records from the Texas Comptroller of Public Accounts, a unique and granular dataset of longitudinal property-specific hotel performance that is unavailable from other sources and was crucial for testing our hypotheses. Lastly, we acquired data regarding short-term leases from AirDNA, which scrapes short-term lease websites to provide monthly records for listings, including information such as property-ID location, and price quality. AirDNA has been widely used in hospitality studies (e.g., Bianco et al., 2024; Xie & Kwok, 2017; Zhang et al., 2024). We chose 2014 as the start year because AirDNA began collecting data in this year. The final dataset

includes 760,510 monthly observations of 4,130 hotel properties and 135,564 short-term leases operating in the same competitive clusters.

Cluster Specification

Previous studies of agglomeration economies have used jurisdictions such as metropolitan statistical areas (MSAs; Canina et al., 2005), zip codes (Kalnins & Chung, 2004; McCann & Vroom, 2010), counties (Conlin & Kadiyali, 2006), and concentric geographical circles based on Euclidean distance (Gan & Hernandez, 2013; Baum & Mezias, 1992) to identify competitive clusters. We delineated clusters and accommodations for this study based on their geo-coordinates using the HDBSCAN algorithm. This hierarchical density-based spatial clustering algorithm, which has been used in previous hospitality and tourism research (Bianco et al., 2024), utilizes the distance between geographical points to create clusters (Campello et al., 2013; Mou et al., 2020). The distance is defined as

$$D_{m-k(a,b)} = max\{core_k(a), core_k(b), core_k(a,b)\} \tag{3}$$

where $D_{m-k(a,b)}$ is the distance between geographical points, $core_k(a)$ is the radius of the cluster under the minimum parameter condition k, and $core_k(a,b)$ represents the haversine distance between a and b.

HDBSCAN offers several advantages over the clustering approaches used in previous agglomeration studies. First, jurisdictional boundaries such as zip codes, counties, and MSAs are "hard" and, thus, can arbitrarily exclude nearby competitors located just outside them. Since HDBSCAN is based on geographical distance, this shortcoming does not occur, even for competitive clusters located across such jurisdictional boundaries. Second, HDBSCAN improves on the use of concentric circles based on Euclidean distance, which requires an initial decision

about their width that must be equal for all clusters (e.g., every cluster must have a 2-km radius). HDBSCAN, on the other hand, dynamically adapts the geographical radius of the clusters to the densities of accommodations. This is an important feature since a "one-size-fits-all" approach would not be suitable as the size of the clusters is expected to vary depending on the number of competitors. Lastly, HDBSCAN produces an unbiased cluster mechanism whereas the creation of competitive sets made by hotels has been shown to be biased (Schwartz & Webb, 2022).

Figures 1 and 2 show the geolocation of hotels and short-term lease properties and the central points of each cluster, respectively. We created the competitive clusters using a minimum parameter (k) of four hotels in accordance with the practice of hospitality data firm STR. Given the discrepancy between the number of hotels and short-term leases in our dataset and our aim of investigating hotels' agglomeration performance and market entry decisions, we initially based the clusters only on hotel locations. We then assigned the short-term leases to competitive clusters based on their geographical locations.

Variables

The dependent variable for our panel regressions is *RevPAR*, a commonly used performance measure that combines revenue and occupancy (Bianco et al., 2023; Schwartz & Webb, 2022). In our multinomial and binomial logit models, investigating hypotheses 4a and 4b, respectively, we model the likelihood of a hotel choosing one market-entry strategy over another. Hence, the dependent variable *Strategy* is a factor variable that can take the value of *Cost_Leadership*, *Homogenization*, or *Differentiation*.

Hotels and short-term leases are classified based on price class, which is a five-level classification (i.e., budget, economy, mid-price, upscale, and luxury). STR created this classification based on the average hotel prices, and AirDNA has mimicked it based on the

average price of short-term leases in the market. Using this classification, which is well-established in the previous literature (e.g., Lee et al., 2019), we easily compared hotels and short-term leases in a more nuanced manner than previous classifications in the agglomeration literature, which typically compare only high- and low-level hotels (Kalnins & Chung, 2004).

For the panel regression models, we used various cluster-level independent variables to assess the impact of agglomeration benefits on hotels' performance. *Higher_Level_Hotels* represents the total number of hotels in the market that are of a higher category than the focal hotel (i.e., the hotel of interest being analyzed). This variable is used because previous research has shown that hotels' ability to enjoy the benefits of agglomeration is connected to co-locating in a market with higher-category hotels. (Canina et al. 2005, Kalnins & Chung, 2004). *Same_Level_Hotels* represents the number of hotels at the same level as the focal hotel. For luxury hotels, this is the source they use to gain agglomeration benefits, as there are no superior hotels in the market (Kalnins & Chung, 2004). In addition, we used the variable *Strategy* to assess the benefits associated with adopting one entry strategy over another.

Co-location with higher-level hotels represents the main source of agglomeration benefits for hotels that are not in the luxury class; the latter benefit from co-locating with hotels at the same level (Canina et al. 2005, Kalnins & Chung, 2004). Accordingly, we interacted the variable *Higher_Level_Hotels* with the number of short-term leases in the market at the same level to model the moderating effect directly on agglomeration externalities (hypotheses 1 and 2). For example, for each mid-price hotel, we interacted the number of higher-level hotels in the market (from which could gain positive agglomeration benefits) with the number of mid-price short-term leases, which are hypothesized to enjoy these agglomeration benefits more than the mid-price hotel.

We also incorporated a range of cluster-level control variables that can affect hotel performance and market-entry strategies into all of the models. Thus, we used *OwnershipConcentration* to control for the concentration of hotel ownership within the cluster (Bianco et al., 2024). We controlled for the number of branded hotels with the variable *BrandedHotels* (Nicolau et al., 2024), for the number of hotels with the variable *ClusterCompetitors* (Yang et al., 2012), and for the room supply in the cluster with the variable *TotalRooms* (Nicolau et al., 2024). We selected these variables, which were available in our database and are well-established in the previous literature, because they enabled us to control for heterogeneity at the cluster level, which affects the competitive environment.

Lastly, we incorporated two sets of fixed effects, *HotelPropertyID* and *Month*, into the calculations. We used property ID fixed effects to control for the endogeneity caused by the characteristics of individual hotels (e.g., management style, specific demand, micro location, reputation). We used month fixed effects to control for any time-related endogeneity that could affect firms' performance (e.g., seasonality or the COVID-19 pandemic).

Appendix A presents the descriptive statistics for the variables used in this paper. These statistics show the distribution of the variables and the need for corrective measures to validate model assumptions. All of the variables are shown at the cluster level, and the variability among the clusters (increasing the standard deviation) is given by the differences among them. The described approach calls for robust standard errors to correct for outliers, which we did for each of the following models. Moreover, because of the variation in the ranges of the independent variables shown in Appendix A, we standardized all of the variables subsequently used in the models so that our interpretation of the results would be more meaningful.

Model Specification

We used random-effect, logit, and multinomial logit models to test our hypotheses. First, we employed a series of random-effect models to investigate the effect of short-term leases on agglomeration externalities and the effectiveness of hotels' market entry strategies in markets with short-term leases. Second, we used a logit model to assess the likelihood of budget and luxury hotels selecting one strategy over another. Lastly, we tested the likelihood of selecting the cost leadership or differentiation strategy over the homogenization strategy for the economy, mid-price, and upscale hotels.

Model 1: Random-effect Model

We chose a random-effect model to investigate the effect of short-term leases on agglomeration externalities (Stage 2) and evaluate the effectiveness of hotel market entry strategies in markets with short-term leases (Stage 3). The justifications for using a random-effect model include the panel nature of our data, the increased efficiency of this model (Schwartz, 1998), and the results of the Lagrange multiplier test, which we used to record the presence of random effects (Nicolau et al., 2024; Appendix B). We checked for autocorrelation and heteroskedasticity in all of the regressions using Breusch-Godfrey (Breusch, 1978; Godfrey, 1978) and Breusch-Pagan (Breusch & Pagan, 1979) tests, respectively. Since various subsets of the main database were used, the test results varied. The models that have been used to investigate budget and mid-price hotels suffer from autocorrelation, and the models that have been used to investigate upscale and luxury hotels suffer from both autocorrelation and heteroskedasticity, but the models that have been used to investigate economy hotels do not have these drawbacks. To correct them, we used the Arellano-Bond estimator for the budget and mid-

price hotels and robust standard errors for the upscale and luxury hotels when the panel data showed heteroskedasticity. Appendix C presents the results of the autocorrelation and heteroskedasticity analysis and related countermeasures.

Lastly, we tested for multicollinearity using variance inflation factors (VIFs). We found that the control variable *BrandedHotels* had a collinearity value of greater than 10 for the models involving upscale and luxury hotels and thus excluded this variable from them (Kutner et al., 2004). Moreover, the main independent variable connected to luxury hotels had a high VIF, probably because of the interaction term, so we did not modify the regression (Kutner et al., 2004). The VIFs are presented in Appendixes D and E.

We estimated the random-effect model equation using the general equation

$$Y_{it} = \beta_0 + \alpha_i + X_{it}\beta + \delta_t + \varepsilon_{it} \qquad (4)$$

where Y_{it} is the dependent variable (RevPAR), β_0 is the intercept, $X_{it}\beta$ is a vector representing all of our independent variables, a_i is the unobserved heterogeneity, δ_t is the time fixed effect, and ε_{it} is the error term.

Model 2: Logit Models

We used a series of logit models to investigate H4a and H4b. To do so, we contracted the database to a cross-sectional database containing only data on hotels that entered the market after short-term leases (Stage 3). We used a maximum likelihood estimation for both models to provide insights into the influence of various factors on the likelihood of various outcomes. The choice between a logit or multinomial logit model depends on the nature of the dependent variable in the dataset. For a binary outcome (i.e., cost leadership or homogenization for the budget hotels and differentiation or homogenization for the luxury hotels), the logit model is

appropriate, whereas the multinomial logit model is employed for dependent variables with multiple categories (i.e., cost leadership, differentiation or homogenization for economy, mid-price, and upscale hotels; Long & Freese, 2006). The logit models included both the number of higher-level hotels, which represents an agglomeration factor, and hence, a reason to enter the market, as well as the number of same-level hotels because more same-level hotels could represent a pre-entry signal regarding cluster demand. Thus, we eliminated the number of cluster competitors as a result of multicollinearity (Appendixes F and G).

Logit Model

The logit model is a statistical method for investigating binary outcomes (Kim & Arbel, 1998). In this study, the strategy adopted by budget and luxury hotels at entry represented the outcomes. We used a logit model because there were only two strategy choices for each of these price-class hotels, namely, cost leadership or homogenization for the budget hotels and differentiation or homogenization for the luxury hotels (Long & Freese, 2006). A differentiation strategy is not possible for budget hotels, and a cost leadership strategy is not possible for luxury hotels. Consequently, the dependent variable has a value of 0 if it entered the market using homogenization, 1 otherwise. Hence, we specified the logit model

$$Log\left[\frac{P(C_i=1)}{1-P(C_i=1)}\right] = a_j + \beta_1 X_{1i} \dots \dots + \beta_n X_{ni} \tag{5}$$

where $P(C_i = 1)$ is the probability of the event of interest (e.g., choosing differentiation over homogenization for luxury hotels), β_0 is the intercept, $\beta_1 - \beta_n$ are the coefficients to be estimated, and $X_{1i} - X_{ni}$ are the independent variables.

Multinomial Logit Model

For outcomes with more than two unordered categories, such as the decision among the three strategies available to economy, mid-price, and upscale hotels, we used a multinomial logit model (Long & Freese, 2006) specified as

$$Log\left[\frac{P(C_i=H)}{1-P(C_i=H)}\right] = a_H + \gamma_{H1}X_{1i}\ldots\ldots + \gamma_{Hn}X_{ni} \quad H = 1,\ldots,H-1 \qquad (6)$$

where $P(C_i = H)$ is the probability of outcome H for observation i, a_H is the intercept for outcome H, $\gamma_{H1}, \ldots \gamma_{Hn}$ are the coefficients associated with each independent variable for outcome H, and H represents the base outcome against which the probabilities of other outcomes are compared (homogenization strategy).

RESULTS

Table 1 displays the results of the random-effect model for the impact of short-term leases on the agglomeration performance of the hotels in Stage 2, when short-term leases entered the market. The results show that the budget, economy, and upscale hotels were positively affected by the agglomeration externalities enjoyed as a result of co-locating with higher-class hotels (i.e., the variable *Higher_Level_Hotels*). On the other hand, mid-price and luxury hotels did not enjoy the same benefits. These results partially support H1.

The results presented in Table 1 also demonstrate that an increased number of same-class short-term leases negatively moderated the ability of the budget, economy, and upscale hotels to enjoy the benefits of agglomeration but not that of mid-price and luxury hotels, which were unable to enjoy these benefits in the first place. These results partially support H2.

Table 1 – Random-effect model for the effect of the entry of short-term leases into the market on hotels' agglomeration performance (Stage 2)

	Budget		Economy		Mid-price		Upscale		Luxury	
	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err
Intercept	901.84***	23.16	1468.86***	0.005	1871.42***	30.58	2525.36***	48.65	3223.18***	69.34
Higher_Level_Hotels	37.52*	15.90	7.06***	0.005	-175.58***	33.55	118.39***	24.84		
Same_Level_Hotels									42.31	26.99
BudgetSTL	151.34***	26.13								
Higher_Level_Hotels* BudgetSTL	-28.80**	9.07								
EconomySTL			249.26***	0.015						
Higher_Level_Hotels* EconomySTL			-49.79***	0.002						
Mid-PriceSTL					155.64*	63.75				
Higher_Level_Hotels* Mid-PriceSTL					-69.80	47.58				
UpscaleSTL							148.39***	42.08		
Higher_Level_Hotels* UpscaleSTL							-53.48*	20.95		
LuxurySTL									318.44***	69.65
Same_Level_Hotels * LuxurySTL									-32.59***	7.70
ClusterCompetitors	-227.49 ***	50.98	-502.97***	0.011	-158.63*	79.22	-352.92***	26.98	-202.25***	37.14
BrandedHotels	111.69***	14.25	284.03***	0.011	38.45	86.42	--	--	--	--
TotalRooms	243.69**	82.90	244.09***	0.011	332.75***	54.40	356.81***	44.82	-109.77*	46.41
OwnershipConcentration	-12.03	9.07	-17.99***	0.002	109.89*	47.58	102.84***	21.37	-299.42***	67.20
R-squared	0.001		0.001		0.015		0.029		0.001	
Adjusted R-squared	0.001		0.001		0.015		0.029		0.001	
Chisq	1565840***		2619480***		2889840***		2373430***		9733270***	

*=p<0.10 **=p < 0.5 ***=p < .01

Table 2 presents the results of the logit models used to assess the effect of adopting a cost leadership, differentiation, or homogenization strategy on hotels' performance (*RevPAR*) in Stage 3. These results show that a cost leadership strategy was preferable for every hotel class able to adopt it (i.e., budget, economy, mid-price, and upscale) and, thus, support H3a. On the other hand, the differentiation strategy underperformed the homogenization strategy for the economy and mid-price hotels and was not significant for the upscale and luxury hotels, so H3b is not supported.

Tables 3a and 3b display the results of the logit models used to assess the new hotels' entry strategies in Stage 3 (following the entrance of short-term leases). These results show that cost leadership was the preferred entry strategy for budget and economy hotels and homogenization the preferred strategy for the mid-price and upscale hotels while the luxury hotels preferred a differentiation strategy. Hence, H4a and H4b are partially supported.

Table 2 – Random-effect model for the effect of strategy adoption on hotels' performance following the entry of short-term leases into the market (Stage 3)

	Budget		Economy		Mid-price		Upscale		Luxury	
	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err
Intercept	790.66***	30.29	1357.06***	0.01	1836.30***	35.81	2467.92***	53.15	2864.61***	228.45
Strategy: Differentiation	--	--	-32.06***	0.01	-34.02**	12.86	-21.41	32.57	-59.20	217.00
Strategy: Cost_Leadership	49.38*	23.55	105.14***	0.01	33.20*	20.02	237.98***	84.60	--	--
Higher_Level_Hotels	10.60	27.57	20.09***	0.00	-171.90***	12.66	101.67***	25.53		
Same_Level_Hotels									63.00	75.50
ClusterCompetitors	-159.98***	46.14	-461.78***	0.01	-123.71***	24.18	-333.39***	27.83	-249.82*	102.80
BrandedHotels	79.40	69.19	279.19***	0.01	23.54	28.20	--	--	--	--
TotalRooms	217.24**	74.28	170.91***	0.01	312.91***	27.23	328.74***	43.53	44.50	87.25
OwnershipConcentration	4.66	11.78	-19.07***	0.01	108.97***	15.77	83.79***	18.97	-160.03*	75.25
R-Squared	0.009		0.010		0.013		0.028		0.003	
Adjuster R-Squared	0.008		0.008		0.013		0.028		0.003	
Chisq	134550***		2339720***		2889840***		2373430***		9733270***	

*=p<0.10 **=p < 0.5 ***=p < .01

Table 3a – Multinomial logit model for the likelihood of strategy adoption by economy, mid-price, and upscale hotels following the entry of short-term leases into the market (Stage 3)

| | Economy | | | | Mid-price | | | | Upscale | | | |
| | Cost Leadership | | Differentiation | | Cost Leadership | | Differentiation | | Cost Leadership | | Differentiation | |
	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err
Intercept	0.85***	0.19	-0.41	0.28	-0.29***	0.14	-0.78***	0.17	-2.26***	0.66	0.13	0.26
Higher_Level_Hotels	0.20	0.30	-0.60	0.42	1.19***	0.22	-0.35	0.25	-0.56	0.71	-1.01	0.32
Same_Level_Hotels	-1.21*	0.42	-0.47**	0.54	-0.43	0.27	-1.12***	0.26	-0.84	0.94	-0.60	0.39
BrandedHotels	-0.03	0.42	-0.15	0.56	-0.37***	0.35	0.81***	0.37	-1.55***	0.77	0.15	0.32
TotalRooms	-0.08	0.47	0.11	0.69	-0.41	0.38	-0.52	0.45	1.08***	0.56	0.08	0.32
OwnershipConcentration	-0.56	0.25	-1.15***	0.53	-0.16	0.21	-0.06	0.20	-0.44	0.44	-0.82***	0.31
AIC		455.838				836.455				376.713		

*=p<0.10 **=p < 0.5 ***=p < .01

Table 3b – Logit model for the likelihood of strategy adoption of budget and luxury hotels following the entry of short-term leases into the market (Stage 3)

| | Budget | | Luxury | |
| | Cost Leadership | | Differentiation | |
	Coeff.	Std.Err	Coeff.	Std.Err
Intercept	2.36***	0.32	3.07***	0.34
Higher_Level_Hotels	-0.38	0.30	--	--
Same_Level_Hotels	-0.26	0.25	0.41	0.27
BrandedHotels	0.47	0.38	2.29***	0.46
TotalRooms	-0.10	0.41	-1.33***	0.26
OwnershipConcentration	0.20	0.54	-0.04	0.21
AIC	287.53		197.79	

*=p<0.10 **=p < 0.5 ***=p < .01

DISCUSSION

We investigated the effect of short-term leases on hotels' market structure. Prior to the entry of short-term leases, hotels operated in an oligopolistic market, offering similar products while competing on price and differentiation (Mazzeo, 2002). While the previous literature emphasizes the influence of differentiation on agglomeration externalities (Canina et al., 2005; Kalnins & Chung, 2004), our analyses revealed a nuanced change in market dynamics following the entry of short-term leases into the Texas lodging market. The advantages of agglomeration traditionally enjoyed by budget, economy, and upscale hotels from co-locating with higher-class hotels (Canina et al., 2005) appear now to be diluted by the presence of budget, economy, and upscale short-term leases.

Thus, short-term leases may be "free riding" on the cluster value established by incumbent hotels of these class prices (Kumar et al., 2011). The results for the mid-price and luxury-priced hotels were unexpected: the former were negatively affected by the presence of higher-level hotels while the addition of mid-price short-term leases led to a non-significant result. On the other hand, the benefits of agglomeration for the luxury hotels were insignificant, and the proximity of luxury short-term leases reduced their performance. Thus, the luxury hotels were able to create agglomeration externalities, but these were distributed only among the short-term leases. Both of these unexpected results could reflect increased similarity in terms of service among hotels of the same price class. Indeed, increased similarity is the main factor preventing hotels from enjoying the benefits of agglomeration (Balaguer et al., 2013, Mazzeo, 2002).

In the altered market dynamics, new hotels entering the market can position themselves against incumbent short-term leases by either distinctly diverging from them in terms of price (differentiation), aligning with them in terms of price (homogenization), or undercutting them by offering a price lower than the short-term lease average price (cost leadership). As hypothesized, the cost leadership strategy was the most effective in terms of hotel performance for the price classes able to adopt it (i.e., all but the luxury hotels), attracting a wider market (Chang & Sokoli, 2022) and regaining the benefits of agglomeration (Canina et al., 2005).

Also, contrary to our expectations, the second-most-rewarding entry strategy was homogenization rather than differentiation. Homogenization was particularly rewarding for the economy and mid-price hotels while there was no significant difference in performance between the homogenization and differentiation strategies for the upscale and luxury hotels. This result suggests that the benefits guaranteed by a diversification strategy, such as the ability to offer premium services (Guttentag & Smith, 2017) and to mitigate the risk of saturation and price sensitivity (Bayoumi et al., 2013), are completely offset by the spillover of agglomeration externalities to lower-level short-term leases (Canina et al., 2005).

Finally, despite evidence suggesting that cost leadership is the best entry strategy for competing against short-term leases across the price classes other than luxury, only the budget and economy hotels adopted it, while the mid-price and upscale hotels preferred homogenization. This result could be due to misinterpretation of the new market equilibrium by these classes of hotel – specifically, the disruptive effect of the entry of short-term leases into the market (Stage 2) – as a change in market price equilibrium by new mid-price and upscale hotels (Magill & Quinzii, 2002). These hotel firms may, for example, have viewed short-term leases as a driver of the shifting equilibrium and responded to their development accordingly, following a false lead.

The situation was different for the luxury hotels, which were unable to use a cost leadership strategy, for we did not observe a distinct competitive advantage associated with adopting a differentiation or a homogenization strategy. Thus, though the luxury short-term leases were able to enjoy the benefits of luxury hotels' agglomeration, their presence alone was insufficient to deter newcomers from employing a differentiation strategy.

An alternative explanation for hotels not adopting the most effective strategy could be strategic inertia. Inertia refers in this context to firms' resistance to changing their strategies in the face of changing market conditions (Hemmington & Neill, 2022). Indeed, hotels have always adopted one of these three strategies based on their level, for example, low-class hotels competing in terms of price (Chang & Sokol, 2022). Hence, it can be assumed that, by recognizing short-term leases as legitimate competitors, the hotels adopted established market-entry strategies irrespective of their effect on performance in the new market conditions.

Lastly, our findings show that the market structure changed as a result of the short-term leases enjoying the benefits of agglomeration. The change in their market-entry strategies following the entrance of short-term leases indicates that hotels have accepted short-term leases as legitimate competitors not only at the corporate level (Bianco et al., 2024), but also at the local level. In this respect, the manner of competition has changed. While possessing better (and, hence, more expensive) resources conferred a competitive advantage in hotel-only markets (Barney, 1991, Bianco et al., 2023), the hotel and short-term lease markets differ in that the adoption of a differentiation strategy had a negative or non-significant effect for new hotel entrants across price classes.

LIMITATIONS AND FUTURE RESEARCH

Some caveats are necessary when interpreting and generalizing our results. While several studies have used the Texas data, replication studies could be conducted should property-level performance data be available for other markets. Similarly, we did not distinguish between professional (multi-unit) and regular (single-unit) hosts for short-term leases regarding agglomeration externalities or hotel entry strategies, but further research could determine whether the future competitive dynamics of the accommodation market differ when one kind of host is dominant.

CONTRIBUTIONS

Our study examines the impact of short-term leases on incumbent hotels' agglomeration externalities and subsequent market-entry decisions. Our findings demonstrate that the entry of short-term leases into the market disrupted an established oligopoly, thereby affecting hotels' agglomeration externalities. Consequently, the structures of lodging markets were affected as new hotels factored short-term leases into their choice of market-entry strategies. However, not all hotels opted for the strategy that would guarantee the highest return, possibly because of inertia or misinterpretation of the new market dynamics.

Agglomeration externalities among hotels are a long-standing research topic (Canina et al., 2005; Kalnins & Chung, 2004) and one of the main reasons for firms to select one location over another (Fang et al., 2019; Yang et al., 2012). We find that these externalities are now affected by the presence of short-term leases and, in turn, hotels' location decisions.

Theoretical contributions

Among the theoretical contributions of this study, first, expanding upon previous literature on agglomeration, we demonstrate that short-term leases significantly influence hotels' agglomeration externalities. These findings suggest that previous conclusions about tourism agglomeration effects need to be revised in light of new market dynamics that include short-term leases. Second, we build on literature showing that short-term leases have disrupted established hotels by affecting their performance (Guttentag & Smith, 2017), demonstrating that this effect extends to hotels' ability to benefit from agglomeration, which is a fundamental determinant of location decisions (Fang et al., 2019; Yang et al., 2012). Third, while previous research investigated incumbent hotels' responses to the entrance of short-term leases (Chang & Sokol, 2022), we showed that hotels' response extends to modified market-entry strategies for newcomer hotels. Fourth, this study contributes to game theory literature in the hospitality sector by exploring hotels' strategic responses to the emerging local short-term lease market and exploring the free-rider problem in relation to short-term leases, highlighting the benefits that they enjoy from the resources deployed by established hotels. Fifth, this study contributes to the literature on competitive dynamics in hospitality by demonstrating that some hotels do not make the most effective market-entry decisions, possibly because they misinterpret the new market structure that includes short-term leases or because organizational inertia inhibits their competitiveness against the new entrants.

Practical implications

The findings of this study have several practical implications for hotel owners and managers. The results show that the best market-entry strategy for new hotels, given the class of incumbent short-term leases in the market, is cost leadership that entails opening a same-class

hotel offering lower prices than short-term leases already operating in the market. If cost

leadership is not an option, hoteliers should opt for a homogenization strategy instead.

Our results clearly demonstrate that, rather than reacting impulsively, new entrants should

avoid entering the market with a hotel at a higher level than most of the short-term leases already

in the market. Our analysis indicates that this differentiation strategy, for the hotels in our

sample, was the least rewarding financially. Accordingly, for example, a hotel entering a market

in which short-term leases are predominantly mid-price should offer economy prices or, if it

cannot, a mid-price hotel will be more successful than upscale or luxury hotels, which would not

attract sufficient demand. Hence, hoteliers are advised not to "double down" by impulsively

offering better service than short-term leases but to compete instead in terms of price.

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