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Airbnb's Effect on the Hospitality Industry

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Abstract

I examined the effect that Airbnb's entrance into and disruption of the hospitality market in 2011 had on hotel room rates across the world by 2017. Hotel room rates were taken from published data tables rather than my own analysis because of an unavailability of raw hotel pricing data. Price comparisons between current Airbnb and hotel room rates were researched to see if one method of accommodation would be better than the other. Twenty-seven cities' hotel rate averages and Airbnb entire-home prices were averaged and compared. There was a significant difference in hotel room rates between 2011 and 2017, during which prices rose, potentially as a factor of the willingness for consumers to spend more. No significant difference in 2017 Airbnb entire-home and 2017 hotel room prices was found. Mediation of Airbnb's entry into the market was not tested it cannot be stated whether this itself had a significant effect.

Keywords

gig economy, hospitality industry, Airbnb

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Comments

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Airbnb's Effect on the Hospitality Industry

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Abstract

I examined the effect that Airbnb's entrance into and disruption of the hospitality market in 2011 had on hotel room rates across the world by 2017. Hotel room rates were taken from published data tables rather than my own analysis because of an unavailability of raw hotel pricing data. Price comparisons between current Airbnb and hotel room rates were researched to see if one method of accommodation would be better than the other. Twenty-seven cities' hotel rate averages and Airbnb entire-home prices were averaged and compared. There was a significant difference in hotel room rates between 2011 and 2017, during which prices rose, potentially as a factor of the willingness for consumers to spend more. No significant difference in 2017 Airbnb entire-home and 2017 hotel room prices was found. Mediation of Airbnb's entry into the market was not tested it cannot be stated whether this itself had a significant effect.

Airbnb's Effect on the Hospitality Industry

The creation and rise of the gig economy has influenced few industries more than the hospitality industry. Consumers have long been able to search, book, and stay in hotels and other types of lodging, with the basic premise that they will have a convenient, safe, and guaranteed place to live while they are away from home. This search and booking process has been made infinitely simpler through the creation of websites and smartphone applications such as Airbnb and Inclusive. The simplicity introduced through the use of these apps now gives people the ability to shift their mindset toward the actual trip, rather than the hassles of the booking process.

This shift in mindset provided through app-based booking is available to both consumers as well as those who offer up their homes on the applications. In a recent article published by Oskam and Boswijk (2016), which studied why Airbnb has risen and continues to rise to prominence in the industry, they describe the gig economy relative to hotels as ecosystems that are unique, adaptable networks with the potential to connect customers to anyone and anything. The idea of Airbnb as an ecosystem is intriguing when compared to hotels, as it shows how the platform is much less rigid in terms of its business model and can allow any person to be both a buyer and a seller. These ecosystem-like markets can give a rural farmer who lives outside of a major metropolitan area the ability to post their home or room for rent on Airbnb and connect with a person halfway across the globe who wants to see how someone in the farmer's exact situation lives. Living like a local through Airbnb affords consumers the opportunity to embrace culture and society in an affordable way that a hotel would never be able to do. This opportunity, according to Oskam and Boswijk (2016), is one of the primary reasons people choose to book through the platform. On the other hand, the researchers found that renters book their rooms on Airbnb.com as a way to have a second source of income, in addition to being afforded the

opportunity to share in a sense of international community (Oskam & Boswijk, 2016). Prior to applications, opportunities for financial and personal achievement would have been much more difficult to come by.

This shock of a completely new way of running the hospitality industry has, of course, had an impact on the market for hotel rooms. Zervas, Proserpio and Byers (2017) found that Airbnb's entry into the market has significantly reduced hotel room rates in several cities across the United States, especially during times when there are special events, such as music festivals, big sports games, and conferences. Their research focused on an area where tourism booms during certain times throughout the year – specifically, Austin, Texas during the South by Southwest music festival. The research presented in this paper deals with hotel and Airbnb prices year-round and during times when tourism does not boom, adding to the research that Zervas et al presented. Since Airbnb's entrance into the market and the public movement towards gig economy applications, the hotel industry has been under a microscope to see how executives and hoteliers will respond.

Despite this shock of an entirely new and unique supply into the market, most hotel executives seem to be unconcerned about the competition that Airbnb and other home-sharing platforms bring to the table. Although prices and room occupancy levels have dropped in recent years, many do not see the entry of Airbnb as a particular threat. This may be due to the fact that they see Airbnb's market reach to be different than their own hotels: "The bulk of the demand is in higher-rated, higher-occupancy, urban markets; it is longer length of stay with a predominantly leisure and value focus...where customers are willing to accept inconsistent product with very limited services" (Sickel, 2015, para. #3). While this disconnect in markets may be true, the impact that Airbnb has had on hotels' rates is obvious. In New York City, for

example, occupancy grew 3% in 2015, but because of the competitive prices that Airbnb offers, the average daily rate of a hotel room fell 1.4% (Sickel, 2015). Although this number may seem small, that sharp of a decline should be cause for concern for two reasons: this drastic of a rate fall has not happened in years and a single-year spike in the negative direction, especially in a year when Airbnb is growing to be a major player, foreshadows potentially larger falls and more dramatic shifts in years to come. This lax attitude has been seen before, however, when, in the early 2000s, Blockbuster executives thought that Netflix was a fad and would go out of style sooner rather than later. They were unphased by Netflix and refused to pivot, and ultimately ended up losing their entire business because they held firm to what they were doing (Evans & Schmalensee, 2016). Perhaps if hotel executives continue to exhibit the same mentality, their industry will go out of business as well, making Airbnb and similar platforms the only way for people to travel.

In sharp contrast to what many hotel executives are saying, studies and reports have shown that Airbnb is in fact seriously harming the present hotel industry and could continue to do so if hoteliers do not intervene. Hotels operate on fixed costs, and therefore any shock in the demand makes the industry incredibly vulnerable and susceptible to loss. A study commissioned by the Hotel Association of New York City recently estimated that New York hoteliers lost nearly \$2 billion in revenue because of Airbnb and other sharing platforms (Akbar & Tracogna, 2018). New York is not the only city with this dilemma, as other tourism destinations with a high density of Airbnb homes such as Barcelona and Austin have made hotel investment returns on equity fall drastically. Akbar and Tracogna (2018) show that hotels can change their business model slightly to compete with new challenges posed by sharing platforms, giving them the ability to develop “integrated platforms,” which incorporate hierarchical mechanisms, by fully or

partially integrating one side of users. The researchers concluded by examining several factors that there will be a gradual shift from sharing platforms to more progressively integrated platforms (Akbar & Tracogna, 2018). Essentially, hotel chains will buy into the idea of sharing platform booking, while maintaining their same standard of high-quality service and professionalism, potentially allowing them to take back the market share that platforms such as Airbnb have recently converted. This will only happen, however, if executives realize just how much their operations are at risk.

In another attempt to disprove hoteliers and make them aware of the impact that their industry could take in coming years, a study was done by researchers in Texas seeking to find the impact that Airbnb has on the local hotel industry, specifically in Austin, which has become a major tourist destination in recent years and sees a boom in tourism during the South by Southwest Music Festival (SXSW) that the city holds every March. Airbnb has become a popular booking site especially during SXSW, because the event is attended by many young people who choose to find accommodations through gig economy platforms rather than the hotel industry booking sites. The researchers focused on data collected from Airbnb's website, as well as the Texas Comptroller of Public Accounts, to find room rates, occupancy levels, and revenue of hotels in the area over the last decade. They hypothesized that since the entry of Airbnb into the local marketplace, hotel occupancy rates and prices, and therefore revenue, have dropped significantly (Zervas, Proserpio & Byers, 2016). They went on to quantify the impact that the entry of Airbnb has had on the industry as a whole. After controlling for variables such as hotel supply and quality, demand shifters – i.e. peak times for bookings such as SXSW –, and demographics, they found some startling results. For every 10% increase in number of Airbnb listings, there was a .39% decrease in monthly hotel room revenue, which was highly significant.

After removing the control for demand shifters, they found that the Airbnb supply changed drastically throughout different points of the year, peaking during SXSW (Zervas, Proserpio & Byers, 2016). These findings show that year-round, but especially during SXSW, Airbnb has a highly quantifiable negative impact on the hospitality industry in Austin, which has direct implications for hotels, travelers, and policy makers in the area. This impact could be caused by several factors, but most notably may be because of the higher number of bookings and greater opportunity to live like a local available to Airbnb guests, as compared to hotel bookings. The researchers noted that this data is only representative of the state of Texas, and therefore cannot be automatically applied to more general regional markets without further study.

Another recent article focused on the price determinants of accommodation rental and the impact the new network has on the hospitality industry. The researchers studied this topic because “pricing is widely acknowledged to be one of the most critical factors determining the long-term success of the accommodation industry” (Wang & Nicolau, 2017, p. 120). There are a number of determinants that cause a room to be a specific price; however, the article focuses specifically on those that differ between the sharing economy and hotels. The researchers assert these determinants to be “host attributes,” namely renters with “superhost” status, more listings, and verified identities (Wang & Nicolau, 2017, p. 130). This indicates that Airbnb consumers perceive these variables to be of higher status than chain affiliation and star ratings in hotels and would therefore be willing to pay higher prices. This was supported in a 2006 study done by other researchers which tracked price determinants of international tourist hotels in Taiwan and found that the average room rate was \$96.15 USD (Hung, Shang & Wang, 2010). In this study, they used determinants that included room, distance from center city, and transportation factors. Obviously, many factors may influence price differences, but it also seems possible that

disparities may be because quality signalers from hotels – such as chain affiliation and stars – are not viewed equally to those signalers on a platform, and therefore consumers place too much weight in the previous ratings of other platform users.

With the introduction of technology into every citizens' pocket, it seems as though Airbnb and other similar platforms are entering the market at the exact right time. The age of technology-fueled disruption is now, and the growth of the market for Airbnb is exponential. The growth that has already happened, as well as the ability to grow more, is due to the design aspect of the platform and the ability of the customers to do nearly every aspect of the booking without having to interact with other humans. A recent article published on Hospitality Net details a study conducted by I-AM, an international branding and interior design agency, revealed that 88% of people staying in hotels would like to reserve, check in, and check out through a mobile application (Hospitality Net, 2018). Moreover, 80% of people surveyed said that they would like to take virtual tours of hotels before booking, similar to how Airbnb allows its customers to view images of the property and house, apartment, or room they before they decide to rent.

Autonomy and options in travel are becoming increasingly more important as millennials grow to be able to spend money on travel and leisure activities, and platforms are shifting their business models to offer this autonomy as best they can. One researcher spoke to how Airbnb has tapped into exactly what the consumer wants by allowing them to build their own hotel packages, tour the room, and cater to the activities that best fit their interests by giving them the ability to stay in any part of the city (Luxury Lifestyle, 2018). Although major hotel chains may already do this with websites, the convenience of an application on one's phone and the ability to book without having to enter credit card information by using Apple Pay or similar software gives Airbnb the upper hand. Airbnb has created a niche in the market where they can exploit

everything that the customer at a hotel could possibly want. Looking to the future, the company is looking to continue to grow at an alarming pace for hoteliers, by looking to move even deeper into the market. A recent article published by hotelbusiness.com shows that the company is looking to purchase deluxe, vetted properties that would include amenities similar to what hotels offer, while also employing a staff in each neighborhood where deluxe rentals are to oversee the properties (Hotel Business, 2018). This would increase the amount of leverage that Airbnb already has over hotel chains and could allow them to grab even more control of the market in coming years.

Other than the initial research on Airbnb's impacts on hotel pricing mentioned earlier, there has not been much examination into the effects that it has had on the markets since it first became a major player in 2012. Significant changes in market prices of hotel rooms could concern hotel executives and hospitality directors in general. Additionally, a move from online and over-the-phone bookings to Airbnb usage would show just how far the platform economy has come in terms of the entrance into the hospitality industry.

The initial hypothesis for the present study was that the average hotel room price in 2017 would be significantly lower than the average hotel room price in 2011. After reviewing the research, another hypothesis was presented for the study. The second hypothesis was that the average entire-home Airbnb price would be significantly less than the average hotel room price in each city in 2017.

Method

Data

Data for this study were Airbnb listings across 27 geographically diverse U.S. and international cities that also vary in demographics and size. The specific cities were chosen based

on Airbnb's rankings of international cities with the most Airbnb listings, combined with cities where hotel pricing data and Airbnb pricing data were publicly accessible (McCarthy, 2016). Airbnb pricing data was chosen from the 2017 listings file for each city on [insideairbnb.com](https://www.insideairbnb.com), which gave data on price per night, occupancy, and location of listing. Hotel pricing data was obtained from [hotels.com](https://www.hotels.com)'s Hotel Pricing Index, which collects single-night double occupancy room rates, on one- to five- star hotels in cities across the globe and gives an average hotel price per city based on this data (Hotels.com, 2012). It is important to note that the hotel data is from a published data table, and raw data was not available to analyze. Data from 2011 was specifically chosen because, although Airbnb was initially founded in 2008, it was not an established player in the marketplace, with the legitimate ability to affect the hospitality industry, until three years later. Data from 2017 was used as it is the most recently available whole-year data for the listing prices.

Materials and Procedure

Every entire-home Airbnb listing from each city was tested to produce a mean price for each city. A mean of 10,672 entire-home Airbnb listings per city was used. This ensured that every neighborhood in each city was accounted for, providing a more accurate whole-city average price that would be comparable to the hotel prices. Entire-home rentals were chosen because [Airbnb.com](https://www.airbnb.com) describes these rentals as a place where guests have the whole home to themselves, including a bedroom, bathroom, and kitchen. Private rooms, on the other hand, require a "shared space with others," which is not a characteristic of a typical hotel room ([Airbnb.com](https://www.airbnb.com), n.d.). Additionally, the hotel prices examined were recorded for rooms with double-occupancy, which Airbnb private or shared rooms would not have necessarily been able

to account for. The one-night prices of each of the 50 listings were then averaged to create a city-wide average price of entire-room Airbnb listings.

The average hotel room price for both years was obtained from hotels.com's "What Should I Budget?" page. The website compiles annual data from its own listings and bookings and averages the price per room that travelers actually paid for a one-night stay in hotels across each city, regardless of star level.

Results

The mean cost and standard deviations of rooms for each of the three groups are as follows: after adjusting for inflation by using the consumer price index, the hotel prices in 2011 had a mean of \$164.33 ($SD = \36.65), the hotel prices in 2017 had a mean of \$191.85 ($SD = \31.70), and the Airbnb prices in 2017 had a mean of \$174.82 ($SD = \60.23). Double-occupancy hotel room prices across the twenty-seven cities have jumped since 2011, and a dependent sample t -test indicated that the change was significant; $p = .001$.

A dependent sample t -test indicated that there was no significant difference in average 2017 entire-home Airbnb price and 2017 hotel room price. It cannot be concluded without a doubt that Airbnb's entrance into the market was the reason for a price difference between 2011 and 2017 hotel prices, as mediation of Airbnb was not tested.

Discussion

The analysis pertaining directly to the initial hypothesis that there would be a drop in average price of hotel rooms after Airbnb's entry into the market was not supported by the study. The price difference in average double-occupancy room rate increased and was significant. One would think that simple supply and demand economics would force the price in the opposite direction – the more available rooms would make hotels lower their prices in order to fill them.

There can be several explanations for this unexpected finding. For one, the world economy since 2011 has gone up significantly, and consumer spending has increased by a significant amount in recent years. This could have forced the price of hotel rooms up, as people were willing to spend more freely than they had during the recession several years ago.

In terms of the second proposed hypothesis that Airbnb and hotel room prices in 2017 would be different, it was found that there was no significant difference in the pricing of the two rooms. Typically, Airbnb's entire-home rates are the highest compared to private and shared rooms. Choosing a different set of rooms may yield different results when measuring this data. There could be a strong case made supporting private Airbnb rooms as most comparable to hotel rooms, as they are singular rooms for a guest within a building. However, if one were to compare entire-home Airbnb prices with hotel room prices in the future, it may be useful to find entire-home rentals with a lower number of rooms. For example, a whole home vacation rental that lists a rental with eight bedrooms is certainly not comparable to an average hotel room, and the price would be significantly greater, so the outlier would absolutely skew the data. Getting rid of these listings would be helpful in more accurately assessing the prices.

Although insideairbnb.com is a strong resource with a multitude of data on Airbnb prices in 46 cities across the globe, the cities listed do not necessarily match up with the cities listed on hotels.com. [Hotels.com](http://hotels.com) only presents a limited amount of data for a small number of cities around the globe and in the United States. This makes it difficult to compare certain cities to each other, as a city such as Oakland may be featured on insideairbnb.com, but not on hotels.com. Also, there is very little publicly accessible hotel pricing data. Much of the individual raw data must be paid for, which makes it difficult to study in a classroom setting without budgets for this type of research. Additionally, it could be useful to assess median prices

rather than average prices when comparing the three categories, as means are more effected by extreme prices which could inflate averages.

It would be interesting to conduct future research to see how Airbnb room listings, such as private and shared room prices, compare to hotel rates. There could be a potential argument made for the similarity between private Airbnb rooms and hotel rooms. In addition, much like the South by Southwest music festival in Austin, Texas, every year raises the number and price of rooms available, it would be interesting to research how prices in other cities with similar events change throughout the year.

Although this study was unable to find a significance between Airbnb price and hotel price, it was able to present the framework for the idea that the gig economy is disrupting the hospitality industry. Significant price differences in a matter of six years are not seen typically, and technology has absolutely played a role in the way the hospitality industry moves. The introduction of new technology, such as Airbnb, into the economy continues to offer an extremely interesting opportunity for disruption of several markets, like the hospitality market, that were previously dominated by old-time and outdated ideas. As recent college graduates begin to move into the working world and become managers in industries that have the potential to be taken over by application-based platforms, it will be important to keep in mind how staying up to date with technology can help businesses stay afloat. This paper reflects the idea that sticking to outdated methods can prove costly, even in age-old industries.

References

- “Airbnb plus targets hotel segment.” *Hotel Business*, 22 Feb. 2018, www.hotelbusiness.com/airbnb-plus-targets-hotel-segment/.
- Akbar, Y. H., & Tracogna, A. (2018). The sharing economy and the future of the hotel industry: Transaction cost theory and platform economics. *International Journal of Hospitality Management*, 71, 91-101. doi:10.1016/j.ijhm.2017.12.004.
- Evans, D., & Schmalensee, R. (2016). *Matchmakers: the new economics of multi-sided platforms*. Boston: Harvard Business Review Press.
- Get the data. (2018). *Inside Airbnb*, Retrieved 10 April 2018 from <http://insideairbnb.com/get-the-data.html>.
- How much was your room. (2012). *Hotels.com*, Retrieved 10 April 2018 from <http://www.hotel-price-index.com/2012/fall/how-much-was-your-room/index.html>.
- Hung, W., Shang, J., Wang, F. (2010). Pricing determinants in the hotel industry: Quantile regression analysis. *International Journal of Hospitality Management*, 29(3), 387–384.
- McCarthy, Niall. (2016). Which cities have the most Airbnb listings. *Forbes*, Retrieved 1 May 2018 from <https://www.forbes.com/sites/niallmccarthy/2016/07/07/which-cities-have-the-most-airbnb-listings-infographic/#9ede2d4d1b95>.
- Mogelonsky, Larry. (2018). Hospitality in the age of disruption. *Hospitality Net*, Retrieved 1 May 2018 from www.hospitalitynet.org/opinion/4086611.html.
- “Nearly 90% of guests happy to use apps to organize hotel stays.” *Luxury Lifestyle Magazine*, Retrieved 1 May 2018 from www.luxurylifestylemag.co.uk/travel/nearly-90-of-guests-happy-to-use-apps-to-organise-hotel-stays/.

- Oskam, J., & Boswijk, A. (2016). Airbnb: The future of networked hospitality businesses. *Journal of Tourism Futures*, 2(1), 22-42. doi:10.1108/jtf-11-2015-0048.
- Sickel, Julie. (2015). What do hotel execs really think of Airbnb. *Business Travel News*, Retrieved 20 February 2018 from www.businesstravelnews.com/Hotel-News/What-Do-Hotel-Execs-Really-Think-Of-Airbnb.
- Wang, D., & Nicolau, J. L. (2017). Price determinants of sharing economy based accommodation rental: A study of listings from 33 cities on Airbnb.com. *International Journal of Hospitality Management*, 62, 120-131. doi:10.1016/j.ijhm.2016.12.007.
- What do the different room types mean. (n.d.). *Airbnb*, Retrieved 10 April 2018 from <https://www.airbnb.com/help/article/317/what-do-the-different-room-types-mean>.
- What should I budget. (2018). *Hotels.com*, Retrieved 10 April 2018 from <https://hpi.hotels.com/us-2017/what-should-i-budget/>.
- Zervas, G., Proserpio, D., & Byers, J. (2013). The rise of the sharing economy: estimating the impact of Airbnb on the hotel industry. *SSRN Electronic Journal*, 54(5), 687-705. doi:10.2139/ssrn.2366898.