


The effect of the COVID-19 on sharing economy: survival analysis of Airbnb listings

COVID-19'un paylaşım ekonomilerine etkisi: Airbnb listelerinin sağkalım analizi

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Abstract

This research investigates the survival probability of listings in the Airbnb platform during the COVID-19 period between January-October 2020 in Istanbul. In line with the research aim, Cox's Proportional Hazard Model is adopted to conduct survival analysis, where the physical and spatial attributes of Airbnb listings are used as predictors. Our findings show that while physical attributes show similarity to previous findings, spatial attributes show substantial differences in the Pre-COVID and Post-COVID comparison. The contributions of the study have two facets. Theoretically, this research's findings contribute to the current literature by understanding the changing consumer preferences and identifying the factors that affect Airbnb listings' survival rates during the COVID-19 pandemic. The findings may also help practitioners understand changing customers' preferences during COVID, especially in terms of locational choices. Moreover, customer feedback's quality and quantity might help the Airbnb hosts to improve their service quality, attract more customers, and be more resilient under the changing conditions.

Keywords: Airbnb, Survival Analysis, COVID-19

Jel Codes: M5, M21, M31

Öz

Bu araştırma, İstanbul'da Ocak-Ekim 2020 arasındaki COVID-19 döneminde Airbnb platformunda yer alan listelerin sağkalım (survival) olasılıklarını araştırmayı amaçlamaktadır. Araştırma amacı doğrultusunda, Airbnb listelerinin fiziksel ve mekansal özelliklerinin tahmin aracı olarak kullanıldığı sağkalım analizini yapmak için Cox'un Orantılı Tehlike Modeli kullanılmıştır. Araştırma bulgularına göre, fiziksel özellikler COVID öncesi bulgularla benzerlik gösterirken, mekansal özellikler COVID öncesi ve COVID sonrası karşılaştırmasında önemli farklılıklar göstermektedir. Çalışmanın alana iki yönlü katkısı vardır. Teorik olarak, araştırmanın bulguları, COVID-19 salgını sırasında değişen tüketici tercihlerinin daha iyi anlaşılması ve Airbnb listelerinin hayatta kalma oranlarını etkileyen faktörlerin belirlenmesinde mevcut literatüre katkı sağlamaktadır. Ayrıca bulgular, ev sahiplerine, özellikle COVID ile birlikte değişen mekansal müşteri tercihlerinin daha iyi anlaşılmasına yardımcı olabilecektir. Ayrıca, müşteri geri bildirimlerinin kalitesi ve miktarı, Airbnb ev sahiplerinin hizmet kalitelerini iyileştirmelerine, daha fazla müşteri çekmelerine ve değişen koşullara göre daha dirençli olmalarına yardımcı olabilecektir.

Anahtar Kelimeler: Airbnb, Sağkalım Analizi, COVID-19

JEL Kodları: M5, M21, M31

Introduction

The COVID-19 global pandemic affects the daily routines of people and organizations. The pandemic has changed the way businesses and institutions do their operations and also affect consumers decision making. The COVID-19 virus spread rapidly, and by December 2020, around 80 million people were infected, and 1.8 million people died (World Health Organization, 2020). Almost all countries have taken precautions to control the spread of the Coronavirus. Governments announced social isolation that encourages people to keep social distance and stay at home. As a result of those two precautions, mobility of people and their buying behavior have changed. This change affect mostly the service industries in which in-person interaction is required to deliver the service.

During the pandemic, service industries struggle to continue their operations, such as educational services, tourism, entertainment and recreational businesses, and the hospitality market (Guzman, Prema, Sood and Wilkes, 2020). Global tourism and the hospitality market have become more vulnerable with the given travel bans, cancelled intra-regional and international flights and events (Farmaki and Kladou, 2020). More specifically, as people forced to stay at home, the COVID outbreak affected the P2P (Peer-to-peer) accommodations industry even more and revealed its vulnerability to epidemics. To minimize their financial loss and satisfy their minimal number of customers, the P2P operated companies have taken several precautions. For instance, online platforms offer cleaning protocols that require a minimum of 24 hours of waiting between two bookings and cleaning products to use visitors. Although most reservations are cancelled, companies still offered a partial refund according to different circumstances to avoid making their existing customers dissatisfied (Airbnb, 2020b).

Despite the overall vulnerability level being too high in the hospitality market, one might also argue that the effect of the virus has not been the same for the whole market (OECD, 2020a). Therefore, it is essential to clarify why it is essential to study within the hospitality industry vulnerability. For instance, Airbnb hosts, hotel chains, medium and large-sized firms have greater access to financial sources. Therefore, it has expected them to manage this crisis more successfully than small businesses and non-professional (Bartik, Bertrand, Cullen, Glaeser, Luca and Stanton, 2020).

Moreover, the Airbnb market's hedonic price models show that the physical and locational advantages and information flows (such as online reviews) significantly influence listings' prices (Wang and Nicolau, 2017; Lawani, Reed, Mark and Zheng, 2019). Those characteristics might have contributed to listings' survival duration during the pandemic. Therefore, this study uses these two factors, i.e., availability of financial resources and differing physical and locational characteristics, to define the hospitality market's vulnerability levels.

The present paper aims to examine the factors that affected the hospitality industry's survival rates, using the data from one of the strongest players in the market, Airbnb. The paper investigates the survival probability of listings during seven months under the pandemic. The analysis focuses mainly on the locational and information-related aspects that potentially contributed to the Airbnb marketplace's survival. Here, survival is defined as the probability of remaining active in the market during the pandemic. Locational (spatial) attributes are defined as proximity to amenities such as tourist attractions, hospitals, public transportation and natural amenities.

This paper's remainder is structured as follows: in the next section, the literature review is discussed. The following section presents data retrieval and analysis. Then, methods and findings have been presented that followed by the conclusion in the final section.

Literature review

The improvement on the internet and mobile technologies changed the traditional business models by giving more empowerment to consumers with sharing economy platforms (Mody and Hanks, 2018; Murphy and Chen, 2016). Muñoz and Cohen (2017) define the sharing economy as a socio-economic system that enables the exchanges of products and services between individuals and organizations to increase the efficiency of underutilized resources. Sharing economy platforms encourage the collaborative consumption that refers to the peer-to-peer-based activity to gain, give and share access to products and services via the online platforms (Hamari, Sjöklint and Ukkonen, 2015, p. 1). The tourism and hospitality sector was significantly affected by the increase in sharing economy platforms, i.e., Airbnb (Richard and Cleveland, 2016; Alrawadieh, Guttentag, Cifci and Cetin, 2020). Although Airbnb hurts traditional hotels (Benítez-Aurioles, 2019; Dogru, Mody, and Suess, 2019), it provides a cost-benefit advantage to consumers that increase its market share rapidly (Bardhi and Eckhardt, 2012;

Barnes and Mattsson, 2016). At the same time, it encourages the micro-entrepreneurship to enter the market by sharing their rooms or houses to get extra income (Leoni, 2020).

Airbnb started its operations in 2008 in San Francisco and spread 100,000 cities around the world very fast. According to the current data, 5.6 million listings are online today, including entire houses, rooms, and shared rooms (Airbnb, 2020a). Airbnb's company vision emphasizes the message of making people connected while feeling at home. Their business model emphasizes the sharing responsibility of serving with all stakeholders (Airbnb, 2020a). Several studies supported that feeling at home is the main reason for customer motivations to stay in Airbnb instead of traditional hotels (Guttentag, 2015; So, Oh and Min, 2018; Konak, 2020; Alrawadieh and Alrawadieh, 2018).

Airbnb rooms or houses offer positive economic and social opportunities to its customers (Alrawadieh and Alrawadieh, 2018). Previous research highlighted that cost is the major economic factor in consumers' accommodation selection, and Airbnb accommodation offers a cheaper option than traditional accommodations (Guttentag, 2015; So et al., 2018). Moreover, feeling at home with household amenities, having more authentic local experience and social interactions, more novel travelling experiences and enjoyment make Airbnb more attractive for visitors (Guttentag, 2015; Tussyadiah, 2016; So et al., 2018).

To identify the visitors' motivations for using Airbnb, Guttentag, Smith, Potwarka and Havitz (2018) conducted empirical research. They collected 800 online surveys from Airbnb visitors and performed exploratory factor analysis using SPSS software. The results highlighted five motivational factors to choose to stay with Airbnb: interaction, home benefits, novelty, sharing economy ethos, and local authenticity. In the same vein, Konak (2020) collected 385 online surveys from Airbnb hosts to determine the factors that affect tourist Airbnb choice for their accommodation. Her findings point out that interaction, household benefits, sharing economy and loyalty are key factors that shape the consumers' preferences.

Previous research mainly focused on the customer perspective and neglected the host perspective regarding P2P accommodation. However, from the host perspective surviving in the market for the long term is another critical issue. Several studies have attempted to explain the determinants of accommodation survival probability of Airbnb listings (Gémar, Moniche and Morales, 2016; Brouder and Eriksson, 2013; Lado-Sestayo, Vivel-Búa and Otero-González, 2016). To date, previous studies indicated four essential factors that affect the survival of Airbnb listings. The first factor is the size (number of max quests, number of rooms) that affect the company's survival probability (Gémar et al., 2016). The second factor is the location that refers to accessibility and market concentration (Brouder and Eriksson, 2013). The next factor is a tourist destination's characteristics (Lado-Sestayo et al., 2016), and the last factor is acceptable management practices that increase the survival chance (Brouder and Eriksson, 2013; Gémar et al., 2016). To explore the determinants of listings' survival from the Airbnb listing data in Ibiza, Leoni (2020) performed survival analysis in the same vein. In her analysis of listing key attributes, Leoni (2020) identifies four characteristics of survival chance: characteristics of listings, location, local competition degree and managerial skills of hosts. In her study, it is also proposed that low listing quality caused the listing to be disappeared.

As emphasized from the existing studies above, location is one of the most influential factors on customer choice in terms of demand, price and profitability in the accommodation sector (Lado-Sestayo et al., 2016). Leoni (2020), in her study, investigated the survival determinants for a successful listing in the peer-to-peer accommodation industry and highlighted that better location as a competitive advantage for customers. Location refers to the proximity to the amenities such as tourist attractions, hospitals, public transportation and natural amenities. In contrast, from the host perspective, a better location is a critical factor that affects future investment when buying a new property. Therefore, from both consumer and host perspective, being close to popular tourist destinations is a critical advantage on survival probability (Gémar et al.; Lado-Sestayo et al., 2016). As a result, existing Airbnb listings are mostly concentrated in the city centres to be close to tourist places (Alizadeh, Farid, and Sarkar, 2018; Gutiérrez, García-Palomares, Romanillos, and Salas-Olmedo, 2017).

In addition to the location factor, consumers frequently search for others' opinions on online platforms to reduce the possible risks when deciding on accommodation (Goldsmith and Horowitz, 2006). Online reviews and ratings provide helpful information that affects potential customers' choice (Engler, Winter and Schulz, 2015; Park, Lee and Han, 2007). Therefore, online reviews have become a critical issue in the hospitality industry that affect consumers' purchasing (Xie, Chen and Wu, 2016). According to consumer reviews, for the visitors, the evaluation of accommodation options helps them decrease any travel risk (Papathanassis and Knolle, 2011). In their recent study, Lawani et al., (2019) conducted sentiment analysis to analyze the relationship between customers' reviews used as a quality indicator

and the Airbnb platform's identified price in the USA. Their results revealed that consumers are sensitive to reviews and rating on the platform. Therefore, better reviews and higher rating are indicators of quality that tends to set higher prices by hosts. Therefore, both the quality and quantity of consumer reviews are crucial for potential consumers' purchase intention (Chen and Chang, 2018) that provide better income to hosts.

Methodology

This section presents the data collection and analysis, respectively.

Data Collection

The dataset has been extracted from inside the Airbnb website with a time limit from March 2020 to October 2020. Since this study does not require "Ethics Committee Approval", Ethics Committee Permission document was not obtained. The dataset includes information about the listings' characteristics such as the type of rental (entire apartment, private or shared rooms), the number of listings per host, and reviews.

Additionally, each listing is geocoded that allows pinpointing the distribution of the listings in Istanbul. Geocoded data is commonly used for spatial analysis. Longitude and latitude coordinates are used to retrieve several locational characteristics. Open Street Maps (OSM) is used to extract the locational characteristics of rentals. OSM is a user-developed, crowd-sourced open-source map service, which includes information on land use in most developed and developing countries.

For the spatial analysis, the following information for each listing in Istanbul is extracted from the data:

- i) Mean distance to the nearest ten public transport including bus stops, metro stations and railway.
- ii) Mean distance to natural amenities. These include the sea, parks and forest.
- iii) Mean distance to touristic attractions such as museums, palaces and historical buildings.
- iv) Mean distance to the nearest ten hotels.
- v) Mean distance to the nearest ten hospitals.

The first four attributes are selected in line with previous literature. However, the fifth attribute, distance to hospitals, is added by researchers as it becomes more critical during the pandemic.

According to the first data extraction, Table 1 shows the summary statistics for both physical and locational attributes of the listings in Istanbul in January 2020 (pre-COVID) and October 2020 (post-COVID).

We have also reported the overall survival ratio, which indicates that 54% of the listings survived the shocks.

Table 1. Summary Statistics for Airbnb Listings in Istanbul

Variable	Pre-COVID		Post-COVID	
	Mean	Standard Deviation	Mean	Standard Deviation
Survived			0.542	0.498
Entire Apt.	0.692	.461	0.728	0.445
Hotel Rooms	0.041	.200	0.047	0.211
Private Rooms	0.258	.437	0.230	0.421
Shared Rooms	0.007	.083	0.006	0.0800559
Number of Reviews	23.684	37.779	32.491	46.043
Host Count	5.822	7.661	6.290	7.938224
Minimum Nights	2.631	7.889	2.794	10.14216
Distance to Shops	930.329	2519.291	894.28	2634.32
Distance to Transportation	618.305	1068.23	589.92	1004.36
Distance to Nature	2159.48	3453.36	1993.666	3478.61
Distance to Hospitals	2403.275	3471.832	2358.07	3598.576
Distance to Touristic Attractions	2405.338	3918.964	2271.74	3921.43
Distance to Hotels	2297.887	4241.015	2154.71	4289.541

According to the dataset, there are currently 6047 active listings in Istanbul, and Table 1 shows that most of the rentals are entire apartments. Note that Table 1 indicates the current type of rentals; while 72% of the apartments are rented as entire apartments, the percentage was 69% in the pre-COVID period. Moreover, on average, listings have received more reviews recently, and the average number of listings per host has increased in the post COVID period. Table 1 shows that the average distance to amenities has slightly decreased in the post-COVID period.

The following sub-section presents the data analysis used in this paper.

Data Analysis

This section presents the data analysis methods used in the present paper. To analyze the common attributes of the listings that survived the crises, we need to define a model where (i) physical characteristics of the rental and reviews, (ii) spatial attributes must be examined. This paper uses Cox's Proportional Hazard Model (Cox, 1972) for survival analysis, widely used with time-to-event type analysis. Cox's model is a semi-parametric survival model and preferable to other survival models as it does not impose any assumption on the functional form of the survival model presented below.

Time-to-event models examine the probability of a given event in a given period. The event, in our case, occurs when a listing is dropped out of the platform. The months in which the listing has been active in the platform is the survival time. We measure survival time starting from March 2020 to October 2020. Therefore, the listings dropped after this date are not observed, and the maximum survival time is seven. This means that our survival data is right-censored, which indicates that the event is not recorded during the study period.

On the contrary, if entry to the platform corresponds to an unknown date, the data is left censored. Since we are interested in the survival time under COVID-19, we will discard the left censor's potential implications and assume that the entry date is March 2020.

The model can be defined as follows:

$$h(t) = h_0(t)\exp(X_i\beta)$$

where $h(t)$ is the hazard rate and is a function of a set of explanatory variables X , including physical and spatial attributes of listings, $h_0(t)$ is the baseline hazard where $t=0$ in March 2020 and $t=7$ in October 2020. Finally, β are the coefficients to be estimated.

Note that the entry to and exit from the Airbnb platform is a costless decision that hosts freely post their properties or delete without inquiring about any costs. This means that during the COVID-19 period, hosts might have left but then returned to the platform at a later stage, and we cannot model this behaviour as survival. This is why we impose the condition of continuous activity on the platform at least for seven months during the pandemic. We then assume that if a listing left the platform in a given month and never turned back to the activity until October 2020, the host might have turned, for instance, to the long-term rental market. In continuous activity (March to October), we assume that the listing survived the crisis for seven subsequent months.

The following section discusses our findings regarding the Airbnb listing's survival analysis under COVID-19 related shocks.

Findings

Table 2 shows the outputs from Cox's proportional hazard model as defined by the paper. Hazard ratios are presented in the second column of the table in order to facilitate interpretations. According to table 2, findings are discussed under four primary attributes.

Table 2: Regression outputs from Cox’s proportional hazard model. Column (2) indicates hazard ratios.

	(1)	(2)
Variables	Cox Proportional Hazard Model	Cox Hazard Ratios
Entire Apartments (Ref. Private Rooms)	-0.298*** (0.081)	0.741*** (0.078)
Hotel Rooms	-0.427*** (0.156)	0.653*** (0.102)
Shared Rooms	0.253 (0.228)	1.288 (0.294)
Host Count	-0.079*** (0.022)	0.924*** (0.020)
Reviews	-0.245*** (0.016)	0.783*** (0.012)
Minimum Nights	0.045 0.030	1.046 0.032
Distance to Shops	-0.035 (0.023)	0.965 (0.023)
Distance to Touristic Attractions	-0.009 (0.044)	0.990 (0.044)
Distance to Transport	-0.010 (0.043)	0.990 (0.043)
Distance to Nature	0.061** (0.028)	1.062** (0.030)
Distance to Hospital	-0.124*** (0.047)	0.884*** (0.042)
Distance to Hotels	0.017 (0.022)	1.018 (0.023)
Observations	5,099	5,099

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

1: Types of rental; entire apartments, hotel rooms and shared rooms

The results indicate that the entire apartments and hotel rooms were more likely to remain on the platform when compared to private rooms. Considering the health and safety concerns visitors developed in this period (Hu, Yan, Casey and Wu, 2020; Gursoy and Chi, 2020), the finding regarding the entire apartments is an expected result. Moreover, hotel rooms have had a 35% more probability of surviving in the post-COVID period, as indicated by the odds ratios. The hosts of hotel rooms can be considered professional hosts with greater access to financial resources. Greater access to financial resources and the ability to conduct strategic management through hygiene-focused advertisements might have made these hosts more resilient to the shocks.

As far as shared rooms are concerned, even though the coefficient is not statistically significant, the coefficient's direction suggests that this type of rentals have had a lower survival likelihood. Most people have been less mobile, especially internationally, during the COVID-19 period due to general restriction policies or by choice even after the restrictions are lifted. This means that most of the visitors were domestic, and the purpose of their visits mainly was necessity driven. The results indicate that the change in consumer behaviour has led shared apartments to be vulnerable to closure. Of course, hosts

could have shifted their rental type from shared to entire apartments. This would also lead to a degree of decrease in revenues for larger apartments, where it is possible to generate higher profits by dividing lodging spaces.

Nevertheless, we observe that some of the hosts of shared rooms started to rent their properties as entire apartments or private rooms in the post-COVID period. Note that we have considered the current type of rental as a proxy of change in marketing strategy. The finding regarding the shared lodgings points out a potential shift in how the Airbnb platform operates. As mentioned in section 2, the Airbnb business model was built on peer-to-peer accommodation sharing and initially, subletting was the central idea. Our findings suggest that the marketplace will become either a platform where entire apartments or hotel rooms are predominantly rented, at least in the short run.

2: Host Count

The variable host count shows the total number of listings per host on the platform. Like the hosts of hotel-type listings, the hosts with multiple rentals represent professional hosts (Magno, Cassia and Ugolini, 2018). Our survival analysis suggests that the professional hosts have had a greater likelihood of survival on the platform. This might result from hosts' expertise and their ability to put forth strategic management practices, especially in terms of hygiene promoting advertisements.

3: Reviews

According to findings-increased survival probabilities, the variable reviews indicate the total number of reviews a listing has received. Online reviews are essential information sources for customers when deciding on a place to stay (Lawani et al., 2019). Our results indicate that reviews have played a significant role during the pandemic. Given the uncertainties and hygiene-related concerns, it is plausible to assume that recent visitors have sought as much information as possible about their chosen listings.

The finding regarding the physical aspects of the listings, host characteristics and reviews confirm previous studies that refer to the pre-COVID period. For instance, Leoni (2020) also finds that entire apartments and listings with higher number reviews and multiple listings per host have had a longer likelihood of activity between July 2015 and September 2016 in Ibiza. The only difference in this regard is that restrictions about minimum nights a listing can be rented have decreased the survival rates (even though insignificant) in our findings, unlike in the findings of Leoni (2020). This is an expected change considering the possibility that guests have been less willing to commit to a listing for more extended periods under uncertainties imposed by the pandemic.

Given the similar results regarding the longevity of Airbnb listings found in the pre-COVID period, it seems plausible to assume that the rental types of as entire apartments, information flows in the form of reviews and expertise as proxied by the number of listing per host and in the form of hotel rooms point out to a degree of resilience to shocks.

4: Spatial Attributes and General Locational Aspects

However, spatial attributes and general locational aspects illustrate a different effect under COVID-19 related shocks than previous findings on profitability and advantage profiles of listings on the Airbnb platform.

From the results regarding the spatial dimension of vulnerability, it becomes clear that the rental location has also affected the likelihood of survival. In particular, rentals that are near hospitals have been more vulnerable to closure. Meanwhile, the likelihood of remaining in the platform has increased if rentals are located by natural amenities. That the natural amenities have become significant determinants of survival rates on the platform indicates a general tendency to seek isolation and avoid the densely populated location. On the other hand, the adverse finding regarding proximity to hospitals might result from the psychological costs of being around hospitals under the threat of a contagious disease. Also, the result might pertain to the fact that there have been considerable losses in demand for listings that targeted health tourists.

The findings afford us with several implications that are specific to the COVID-19 period. While previous literature shows that Airbnb listings receive higher demand and are priced high when located by such amenities as tourist attraction points, shopping hubs and public transportation (Gibbs, Guttentag, Gretzel, Morton and Goodwill, 2018; Wang and Nicolau, 2017), the results of this research suggest that previously advantageous locations have not contributed to survival probabilities of the listings. On the contrary, even though the coefficients are statistically insignificant, the output from Cox's proportional hazard model suggests -at least in direction- that proximity to previously attractive

amenities have had the potential to create a degree of vulnerability to recent shocks. Taken government precautions might explain this finding, changed the profile of visitors and altered consumer behaviour. According to the OECD (2020a) report, more than 50% of the global population live in cities. Crowded cities and tourism there is an integral part of the economy.

Similarly, international tourism decreases by 60% in 2020 with the COVID precautions taken by governments (OECD, 2020b). Because living in a crowded region decrease the implementation of social distancing and increase the risk of spreading Coronavirus. Governments first shut down the tourism businesses, which are attractive and popular, to control the virus. As mentioned above, restrictions on international travel and general mobility have generated a hospitality market of local visitors, who mostly travelled out of business necessity. This type of travelers might have been less interested in touristic sites, especially during the pandemic. Finally, Table 2 presents that the local competition between Airbnb listings and traditional hotels have not been a significant determinant of longevity. We leave the discussion on the relationship between the traditional and modern players in the hospitality market for further studies.

Conclusions

This paper investigates the survival probability of Airbnb listings in Istanbul between January and October 2020, which is known as the Post-COVID period. Along with the literature, we use Cox's Proportional Hazard Model to conduct survival analysis, where the physical and spatial attributes of Airbnb listings are used as predictors. The findings show that while physical attributes show similarity to previous findings, spatial attributes show substantial differences in a Pre-COVID and Post-COVID comparison.

Physical attributes include the type of rentals such as entire apartment, hotel rooms, private or shared rooms, number of reviews, host count and minimum night stay. Our findings present that with the COVID, the number of entire apartment rentals has increased only by 3 per cent. Although the increase is somewhat low, most of the customers are domestic visitors who started to prefer the entire apartment or private rooms given the international travel restrictions. Moreover, spatial (locational) attributes refer to proximity to amenities. The findings emphasize that spatial attributes have a significant effect on survival likelihood. Our findings highlight essential changes with the pandemic that visitors have mostly preferred the rentals close to the natural amenities and far from hospitals.

Moreover, customers' preferences were shifted from renting listings by popular amenities such as tourist attractions, shopping malls, public transportations to amenities that provide more isolation. Consistent with the literature, hotel type listings' survival rate is higher than Airbnb hosts. The hosts of hotel type listings have the advantage of accessing financial resources and professional management to adapt their promotional and operational activities according to new customer preferences.

The findings of this research provide both theoretical and practical contributions. This paper's empirical findings indicate a new understanding of changing consumer preferences and identify the factors that affect Airbnb listings' survival rates during the COVID-19 pandemic. Besides, the impacts of the COVID-19 pandemic will continue and affect the industries that require in-person interaction. This research highlighted the shifted consumer preferences during the pandemic from more popular and shared amenities to isolated ones. The new normal is announced as more isolation. Therefore, service industry practitioners need to increase their service quality by adapting their products according to governments' new regulations. Changing the offered product requires new pricing, employment, and promotional strategy to meet customer needs and attract them. For instance, our findings directly point to increased privacy and isolation and indirectly to hygiene concerns. This means that hosts and general hospitality managers should address these concerns when re-designing lodging spaces and their promotional messages. Our findings highlighted that the professional hosts who are renting the entire apartment next to the natural amenities might become more successful in the future by providing more isolation for their customer. Customer preferences are already shifted with the pandemic from popular tourist attractions to isolated natural places. This is an excellent opportunity for local authorities to promote rural tourism. Rural tourism can foster rural economics and mitigate regional disparities in economic development and growth by generating jobs and supporting the retail market (Wilson, Fesenmaier, Fesenmaier and Van Es, 2001). Based on our findings, we can conclude that visitors will prefer suburban and rural areas by natural amenities as attractive tourism destinations, at least in the short run. Local authorities and municipalities might benefit from this trend to attract tourists to rural areas by following new strategies in line with government rules and regulations.

However, the generalizability of our findings is subject to certain limitations. The findings of this research reflect Airbnb facilities in Turkey. Therefore, different destinations and regions might highlight

different patterns in survival probabilities. Also, the timeframe of this research includes January-October 2020, a period of recession. Future studies can compare the data from different times, such as during and after the COVID-19 pandemic, to see the differences regarding location and number of reviews effect on the survival. Also, future studies should be undertaken to explore the relationship between traditional and modern players in the hospitality market for further studies to shed light on the differences.

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References

- Airbnb (2020a). About us, <https://news.airbnb.com/about-us/>, (Retrieved Date: 20.12.2021).
- Airbnb (2020b). Does the Extenuating Circumstances Policy apply to my reservation during the COVID-19 pandemic?, <https://www.airbnb.com/help/article/2823/does-the-extenuating-circumstances-policy-apply-to-my-reservation-during-the-COVID19-pandemic>, (Retrieved Date: 21.12.2021).
- Akarsu, T. N., Foroudi, P., and Melewar, T. C. (2020). What makes Airbnb likeable? Exploring the nexus between service attractiveness, country image, perceived authenticity and experience from a social exchange theory perspective within an emerging economy context. *International Journal of Hospitality Management*, 91, 102635.
- Alizadeh, T., Farid, R., and Sarkar, S. (2018). Towards understanding the socio-economic patterns of sharing economy in Australia: an investigation of Airbnb listings in Sydney and Melbourne metropolitan regions. *Urban Policy and Research*, 36(4), 445-463.
- Alrawadieh, Z., Guttentag, D., Cifci, M. A., and Cetin, G. (2020). Budget and midrange hotel managers' perceptions of and responses to Airbnb. *International Journal of Contemporary Hospitality Management*, 32(2), 588-604.
- Alrawadieh, Z., and Alrawadieh, Z. (2018). Exploring entrepreneurship in the sharing accommodation sector: Empirical evidence from a developing country. *Tourism Management Perspectives*, 28, 179-188.
- Bardhi, F., and Eckhardt, G. M. (2012). Access-based consumption: The case of car sharing. *Journal of consumer research*, 39(4), 881-898.
- Barnes, S. J., and Mattsson, J. (2016). Understanding current and future issues in collaborative consumption: A four-stage Delphi study. *Technological Forecasting and Social Change*, 104, 200-211.
- Bartik, A. W., Bertrand, M., Cullen, Z., Glaeser, E. L., Luca, M., and Stanton, C. (2020). The impact of COVID-19 on small business outcomes and expectations. *Proceedings of the National Academy of Sciences*, 117(30), 17656-17666
- Benítez-Aurioles, B. (2019). Is Airbnb bad for hotels?. *Current Issues in Tourism*, 1-4.
- Brouder, P., and Eriksson, R. H. (2013). Staying power: What influences micro-firm survival in tourism?. *Tourism Geographies*, 15(1), 125-144.
- Chen, C. C., and Chang, Y. C. (2018). What drives purchase intention on Airbnb? Perspectives of consumer reviews, information quality, and media richness. *Telematics and Informatics*, 35(5), 1512-1523.

- Dogru, T., Mody, M., and Suess, C. (2019). Adding evidence to the debate: Quantifying Airbnb's disruptive impact on ten key hotel markets. *Tourism Management*, 72, 27-38.
- Engler, T. H., Winter, P., and Schulz, M. (2015). Understanding online product ratings: A customer satisfaction model. *Journal of Retailing and Consumer Services*, 27, 113-120.
- Farmaki, A., and Kladou, S. (2020). Why do Airbnb hosts discriminate? Examining the sources and manifestations of discrimination in host practice. *Journal of Hospitality and Tourism Management*, 42, 181-189.
- Gémar, G., Moniche, L., and Morales, A. J. (2016). Survival analysis of the Spanish hotel industry. *Tourism Management*, 54, 428-438.
- Gibbs, C., Guttentag, D., Gretzel, U., Morton J., and Goodwill A. (2018). "Pricing in the sharing economy: a hedonic pricing model applied to Airbnb listings." *Journal of Travel and Tourism Marketing*, 35(1), 46-56.
- Goldsmith, R. E., and Horowitz, D. (2006). Measuring motivations for online opinion seeking. *Journal of interactive advertising*, 6(2), 2-14.
- Gutiérrez, J., García-Palomares, J. C., Romanillos, G., and Salas-Olmedo, M. H. (2017). The eruption of Airbnb in tourist cities: Comparing spatial patterns of hotels and peer-to-peer accommodation in Barcelona. *Tourism Management*, 62, 278-291.
- Guttentag, D. (2015). Airbnb: disruptive innovation and the rise of an informal tourism accommodation sector. *Current issues in Tourism*, 18(12), 1192-1217.
- Gursoy, D., and Chi, C. G. (2020). Effects of COVID-19 pandemic on hospitality industry: review of the current situations and a research agenda. *Journal of Hospitality Marketing and Management*, 29(5), 527-529.
- Guzman, N., Prema, M, Sood, R. and Wilkes, D. (2020). Coronavirus' impact on service organizations: Weathering the storm. McKinsey, <https://www.mckinsey.com/business-functions/operations/our-insights/coronavirus-impact-on-service-organizations-weathering-the-storm>, (Retrieved Date: 30.12.2021).
- Hamari, J., Sjöklint, M., and Ukkonen, A. (2015). The sharing economy: Why people participate in collaborative consumption. *Journal of the association for information science and technology*, 67(9), 2047-2059.
- Hu, X., Yan, H., Casey, T., and Wu, C. H. (2020). Creating a safe haven during the crisis: How organizations can achieve deep compliance with COVID-19 safety measures in the hospitality industry. *International Journal of Hospitality Management*, 92, 102662.
- Istanbul Provincial Directorate of Culture and Tourism. (2020). İstanbul Turizm İstatistikleri – 2020, <https://istanbul.ktb.gov.tr/TR-276895/istanbul-turizm-istatistikleri--2020.html>, (Retrieved Date: 24.12.2021).
- Konak, S. (2020). The reasons of foreign tourists choose of Airbnb when they has visited İstanbul. *International Journal of Contemporary Tourism Research*, 4(1), 79-90.
- Lado-Sestayo, R., Vivel-Búa, M., and Otero-González, L. (2016). Survival in the lodging sector: An analysis at the firm and location levels. *International Journal of Hospitality Management*, 59, 19-30.
- Lawani, A., Reed, M. R., Mark, T., and Zheng, Y. (2019). Reviews and price on online platforms: Evidence from sentiment analysis of Airbnb reviews in Boston. *Regional Science and Urban Economics*, 75, 22-34.
- Leoni, V. (2020). Stars vs lemons. Survival analysis of peer-to peer marketplaces: The case of Airbnb. *Tourism Management*, 79, 104091.
- Magno, F., Cassia, F., and Ugolini, M. M. (2018). Accommodation prices on Airbnb: effects of host experience and market demand. *The TQM Journal*, 30(5), 608-620.
- Mody, M., and Hanks, L. (2019). Consumption authenticity in the age of the sharing economy: the keys to creating loyal customers who love your brand. *Journal of Travel Research*.
- Muñoz, P., and Cohen, B. (2017). Mapping out the sharing economy: A configurational approach to sharing business modeling. *Technological Forecasting and Social Change*, 125, 21-37.

- Murphy, H. C., and Chen, M. M. (2016). Online information sources used in hotel bookings: Examining relevance and recall. *Journal of Travel Research*, 55(4), 523-536.
- OECD (2020a). Coronavirus (COVID-19): SME Policy Responses, <https://www.oecd.org/coronavirus/policy-responses/coronavirus-covid-19-sme-policy-responses-04440101/>, (Retrieved Date: 20.12.2021).
- OECD (2020b). Policy Brief on responses in cities and regions on the COVID-19 crisis, <https://www.oecd.org/coronavirus/policy-responses/covid-19-protecting-people-and-societies-e5c9de1a/>, (Retrieved Date: 13.03.2021).
- OECD (2020c). OECD Policy Responses to Coronavirus (COVID-19), Tourism Policy Responses to the Coronavirus (COVID-19), <https://www.oecd.org/coronavirus/policy-responses/tourism-policy-responses-to-the-coronavirus-covid-19-6466aa20/#section-d1e216>, (Retrieved Date: 13.03.2021).
- Papathanassis, A., and Knolle, F. (2011). Exploring the adoption and processing of online holiday reviews: A grounded theory approach. *Tourism Management*, 32(2), 215-224.
- Park, D. H., Lee, J., and Han, I. (2007). The effect of online consumer reviews on consumer purchasing intention: The moderating role of involvement. *International journal of electronic commerce*, 11(4), 125-148.
- Poon, K. Y., and Huang, W. J. (2017). Past experience, traveler personality and tripographics on intention to use Airbnb. *International Journal of Contemporary Hospitality Management*, 29 (9), 2425-2443.
- Richard, B., and Cleveland, S. (2016). The future of hotel chains: Branded marketplaces driven by the sharing economy. *Journal of Vacation Marketing*, 22(3), 239-248.
- So, K. K. F., Oh, H., and Min, S. (2018). Motivations and constraints of Airbnb consumers: Findings from a mixed-methods approach. *Tourism Management*, 67, 224-236.
- Talty A. (2019). Bangkok Is The Most Visited City In The World...Again, <https://www.forbes.com/sites/alexandratalty/2019/09/04/bangkok-is-the-most-visited-city-in-the-world-again/?sh=4bee68695f1b>, (Retrieved Date: 20.12.2021).
- Tran, T. H., and Filimonau, V. (2020). The (de) motivation factors in choosing Airbnb amongst Vietnamese consumers. *Journal of Hospitality and Tourism Management*, 42, 130-140.
- Tussyadiah, I. P. (2016). Factors of satisfaction and intention to use peer-to-peer accommodation. *International Journal of Hospitality Management*, 55, 70-80.
- Tussyadiah, I. P., and Pesonen, J. (2018). Drivers and barriers of peer-to-peer accommodation stay—an exploratory study with American and Finnish travellers. *Current Issues in Tourism*, 21(6), 703-720.
- Wang, D., and 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.h
- Wilson, S., Fesenmaier, D. R., Fesenmaier, J., and Van Es, J. C. (2001). Factors for success in rural tourism development. *Journal of Travel research*, 40(2), 132-138.
- World Health Organisation, (2020). WHO Coronavirus Disease (COVID-19) Dashboard. Retrieved December 20, 2020, from <https://COVID19.who.int/>
- Xie, K. L., Chen, C., and Wu, S. (2016). Online consumer review factors affecting offline hotel popularity: evidence from tripadvisor. *Journal of Travel and Tourism Marketing*, 33(2), 211-223.