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EXPANDING ECONOMIC OPPORTUNITY THROUGH



in Thessaloniki, Greece



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ABSTRACT

In collaboration with Creativity Platform, we explored the growth of Airbnb in Thessaloniki, Greece through geospatial and statistical analyses of listings to determine factors influencing revenue generation. We also conducted interviews with hosts, management services, a tourism official, and a hotel manager. Airbnb listings have expanded rapidly in the city over the past four years and are centrally located. Revenue generation is dependent on listing features including number of guests accommodated, host characteristics as such superhost status, and characteristics that indicate professionalism such as instant booking and cleaning fees. At present, Airbnb Experiences are not offered, limiting the economic opportunity of the platform to hosts and direct support services.



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AUTHORSHIP

Team members Daniel Crosby, Jean Furter, and Brooke Pierce all contributed equally to the research of this report. Throughout the writing of this report, members contributed to the editing of each section, and contributed to the methods of the project in different ways. Interviews were conducted by pairs or the whole group and each member was assigned a different role. The creation of maps was led by Daniel, and the analysis of data was split up evenly between Brooke and Jean.

The writing process was collaborative throughout the duration of the project. This allowed the group to stay focused and well-organized.

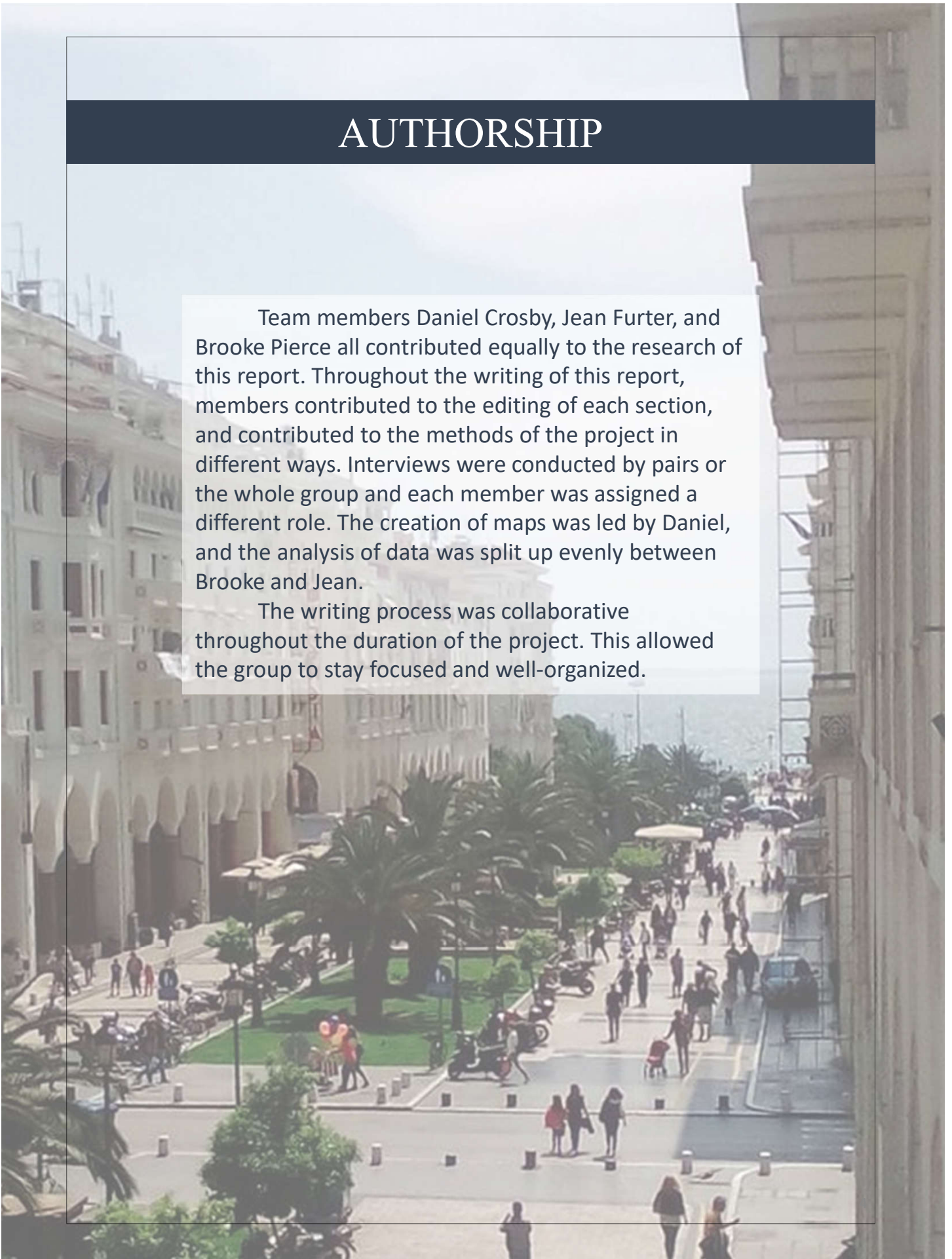


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INTRODUCTION

Airbnb was founded in 2008 and has quickly become one of the most recognized symbols of both the sharing economy (Zervas, Proserpio, Byers, 2016) and disruptive innovations (Guttentag, 2013). The platform has made it possible for anyone with space (e.g., a house, apartment, or room) or valued skills (e.g., dancing, tour guiding, hiking, cooking), to make money. Presently, Airbnb has over 4 million listings in 191 countries, with many cities also offering opportunities to connect with local services through Airbnb's "experiences" program (Airbnb, 2018). As an easily accessible online platform, Airbnb "leverages information technology to empower individuals, corporations, nonprofits and governments with information that enables distribution, sharing and reuse of excess capacity in goods and services" (Heinrichs, 2018, p.2).

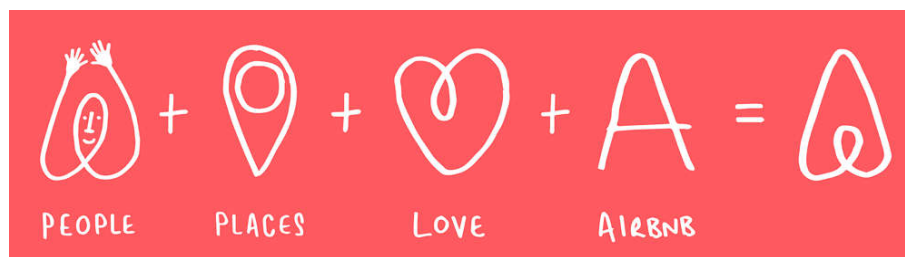
Scholarship on Airbnb has explored motivations of tourists to select Airbnb (Guttentag, Smith, Potwarka, Havitz, 2017), factors influencing prices of Airbnb (Zhang, Chen, Han, Yang, 2017), and Airbnb's impact on incumbent firms such as hotels and tourism industry (Guttentag, 2013). An online survey of 800 Airbnb guests conducted in 2017, revealed that consumers value the interactions offered, the benefits of home, the novelty, the local authenticity, and the ethos of the sharing economy (Guttentag, Smith, Potwarka, Havitz, 2017). Zhang et al. (2017) used a geographically weighted regression analysis of Airbnb listings in Nashville, USA, to show that listings closer to venues such as the convention center, are more valued and therefore higher priced. The same relationship has been observed in Athens, where the majority of Airbnb listings are concentrated in the city center (Inside Airbnb, 2017). However, in Athens there are also Airbnb listings that follow the metro away from the city (Ministry of Infrastructure, Transport, and Networks, 2014; Inside Airbnb 2017). This indicates that while there is a particularly strong correlation between Airbnb location and city centers, possibly due to the proximity of tourist attractions, there is also a correlation between transportation and Airbnb locations in some cities.

Despite its growing popularity, a growing body of research has examined the negative effects of Airbnb on local economies and communities. In Boston, studies suggest that the increase in Airbnb listings has reduced the number of long-term rental properties on the market and led to higher rents for local residents (Horn and Merante 2017; Boston.com, 2018). In Barcelona, Spain, Airbnb has been banned from offering short-term rentals as residents complained about tourists staying at Airbnb listings having loud parties and disrupting close-knit neighborhoods and life in the city (Badcock, 2017; Santolli 2006).

INTRODUCTION

Our sponsor, Creativity Platform, an organization in Thessaloniki, Greece, working on economic development issues, wanted to better understand the impact Airbnb has had on the city in the context of expanding tourism. Tourism has expanded rapidly in Thessaloniki since 2015. Between 2017 to 2018 the number of tourists coming from Cyprus, Turkey and the US has increased by 1%, 8%, and 20% respectively (GBR Consulting, 2018). In the same period, the number of international arrivals to the Thessaloniki International Airport has increased by 13% (GBR Consulting, 2018). In 2016 international arrivals decreased by 1%, but in 2017 international arrivals increased by 9.8% (GBR Consulting, 2016; 2017). To correspond, Airbnb listings have increased rapidly in Thessaloniki from just a handful in 2011 to 1,822 in 2018 (Inside Airbnb, 2018). Currently, little is known of the effects of Airbnb on the economy of Thessaloniki, and whether its effects are limited to certain geographic areas or social demographic sectors. As Airbnb listings operate less as occasional rental space and more as permanent tourist accommodation facilities, support services such as cleaning agencies, building contractors, and even co-hosts/agencies, are needed to manage the industry.

Our goal was to explore the potential of Airbnb to create more accessible economic opportunities throughout the city of Thessaloniki. Using a geographic information system (GIS) we analyzed the spatial distribution of Airbnb listings within the city in relation to transportation lines and historic sites. We examined how location was associated with listing price, guest ratings, and popularity. To understand what factors contribute to revenue generation, as well as to identify how hosts think that Airbnb has affected them and the rest of the city, we interviewed a wide selection of hosts from different backgrounds and conducted statistical analysis of listing data. Finally, we participated in a workshop set up by our sponsor with the purpose of informing potential and current hosts on the current state of Airbnb in Thessaloniki.



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The development of the new sharing economy

The sharing economy is a way of sharing resources and services through a community based platform. While the sharing economy is not new, what we currently refer to as the sharing economy has its origins in 1995 with the founding of eBay and Craigslist, now mainstream marketplaces for the recirculation of goods (Schor, 2014). The new sharing economy allows people to make money from existing assets. At its current rate of growth, the sharing economy is estimated to increase to \$335 billion in 2025 from its size in 2014 of \$14 billion (Radcliffe, 2017).

Many of the original sharing economy platforms, including eBay and Craigslist, were propelled by nearly two decades of heavy acquisition of cheap imports that led to a proliferation of unsold items (Schor, 2011). In addition, the rise of the internet and sophisticated software has reduced the traditionally high costs for business transactions, allowing anyone to participate without a business license or dedicated business investments. Consequently, by 2010 many similar recirculation platforms had launched, including ThredUp and Threadflip for apparel, free exchange sites like Freecycle and Yerdle, and barter sites such as Swapstyle.com (Schor 2014). Today, online exchanges exist for all sorts of assets including furniture and books.

extensive examinations of the recent growth of the sharing economy, sharing economy activities fall into four broad categories: the recirculation of goods, exchange of services, sharing of productive assets, and increased utilization of durable assets. Non-monetized initiatives such as tool libraries have seen a revival in higher-income countries, supported by digital platforms that offer connections. These innovations can provide people with opportunities to supplement regular income streams. Similarly, monetized service exchanges like TaskRabbit, provide opportunities for people to earn money by completing tasks for others. In contrast to other platforms, time banks have not grown rapidly. The sharing of productive assets or space are essentially cooperative efforts, including such strategies as co-working spaces or communal offices. Co-working platforms include companies that connect freelancers, entrepreneurs, and work-from-home employees to their peers in a virtual workspace. The aim is for production, not consumption, and as such include educational platforms such as Skillshare.com and even Wikipedia that aim to democratize access to knowledge and promote peer instruction.

The sharing of durable goods and other assets, notes Schor (2014), became increasingly more economically attractive following the 2009 global recession. In higher-income countries,

According to Juliet Schor (2014), and her

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household purchase products or property that was not used to capacity suddenly held greater value. Zipcar, a company that placed vehicles in convenient urban locations and offered hourly rentals, innovated such efforts, but since similar initiatives have proliferated with programs such as RelayRides (car rental), Uber (rideshare), Hubway (bicycle sharing). In 1999, Couchsurfing offered the first sharing economy efforts to share lodging or accommodation. And this idea of pairing travelers with people who offer space led to the development of Airbnb.

Given the diversity of platforms and activities, motivations for participation in the new sharing economy differ. As noted by Schor (2014, p. 5), “sharing is not just a relic of pre-modern societies; such practices remain more common in working-class, poor, and minority communities.” While some participants may be drawn by the novelty of the platforms, participants tend to be motivated by economic, environmental, and social factors. Some people may rely on the sharing economy for its supplemental income while others have several incomes. Assets shared through the sharing economy are often cheaper than those bought directly from a company, in part because by excluding the “middlemen” producer costs are lower. A comparative analysis of hotel and Airbnb accommodations in Los Angeles, Seattle, Boston, Sydney, Paris, and London found that Airbnb listings are 30-60% cheaper than hotels around the world (Yaraghi & Ravi, 2017). The

platforms also allow people to earn money in ways that had not previously been safely or easily available, and earning can be done in addition to existing employment and income avenues.

In addition to their economic pull, many sharing sites advertise themselves as green and present sharing as a way to reduce carbon footprints. The ethos among sharers is that sharing reduces the intensive resource use of dominant ways of accessing goods and services, including hotels and taxis. Users are also motivated by a desire to increase social connections. Platforms such as Airbnb have marketed themselves on principles of meeting new people or getting more connected with neighborhoods and communities. While hosting strangers can entail risk, the platform reduces risk by posting information on users via feedback and ratings (Schor, 2014).

Finally, users are also motivated by a commitment to social transformation (Dubois, Schor, Carfagna, 2014). In her assessments of connected consumption, Juliet Schor has found that respondents emphasize the value of sharing and collaboration, being highly critical of capitalism and the operation of the market. As Schor argues, especially in the aftermath of the financial crisis, the positive narrative of the new sharing economy of “doing good, building social connections, saving the environment,

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and providing economic benefits to ordinary people” was hard to resist (Schor, 2014, p. 8). However, she suggests that the movement has not universally delivered on this grassroots, inclusive agenda. Critics of the new sharing economy platforms see them as architects of a growing socioeconomic class on the edge of economic security, and argue that the motivations and impetus for sharing is desperation (Roose, 2014). New York Times columnist, Friedman (2013), writes that more than 50% of Airbnb users depend on the money made from the platform to pay their rent or mortgage.

Airbnb as an exemplar disruptive innovation

The online platform Airbnb accounts for a significant amount of the sharing economy. This online platform is a community marketplace for people around the world to list, discover, and book accommodations and services (Airbnb, 2018). Airbnb was founded in August of 2008 and is based in San Francisco, California (Airbnb, 2018). Airbnb experienced relatively slow, unexceptional growth from 2008 to 2011 followed by an explosive growth from 2012 onward caused by the greater recognition of Airbnb by the mainstream (Guttentag, 2015). Airbnb is now an international company with a net worth of \$31 billion (Zervas, Proserpio, Byers, 2015; Jaaskelainen, 2017). Airbnb currently operates in more than 65,000 cities and 191 countries, with a total of over 3 million

accommodations and over 200 million guests (Airbnb, 2018). This monumental growth was, for the most part, built from the ethos of the sharing economy (Guttentag, 2015) – that someone could rent out additional unused space in their home to tourists and give them the kind of personal experience that would allow tourists to truly appreciate a city and its residents. The platform also provides a measure of security for both the host and the guest by allowing for both to communicate with each other before and during the guest’s stay. The platform also allows for both the host and the guest to be reviewed on a 5-star scale. This helps hosts and guests to understand previous opinions on their counterpart and helps guests to choose hosts who will provide a positive experience. It also allows hosts to choose whether to accept or deny bookings based on a guest’s rating. This helps them to choose whether or not to host a particularly messy, rude, or otherwise unwanted guest. Airbnb is a business venture between the company and the hosts who rent out their space for money. The Airbnb platform takes a minimum 3% fee from the host, plus many more fees in some countries, in exchange for the service of accommodation listings (Guttentag, 2015). In addition, the company provides a \$1 million liability coverage per listing in order to protect hosts against claims and cover property damage, although this coverage is not currently available in Greece (Airbnb, 2018).

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The motivations of individuals to engage with the Airbnb platform as either hosts or guests have been studied extensively. A case study on Airbnb in Athens, involving semi-structured, in-depth interviews with 15 hosts, revealed that both monetary and social resources motivated host engagement (Lemonis, 2015). Lemonis concluded that hosts used Airbnb as an opportunity to escape routine and for the experience of socializing with and befriending international travelers. The study also suggests that hosts felt more inclined to participate in the public life, and used the opportunity of being a host to take guests around the city, exploring Athens in a way they had not before. For guests, Airbnb offers an opportunity to interact with locals and experience different cultures firsthand (Boswijk and Oskam, 2016). This is corroborated by Guttentag et al. (2017) who identify five broad categories that influence a person's decision to choose Airbnb over traditional tourist accommodations: interaction, home benefits, novelty, sharing economy ethos, and local authenticity (Guttentag, Smith, Potwarka, Havitz, 2017). The researchers conducted a survey through Facebook, Mechanical Turk (MTurk), Twitter, Reddit, and by sending the survey to hosts and asking them to forward it to their recent guests and analyzed the results using one-way ANOVA, Welch, and chi-square tests. They got 923 responses from this survey (Guttentag, Smith, Potwarka & Havitz, 2017).

By removing the need for hosts to own additional property in order to rent someone a room, house or apartment, Airbnb has revolutionized the short-term rental and tourism industry (Guttentag, 2015). Consequently, Airbnb is an example of a disruptive innovation in that it has permanently changed the tourism market (Guttentag, 2015). Following disruptive innovation theory, Airbnb began by appealing to the low end of the market by being generally cheaper than more traditional products, in this case hotels. As a sharing economy, the aim was not to have high profit margins, but rather offer hosts low margins but also limited earnings. However, over time Airbnb improved through a series of additional innovations, and now viewed as both an economic opportunity and investment for those with capital. Expanding, formalizing, and making the spaces available more routine and dependable resulted in a slow growth of the product's consumer base (Guttentag 2015). This, consequently attracted more mainstream interest from both hosts and guests and propelled faster growth. Airbnb as a provider of temporary rental accommodation is now rivaling traditional industries such as hotels and real estate agencies.

While boosters of such disruptive innovations claim that these new approaches yield utopian outcomes – the empowerment of ordinary people, efficiency, and lower environmental

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burdens – critics denounce them for being about economic self-interest rather than sharing, and for being predatory and exploitative (Schor, 2014). Tom Slee, who writes about the technology industry and who, until recently, gathered data on Airbnb in a similar way to Inside Airbnb, argues in *Jacobin*, a left-wing magazine published in New York, that despite Airbnb's claim that its users are single individuals earning extra money, half the revenue generated in New York City accrues to hosts with multiple listings, revealing that Airbnb has become more of a commercial rental property venture (Slee, 2014).

Airbnb can cause problems for those who want to live in a city with a high concentration of Airbnb listings. A high concentration of Airbnb listings in certain areas of cities can lead to a severe lack of affordable housing for residents. A study conducted on the concentration of Airbnb listings in Barcelona, Spain by Gutiérrez, J., García-Palomares, J. C., Romanillos, G., and Salas-Olmedo, M. H. (2017) from the Universidad Complutense de Madrid, identified proximity to tourist attractions and the hospitality and entertainment industries as the best predictor of Airbnb concentration. Data from Inside Airbnb was used to identify the spatial distribution of Airbnb listings in comparison to hotels and tourist attractions through the use of ArcGIS. Also, spatial correlation tools and multiple regression analysis were used

to identify trends that suggested Airbnb listings are located in the same areas that many residents want to live. In 2017, in Barcelona, the presence of tourists in residential areas in the city center had expanded rapidly with 18,531 listings, benefiting tourists but limiting the availability of housing for residents and creating a type of tourist only zone (Gutiérrez, et al., 2017). In such cases, it can become difficult for residents to find housing in their home city (Guttentag, 2015).

The reproductions of social hierarchies have also been observed in host-guest relationships, as a recent study reported evidence of racial discrimination among Airbnb users, with non-black hosts able to charge 12% more to blacks for comparable properties (Edelman, Luca, 2014). The reproduction of class and racial biases and hierarchies by sharing economy sites suggests that to achieve the potential of equality may require democratizing the ownership and governance of the platforms (Schor 2014). Fairbnb is one such platform that collects fees from hosts, but that money is then used by the local community to improve their neighborhood (Fairbnb.coop, 2016). The presence of tourists themselves has also caused problems in certain cities. For example, in Barcelona, Spain, Airbnb has been banned from offering short-term rentals as residents complained about tourists staying at Airbnb listings having loud parties and disrupting close-knit neighborhoods and life in the city

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(Badcock, 2017; Santolli 2006).

People are also choosing not to use Airbnb. Many hosts report negative aspects of hosting, including feeling drained of energy from constantly having people in their house, having to keep up with constantly changing regulations and government legislation, and the stress of keeping up with their online account and presenting a positive environment, despite difficult customers (Lemonis, 2015). Guests also reflect negative experiences with Airbnb, including lack of amenities offered, limited flexibility in arrival times, limited information about the area and lack of cleanliness (Chiang, 2017).

Airbnb as an economic opportunity in

crisis-hit Greece

In 2016, Greece was the European country with the highest unemployment rate at 26 percent (Vox, 2015), see Figure 1. In 2008, the global economic recession sent Greece into an economic crisis that continues to endure today. According to an article in *The Guardian* by Helena Smith, as of 2017, the country's economic output had fallen by 26% and 15% of people earn below the extreme poverty threshold (Smith, 2017).

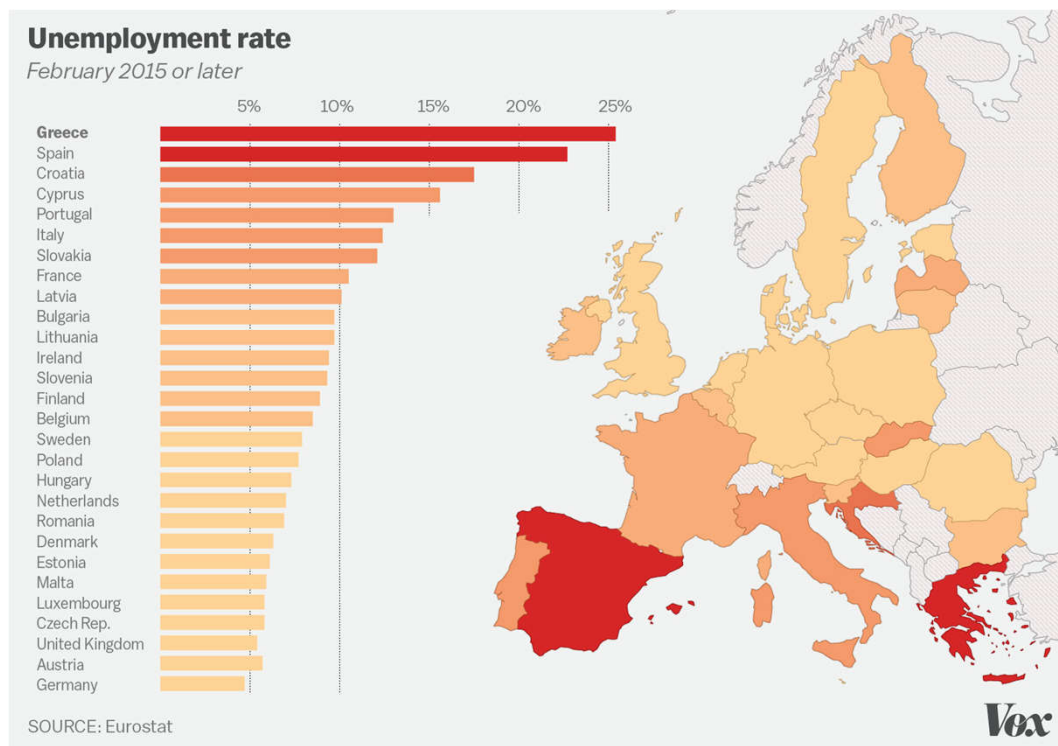


Figure 1. Unemployment rate across the EU (Vox, 2015)

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The net wealth of Greek households has fallen by about 22%. Many people have also had to deal with cuts to pensions that have made it hard for them to buy essentials (Smith, 2017). People are making so little money that it is hard for them to survive. This kind of economic depression has caused a lot of hardship for Greeks. The crisis has lasted for more than 10 years and at this point many Greeks cannot see a way out. According to Chryssa Christodoulaki, as cited in Smith 2017, “Greeks can’t see any light at the end of any tunnel.”

While the economy of Greece has generally slowed, tourism has remained a strong sector and in recent years has started to grow. The tourism minister reported that summer bookings were up

almost 70% and travel receipts grew 2.4% or 23 million Euro (Smith, 2017). Over 30 million visitors were expected for 2017. The money that is flowing into the economy through tourism reached €8.5 billion since the economic crisis, equivalent to one of the EU bailouts. As indicated in Figure 2, the number of arrivals and nights tourists spend in hotels in Greece has continued to increase since 2012 (Katria, Apartoglou, 2017). Tourist arrivals increased from 14 million in 2010 to 17.5 million in 2017 (projected), an increase of 25%. These data indicate that the amount of time tourists spend in Greece has increased over the past seven years by nearly 30%.

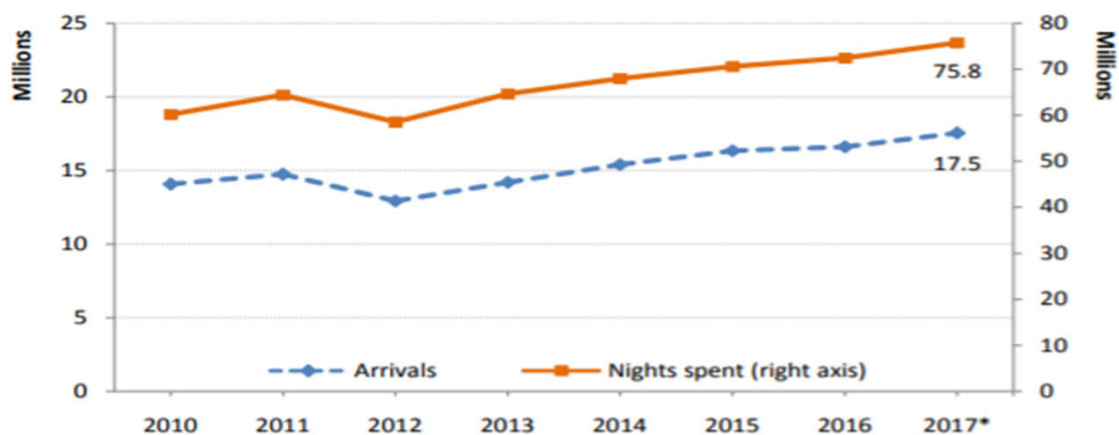


Figure 2. The number of arrivals and nights spent in hotels, similar establishments, and tourist campsites during the 9 month period from Jan-Sept 2010-2017 (Katria, Apartoglou, 2017)

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As the tourism sector in Greece has been growing, so too has use of the Airbnb platform. Within the city of Athens, Airbnb has brought approximately €69 million to individuals throughout the city.

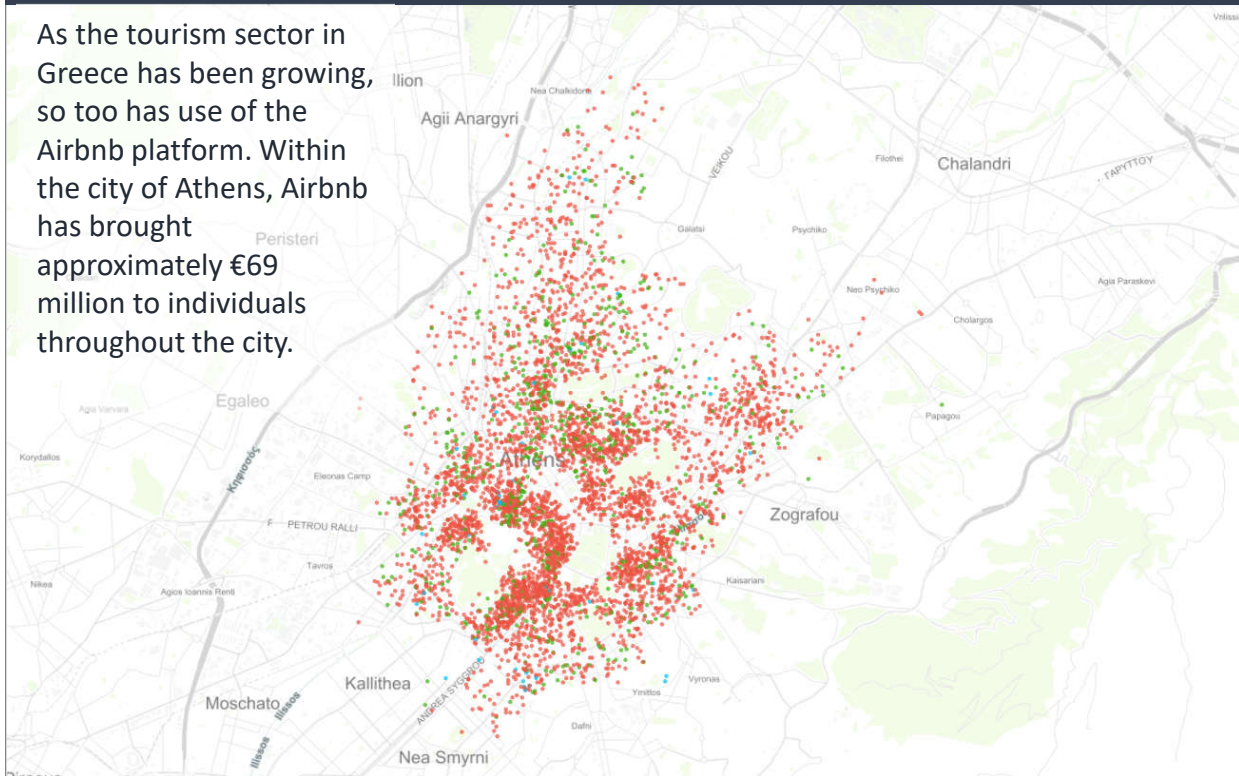


Figure 3. Location of Airbnb accommodation listings in Athens (Cox, 2017)

Seen in Figure 3 are dots representing the location of Airbnb accommodation listings in Athens. The majority of Airbnb listings in the city are concentrated around the Acropolis and other museums located at the center of the city. There are few private rooms (green dots) and shared rooms (blue dots), with more of them towards the north. While most listings are concentrated in the city center, the data show that listings also follow the metro lines out of the city.

In 2017, there were a total of 5,127 Airbnb listings in Athens, with an average price of €55 per night (Inside Airbnb, 2017). According to the analytics of Inside Airbnb, a website run by Murray Cox where he gives open source data

that he scraped from the Airbnb website using a program of his own design, each listing is booked an average of 96 nights per year and makes an average €382 per month, estimated by multiplying together the minimum stay, price, and number of reviews. Inside Airbnb (2017) also indicates that 91.6% of listings in the city are highly available, meaning that the listings are available for more the 60 days in a year.

Highly available listings could have multiple problems associated with them. Inside Airbnb (2017) notes that these listings could have the owner absent from the property, be illegal (the

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maximum number of days someone can rent their property for in Greece is 90 days), or it could be taking property away from residents of the city (Inside Airbnb, 2017). This could increase the cost of living in Athens as so many properties are being used for Airbnb accommodations that there are not enough left for residents (Inside Airbnb, 2018). In Athens, 43.8% of hosts have multiple listings. Hosts with multiple listings are assumed by Inside Airbnb to be more likely to be running a business and to be more likely to be violating laws designed to limit short term rentals to protect residential housing (Inside Airbnb, 2017). This suggests some of these hosts are likely to be management companies or co-hosts. These are individuals or companies that manage Airbnb listing for hosts, either through the Airbnb platform (co-hosts), or outside of it (management companies). In the top-20 hosts there are at least three management companies identified by the fact that they use a company name instead of a personal name. These include Eazybnb, Home Rentality, and an incomplete name, Home And (Inside Airbnb, 2018). All of the top 20 hosts have over 10 properties, making it highly likely that they are being managed by more than one person. Most, if not all, of these are likely to be companies. This evidence of the growing commercialization of runs counter to the founding ideals of Airbnb, which is to live like a local with the help of the host.

Greece as a nation started to regulate Airbnb hosts only recently. Recognizing the economic potential of Airbnb, the state implemented tax rates on hosts according to the income they make from renting out their space through Airbnb: 15% for annual incomes up to €12,000, 35% for annual income €12,001-€35,000, and 45% for annual income over €35,000 (Felouka, 2018). Each host can only rent out their apartment up to 90 days a year in most areas and 60 days a year on the Greek islands. Hosts must also register their apartments with the “Short Term Residence Property Registry” which is run by the Independent Authority for Public Revenue (Felouka, 2018).

To date, there has been no published research on Airbnb in Thessaloniki, the second most populated city in Greece, with a population of 354,290 as of the 2011 census (Geonames, 2018). Thessaloniki is a large college town with some 150,000 students during the school year (InThessaloniki, 2018, Retrieved March 15, 2018). The city is roughly separated into the central downtown area (between the White Tower and the port), the northern area (within the loop road and north of the center), and the southern area (all the way out to Kalamaria), as shown in Figure 4.

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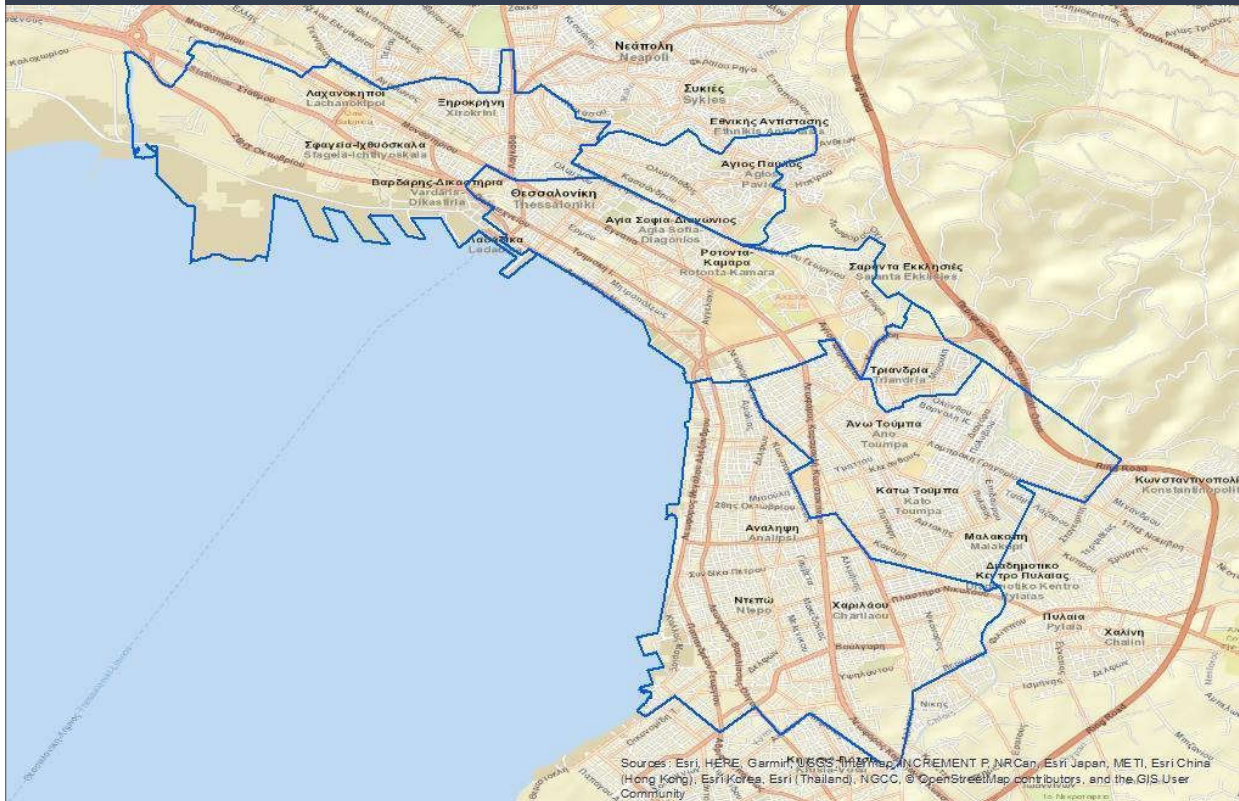


Figure 4. Municipal Sectors of Thessaloniki

Thessaloniki's rich history, small size, and setting along the waterfront, makes it an attractive destination. For centuries the city has been an important trade city, connecting Europe to Asia. After railroads became more commonplace, Thessaloniki became a major industrial capital, tripling its population between 1840 and 1912. A rapid construction explosion in the 1950s and 1960s, resulted in many of the high rise buildings that make up much of the built environment of the city today. Thessaloniki is a major trade and transportation hub in the area and was named the "Cultural Capital of Europe" in 1997, and was named the European Youth Capital in 2014

(InThessaloniki, 2018).

Thessaloniki also draws both local and international tourists. There has been a constant increase in the past three years of tourists coming from Cyprus, Turkey and the US (GBR Consulting, 2015; 2017; 2018). Between 2017 to 2018 the number of tourists coming from Cyprus, Turkey and the US has increased by 1%, 8%, and 20% respectively (GBR Consulting, 2018). In the same period, the number of international arrivals to the Thessaloniki International Airport has increased by 13% (GBR Consulting, 2018).

BACKGROUND

In 2016 international arrivals decreased by 1%, but in 2017 international arrivals increased by 9.8% (GBR Consulting, 2016; 2017). This trend also extends to the prices that hotels charge which have seen a 5.8% increase this year, a 0.6% increase the year before and a 5.1% increase the year before that (GBR Consulting, 2015; 2017; 2018). This data indicates that tourism is expanding in the city and in fact is increasing fast enough that increased competition from Airbnb is not threatening to hotels.

In many cities, such as Athens and Barcelona, Airbnb listings are concentrated around the city center and around any monuments and tourist attractions in the city (Inside Airbnb, 2017). Using data from Inside Airbnb Gutiérrez, García-Palomares, Romanillos, and Salas-Olmedo (2017) identified that proximity to tourist attractions and the hospitality and entertainment industries are the best predictor of Airbnb listing concentration in Barcelona. This correlation raises the question of whether Airbnb listings can be successful outside of the city center. If Airbnb listings can only be successful in the city center, as seems to be the case of Barcelona (Gutiérrez, et al., 2017) and Athens, then is the economic potential of Airbnb limited to social sectors with resources in city centers? If, as in Athens, the transportation

system can help to expand opportunity to areas outside the city center then it is possible that there is more potential for the growth of Airbnb in Thessaloniki. A new metro system is currently under construction by Attiko Metro (Attiko Metro, 2016). This could potentially open up new territory in which Airbnb listings could thrive, expanding the opportunities of Airbnb into a new area of the city and its surrounding areas.

We collaborated with Creativity Platform, a non-government organization (NGO) that works to expand creative industries in Thessaloniki. This means not only expanding the utility of Airbnb as a platform that lists private accommodations, but also how the platform may affect ancillary businesses such as cleaners, contractors, and management services



METHODS

Our goal was to explore the potential of Airbnb to create accessible economic opportunities in the city of Thessaloniki. To address this goal we were guided by the following objectives:

- Examined correlations between location and relevant data of Airbnb listings through the creation of maps
- Identified factors contributing to successful Airbnb offerings
- Identified motivations of hosts and examined their use of support services
- Developed recommendations that inform how to capture the economic potential of Airbnb in the city of Thessaloniki

METHODS

1

Examined patterns of Airbnb offerings related to success

To identify the different patterns and indicators of success, we defined “success” as how guests would rate Airbnb, and how an Airbnb listing achieve a high reputation, and the amount of revenue generated in an average month through a very conservative estimate created by multiplying average reviews per month by the cost per night and the minimum stay required by the host. The indicators that determine an Airbnb’s good rating and reputation are mainly the star-ratings, detailed guest reviews, and the listing descriptions offered.

Method 1a: Geospatial analysis

Drawing on the spatial analyses conducted in other cities (Inside Airbnb, 2016; 2017), we developed GIS maps of the city of Thessaloniki, with overlays of Airbnb rentals, Airbnb related data, and city infrastructure. Data, maps, and analytic tools to evaluate Airbnb in different locations can be found on *Inside Airbnb* for many cities. The purpose of *Inside Airbnb*, developed by founder Murray Cox, is to display how Airbnb affects cities and neighborhoods both economically and socially. It includes information and statistics on the room type, activity, availability, and listings per host. An example of the information available on *Inside Airbnb* is shown in Figure 5, which depicts the statistics for New York City.

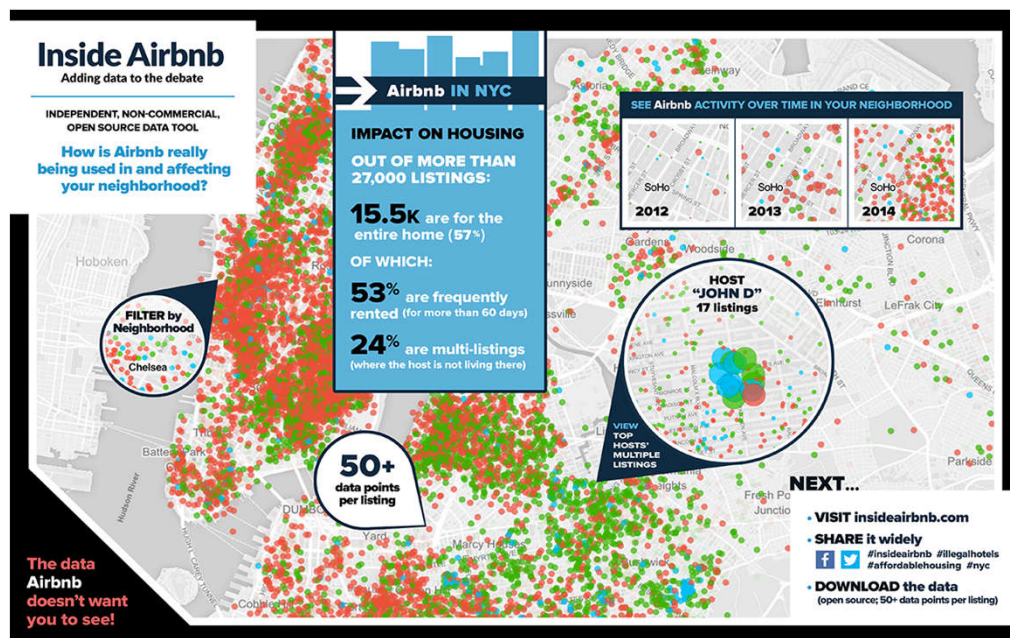


Figure 5. Inside Airbnb Adding Data to the Debate (Inside Airbnb, 2017)

METHODS

While *Inside Airbnb* has obtained and made available data for numerous cities, no data were available for Thessaloniki. Following our request and a collaborative exchange of shapefiles of the city, Murray Cox obtained the Airbnb data for the greater Thessaloniki area and made it publically available on *Inside Airbnb*. The data includes critical analysis attributes such as prices, amenities, location, availability, and ratings per listing. These attributes allowed us to identify any areas of the city where Airbnb listings are more densely located and identify any other factors that are prevalent in particular areas, such as certain amenities, or higher than average ratings.

Thessaloniki's GIS department provided both the maps and the shapefiles necessary to map the location of city infrastructure including bus stops, monuments, and cultural sites. In order to map the locations of the future locations of the metro stops it was necessary to find the street addresses in a map of the future metro and then find the coordinates of the stops in Google Maps.

To generate maps of Airbnb listings, we used ArcGIS, a software that allows for information to be analyzed geographically. This software can be used to map any location based data such as climate or economic data (Esri, 2018). GIS integrates many layers of data to show trends, patterns, and relationships as seen in Figure 6. Maps of the region and city center were developed to show locations of listings, the type of listing (private house/apartment, private room, or shared room), star-ratings, public amenities and infrastructure including transportation and tourist attractions, price per night, estimated revenue per month, availability, number of total reviews, number of recent reviews, and superhost status.

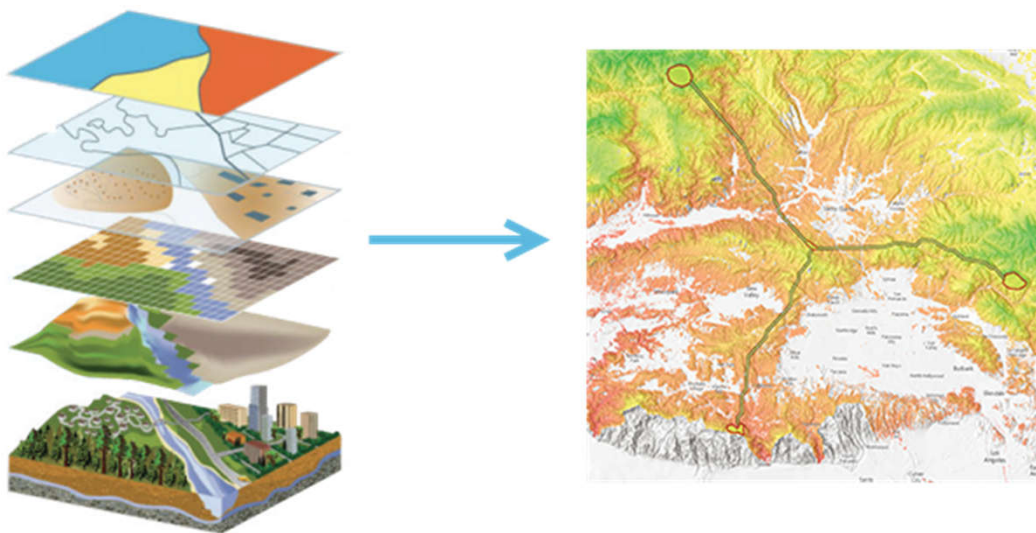


Figure 6. Diagram of GIS layering (Esri 2018)

METHODS

Method 1b: Content analysis

In order to identify factors that contribute to successful Airbnb offerings, we assessed guest reviews. We performed a content analysis to show the highest frequency of factors pre-determined as relevant to success. We used a deductive approach to analyze the data. Drawing from a study conducted by Lee and colleagues (2015), involving the investigation of features influencing booking success we assessed: response time, response rate, user scores (overall, value, accuracy, cleanliness, location, check-in, communication), number of rooms, bedrooms, bathrooms, beds, accommodation type, room type, cancellation policy, minimum stay, price, cleaning fee, and amenities, see Appendix A. To accomplish the content analysis, we created a Microsoft Excel spreadsheet for each listing, with one review per row and one feature per column. If a feature appeared in a review, “1” was placed as a score in the corresponding cell on the spreadsheet, otherwise the cell received a “0.” A sum score value was calculated after all reviews were analyzed to determine which features appeared most often in guest reviews.

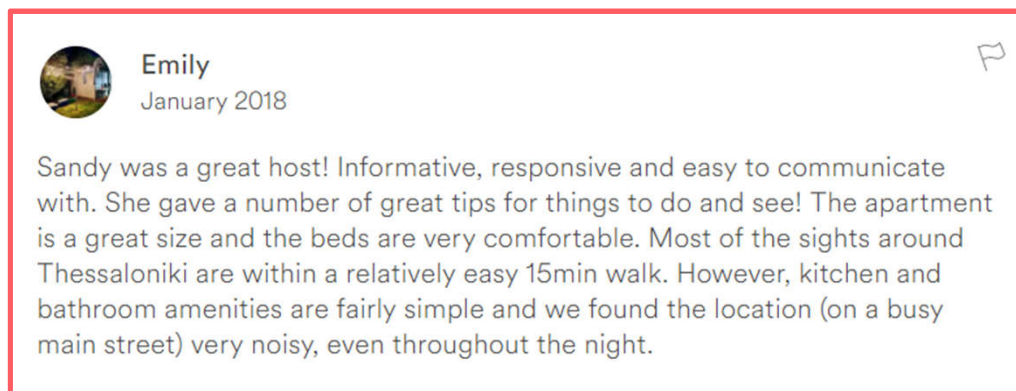


Figure 7. Guest Review Example

We analyzed guest reviews, as seen in Figure 7, from the listings of the hosts who we interviewed (see Method 2 for details) resulting in a total of 46 listings and 379 reviews. We found these hosts through a variety of sources including our sponsor, Creativity Platform, our advisors, Robert Hersh and Nicola Bulled, Airbnb Thessaloniki (Hosts) Facebook group, and by messaging hosts on the Airbnb platform. The listings of these hosts represented a wide range of location, size, and popularity of Airbnb listings. Consequently, we determined that while the sample of reviews was not random, it was sufficiently varied to give us a good view of what factors guests look for when choosing an Airbnb. If there were more than 50 reviews for a listing, only the most recent 50 were read in this stage of the analysis.

METHODS

Method 1c: Regression analysis

We performed a multivariate linear regression analyses to examine the relationship between the other factors of listings (not mentioned in guest reviews) and revenue. The factors examined were put into three independent multivariate linear regression analyses: host related attributes, accommodation related attributes, and other factors relating to the listing, as determined by our host interviews and relevant literature. The factors are categorized as seen in Table 1 below.

Table 1. Regression Attributes

Host Related Attributes	Accommodation Related Attributes	Other Factors
Host location Host response rate Superhost status Months as a host	Neighborhood Property type Accommodates	Cleaning fee Cancellation policy Instant booking

Method 1d: Amenities analysis

Finding the frequency of amenities for Airbnb listings allowed us to understand which amenities keep an Airbnb competitive or successful. We used data on amenities for every listing in Thessaloniki from Inside Airbnb and organized the amenities into an Excel sheet to count the frequency of each. Then we used WordItOut.com to generate a word cloud that displays the more frequent amenities in larger font.

METHODS

2

Interviews with hosts and stakeholders

We investigated the various motives for why people are engaging with the platform and examined their use of support services. Through our preliminary research, we recognized an economic opportunity for local businesses to benefit from Airbnb hosts such as support services and products marketed in the home. The main services include management companies, cleaning companies, and maintenance staff. According to our sponsors, the management services help people take care of their listings by removing the need for a host to do some or all of the work necessary to keep a listing up to date and successful. Other businesses might benefit from a connection to Airbnb hosts if the host markets their local products or tourist activities to guests in the Airbnb. This could also benefit the host if they receive better reviews for being a good resource or providing extras in the Airbnb. Some examples of these businesses would be a local business that sells olive oil, or a company that organizes hikes. Both types of businesses could then benefit from utilizing this marketing strategy with Airbnb hosts. A maker of local products could benefit from spreading their name to tourists who come to the city. The tourists would then be more likely to buy their products to take back home. A company that organizes tourist activities would benefit from being recommended to guests by their hosts.

Hosts

In order to identify the different strategies hosts are using to market a successful Airbnb listing, we interviewed seven hosts with a range of listings from one to 25 properties. A complete list of hosts interviewed is included in Appendix B. In these interviews, we asked about their motivations for hosting, the efforts they make to attract people to their listings, how they decide on price, how they thought the location of their listing(s) has influenced its success, and their use of support services such as management companies, co-hosts, and cleaning services. All interviews began with of the evolution of their Airbnb platform experience. A complete list of questions is available in Appendix C.

We voice recorded all of these interviews if permission was granted, and offered confidentiality if desired. We transcribed all recordings and analyzed the text by looking for keywords that we gathered from the text of the interviews and patterns in our interviews and identifying how often they showed up across interviews. All of these interviews took between 30 minutes and two hours.

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Management Services

We interviewed three local entrepreneurs who provide management services for Airbnb hosts. Their services include setting up the host's listing description and making suggestions for renovations and interior design. They use their personal connections to hire a photographer, cleaning person, plumber, and electrician to maintain the home. One interviewee was a real estate agent and has six clients whose profiles she manages by logging in to each of their accounts with access to their banking information. The next interviewee was a co-host on Airbnb.com and manages 25 properties by connecting with hosts through the platform. This entrepreneur plans to start a management company outside of the platform by the end of this year. The final interviewee was a management company. He takes care of all of the details of Airbnb listings management including marketing, cleaning, and checking in guests. The questions they were asked are listed in Appendix C with the host questions. We additionally asked them about their profit, connections to support services, and perception on the growth of Airbnb in the city. The interviews were recorded and analyzed as per the host interviews listed earlier.

Non-Governmental Organization Official

We interviewed an official from the Thessaloniki Convention Bureau to understand the city's long term vision for tourism and its perspective on Airbnb as a disruptive force in tourism. In our interview, we covered such topics as the city's current plans to encourage tourism, the impact of Airbnb on developing new, more inclusive forms of tourism, how the city could support more equity in tourism so that the benefits of Airbnb can help those neighborhoods outside of traditional tourism hotspots. In order to understand how Airbnb should be strategizing itself within Thessaloniki, we needed to understand the city's tourism development strategy and Airbnb on the city's current radar. The questions they were asked are listed in Appendix C and they were recorded and analyzed in the same way as the previous interviews.

Hotel

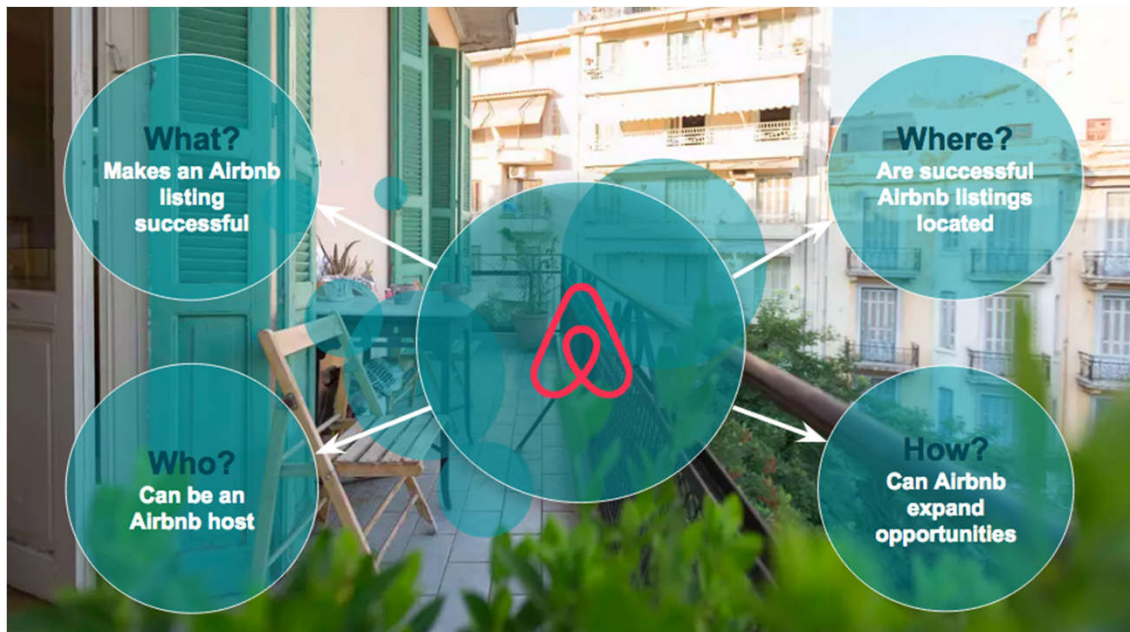
We had an interview with the manager of COLORS Urban Hotel to discuss how hotels market local tourism to guests. We learned more about how the hotel shares information to guests about tourist activities, local restaurants, shops, and other destinations. Our other focus was the difference between their marketing strategy and other traditional accommodations' such as local hotels, hostels, and Airbnb listings, as well as the adverse impacts. The questions they were asked are listed in Appendix C and the manager's responses were analyzed in the same way as the previous interviews.

METHODS

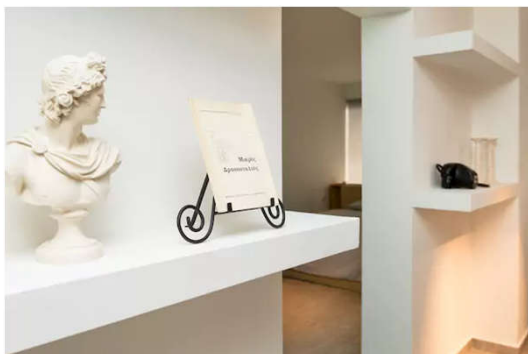
3

Workshop presentation

Using the data gathered in the previous methods, from the maps, stakeholders' insight, trends found in reviews, statistical analyses and opportunities in tourism growth, we presented at a meeting of perspective Airbnb hosts and hosts wishing to improve their offerings. The goal of this presentation was to present the possible economic opportunities that can be created through Airbnb throughout the city. We discussed the growth of Airbnb since 2011, the current statistics about number and type of listings and hosts, what makes an Airbnb listing successful, where are successful Airbnb listings located, who can be an Airbnb host, and how can Airbnb expand opportunities.



FINDINGS



The Current State of Airbnb in Thessaloniki

Although there are 1,822 total listings in the Greater Thessaloniki area with 1,549 listings being entire homes/apartments (85%), 262 listings being private room (14%), and 11 listings being shared room (1%), there are only 963 recent and frequently booked listings. This means 53% of the listings in Thessaloniki have been active in the past 6 months. Table 2 shows information on all the listings in Thessaloniki, this include both active and inactive listings, and is separate by type of accommodation offered: entire home/apartment, private room, and shared room. The vast majority of listings in the city are for entire homes/apartments, with a total of 85.0% of the total listings in the city. This group also has the highest average price at €48 per night, followed by private room at €33. The lowest prices are for the shared room accommodations at €11. Entire homes/apartments also have the highest activity at 105 nights per year. Shared rooms have the next highest activity at 75 nights per year. The lowest activity is for the private rooms at 57 nights per year. Entire homes/apartment also have the highest reviews per listing per month at 1.7. Private rooms and shared rooms are roughly the same in this category at 0.8 and 1.0 reviews per listing per month respectively. Entire home/apartment also have the highest estimated occupancy at 28.8%, although this is then followed by shared rooms at 20.5% and then private rooms at 15.7%. Finally, entire homes/apartments have the highest estimated revenue per month at €340 per month. Private rooms then have an estimated revenue of €94 per month. Shared rooms have an estimate revenue of €64 per month.

FINDINGS

Table 2. Total Airbnb Listings in Greater Thessaloniki

Room Type	# of Listings	% of Total Listings	Price/ Night (€)	Activity (nights/ year)	Reviews per listing per month	Estimated Occupancy (nights/365)	Estimated Revenue/ month (€)
Entire home/apt	1,549	85.0%	48	105	1.7	28.8%	340
Private Room	262	14.4%	33	57	0.8	15.7%	94
Shared Room	11	0.6%	11	75	1	20.5%	64
Total	1,822						

Table 3. Recent and Frequently Booked Listings (Active)

Room Type	# of Listings	% of Total Listings	Price/ Night (€)	Activity (nights/ year)	Reviews per Listing per month	Estimated Occupancy (nights/365)	Estimated Revenue/ month (€)
Entire home/apt	874	90.8%	39	170	2.8	46.7%	537
Private Room	84	8.7%	20	144	2.1	39.5%	232
Shared Room	5	0.5%	10	128	1.8	35%	104
Total	963						

FINDINGS

Active listings are defined as those that have been reviewed in the last six months and are booked over 60 nights per year. For the active listings (see Table 3), entire home/apartment always have the highest value in each category, followed by private rooms and then shared rooms. Active listings also tend to have a higher monthly revenue, but also a lower nightly price than the total listings, suggesting some seasonality price variations.

In order to understand the value behind each Airbnb listing, it is important to understand the size of these listings are. Figures 8-10 break down the estimated revenue that can be made from listings of various sizes. When investing in a new property, hosts need to consider the amount of income that can be made from a listing and the amount they will be able to make. As the number of guests increases, the revenue generally increases. There is also a lack of Airbnb listings in the city for large groups, with only 25 listing that can accommodate more than 10 people. With many of those listings outside of the city center this offers an opportunity to create rare listings which have the potential for good return on investment. Those listings that bring the average income down are generally hostels which are cheaper and may use other platforms such as bookings.com or hostelworld to fill their vacancies. The highest grossing listings in the city are generally those with accommodations for more than 4 people and a large space with the most profitable listing in the city hosting 8 people.

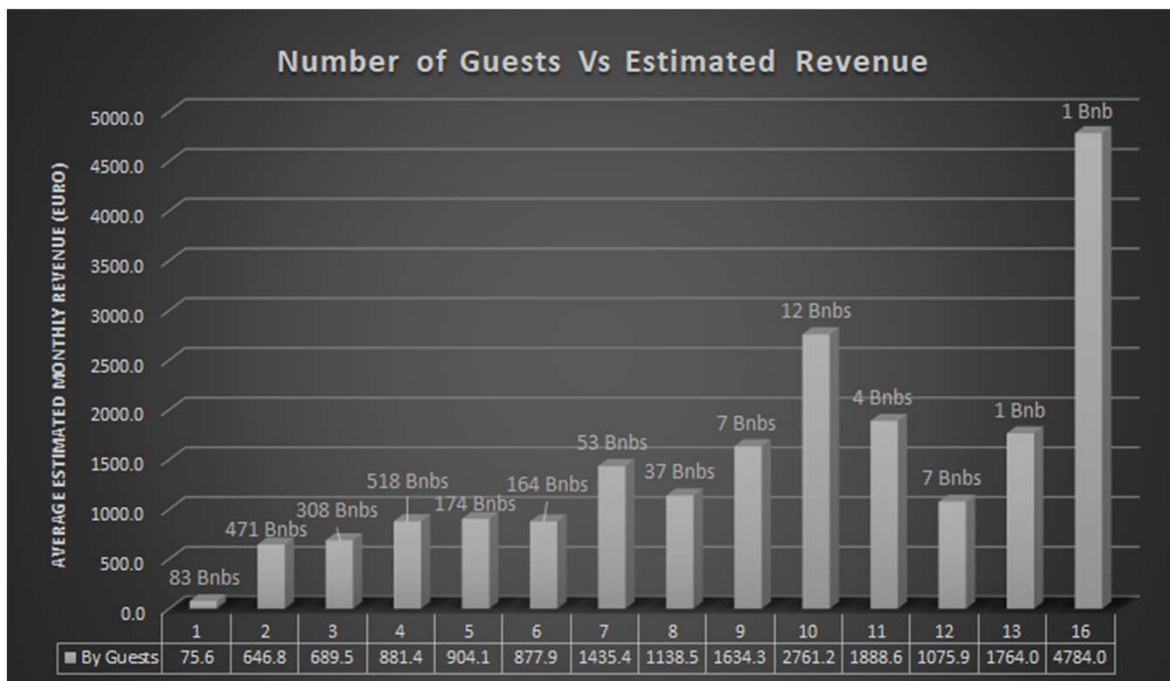


Figure 8. All Listings by Maximum Number of Guests Accommodated Vs Estimated Revenue

FINDINGS

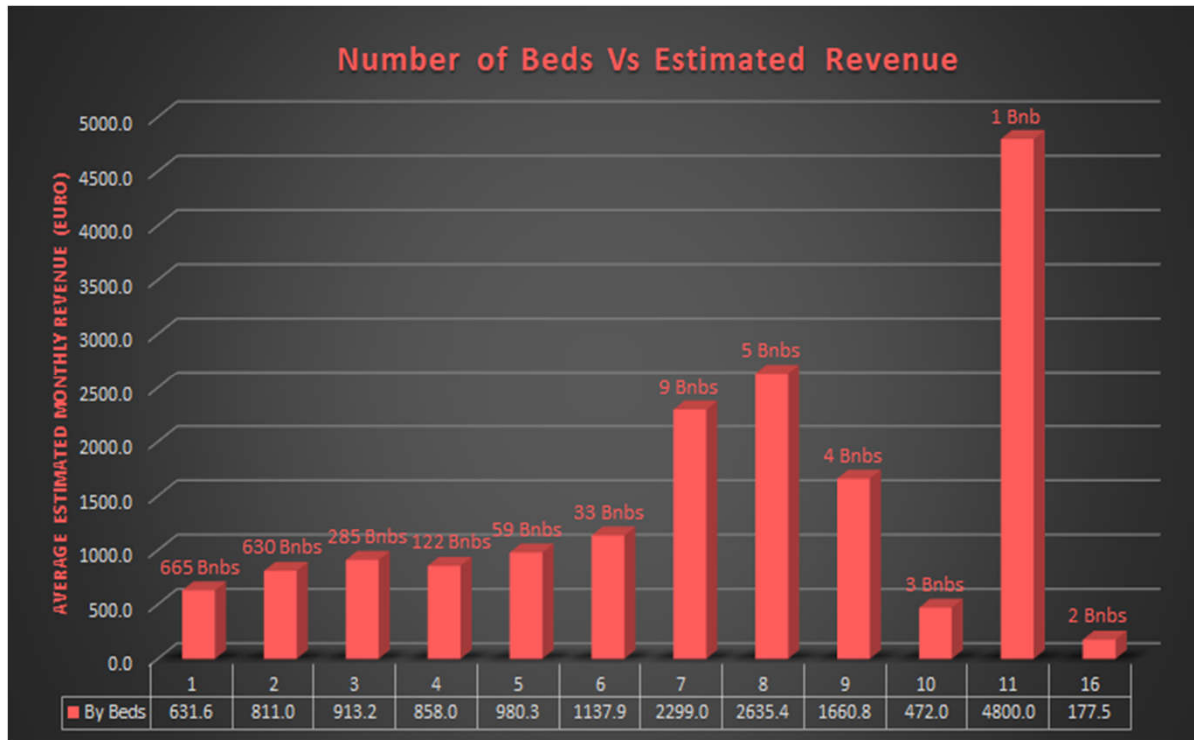


Figure 9: All Listings by Number of Beds in the Apartment Vs Estimated Revenue

When graphing the correlation between the number of bedrooms and the number of beds, we found that generally there was one more bed than the number of bedrooms, which means that most hosts are trying to maximize their spaces with a pull out couch or multiple beds per room. The number of bedrooms does not seem to have as steep of a curve in relation to the revenue until there are more than 4 bedrooms, and once again a disparity of listings with 4 or more bedrooms.

FINDINGS

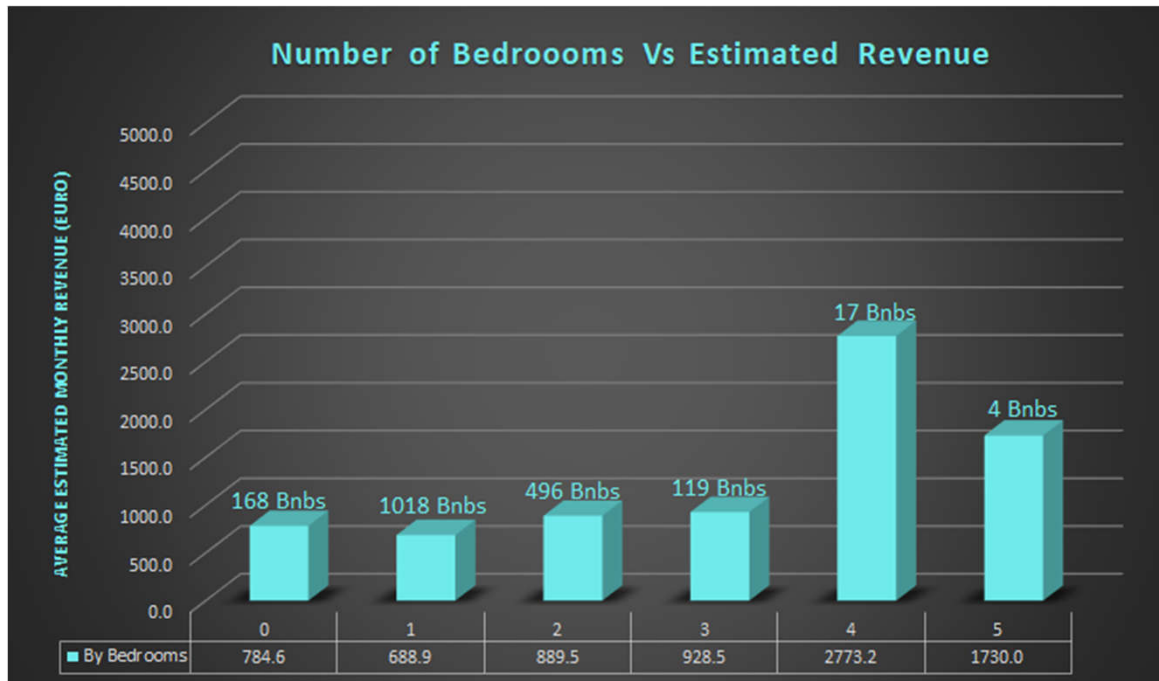


Figure 10: All Listings By Number of Rooms Vs Estimated Revenue

With all of the listings included in the graph the shared room and private room listings are graphed as either zero or one bedroom. They also have much lower revenues. Therefore, not only are these estimated revenues low because of the nature of how they are calculated, but also the fact that shared and private rooms bring down averages, not to mention that these numbers do not take into account whether a listing is highly available or even still actively monitored.

Out of the registered listings, 887 of 1,083 (81.9%) single-listings have high availability compared to the 694 of 739 (93.9%) multi-listings with high availability. This suggests that hosts with multiple properties have higher availability and are more likely to be running a business and unlikely to be living in the property.

FINDINGS

There are a total of 1,309 hosts in Thessaloniki (see Table 4) and 334 superhosts, hosts who have a 4.8+ rating, a 90% response rate, have 10+ stays per year and have 0 cancellations (Airbnb, 2018). This means that about 20% or 1 in every 5 hosts have superhost status. These superhosts have 496 listings in the city, accounting for more than a quarter (27.2%) of all listings. The mean number of listings per host is 2.85 (median: 1, range: 28).

Table 4. Number of Hosts vs. Superhosts

Host Type	# of Hosts	# of Listings
Host	1309	1,326
Superhost	334	496
Total	1,643	1,822

Superhost Listing Locations and Room Types

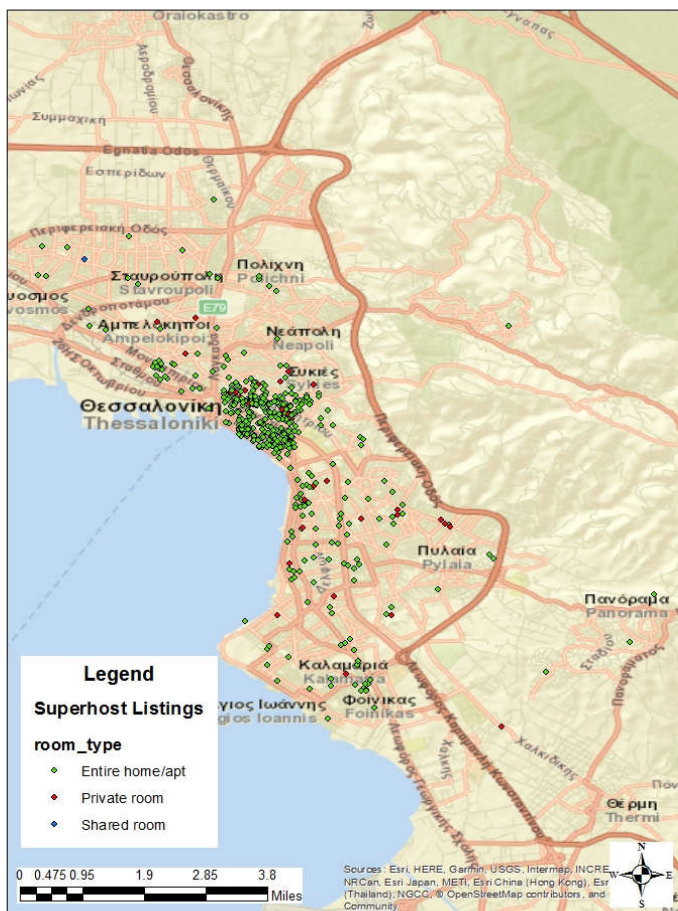


Figure 11. Superhost Airbnb listings in the Thessaloniki Greater Area as of 2018

The discrepancy between the mean and median number of listings per host suggests that a small number of hosts own a large number of listings. According to Inside Airbnb (2018), 40.6% of listings are owned by someone who has multiple listings. This proportion in Thessaloniki is similar to the proportion observed in Athens, where 43.8% of listings are owned by someone with multiple listings (Inside Airbnb, 2017).

FINDINGS

Superhost Listing Locations and Room Types

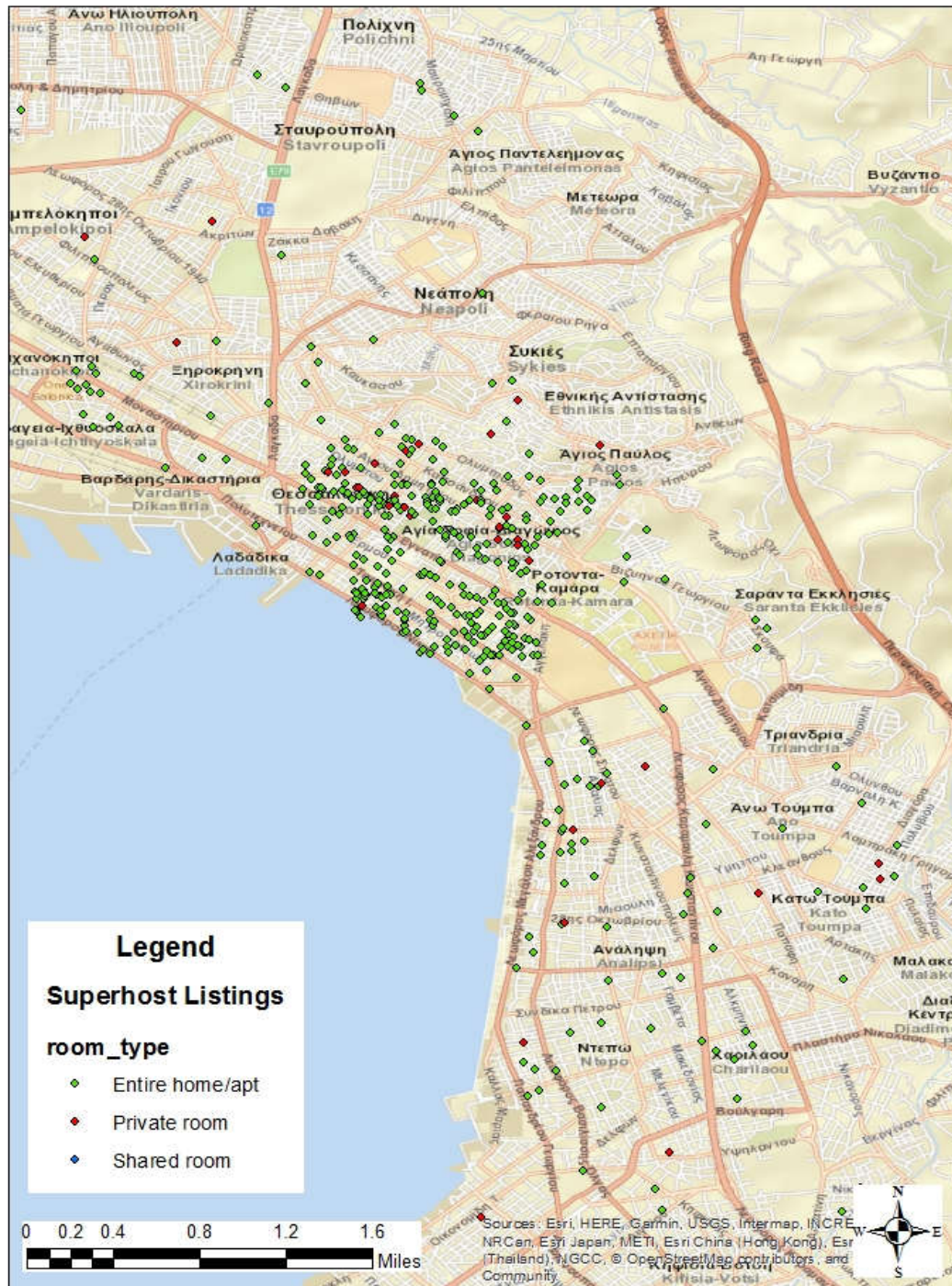


Figure 12. Superhost Airbnb listings in the city as of 2018

FINDINGS

Airbnb listings are clustered in the city center

Location is a very important feature to the success of Airbnb in Thessaloniki. The vast majority of Airbnb listings are located in the city center. The city center is also where the majority of cultural centers and monuments are located. The locations of monuments in relation to Airbnb listings are shown in Figure 13. The majority of monuments are located in the city center and along the waterfront to the south. This is also where the majority of Airbnb listings are located in the city. Airbnb listing density drops off significantly outside of those areas. Similarly, Airbnb listings in Thessaloniki are clustered around cultural centers, including concert halls, museums and related sites included in Figure 13. This confirms the importance of the city center as important for tourism in the city.

Estimated Monthly Revenue with Landmarks

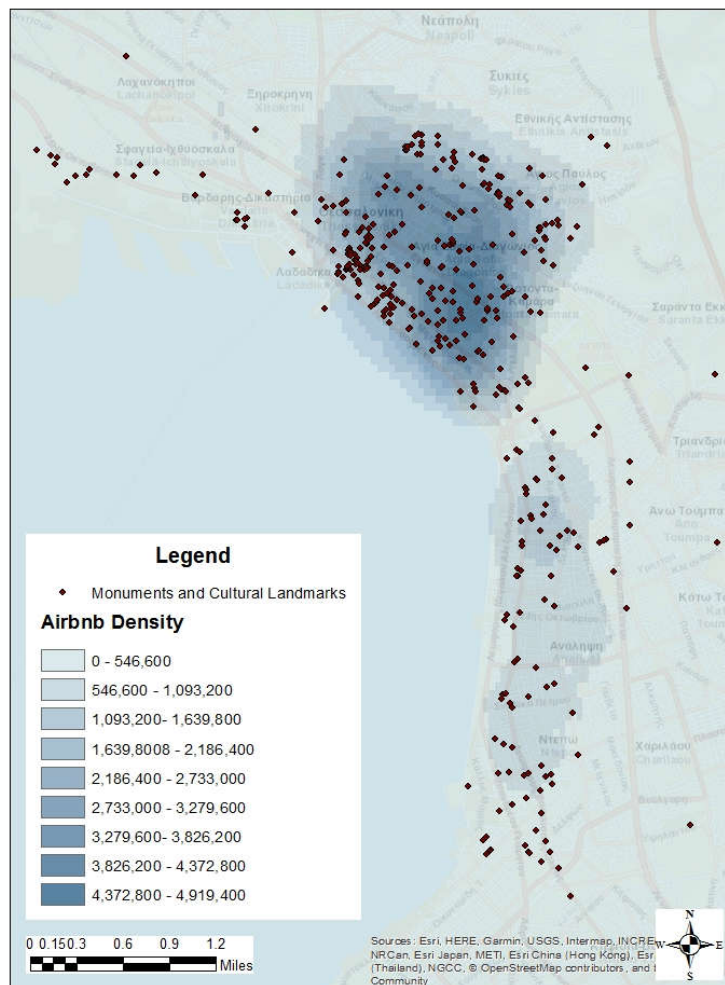


Figure 13. Locations of Airbnb listings in Thessaloniki, and Airbnb listing density relative to monuments, and cultural landmarks, as of April 2018

FINDINGS

A hot spot analysis of the estimated revenue of Airbnb listings in the city (Figure 14), further indicates that central locations are more profitable. A hot spot analysis (Getis-Ord Gi*) is a method by which areas of above average scores (hotspots) are identified by a red color and areas of lower than average score (coldspots) are identified by a blue color. The revenues of listings were calculated as a conservative estimate given that we are not accounting for routine expenses. By using the minimum stay duration and the number of reviews instead of actual duration and number of guests, for which data is not available, it is likely that this estimate is low. However, based on this estimate, it is possible to see that Airbnb listings in the city center tend to have a higher than average revenue while those on the outskirts of the city tend to have a lower than average revenue.

Estimated Revenue Hot Spot Analysis

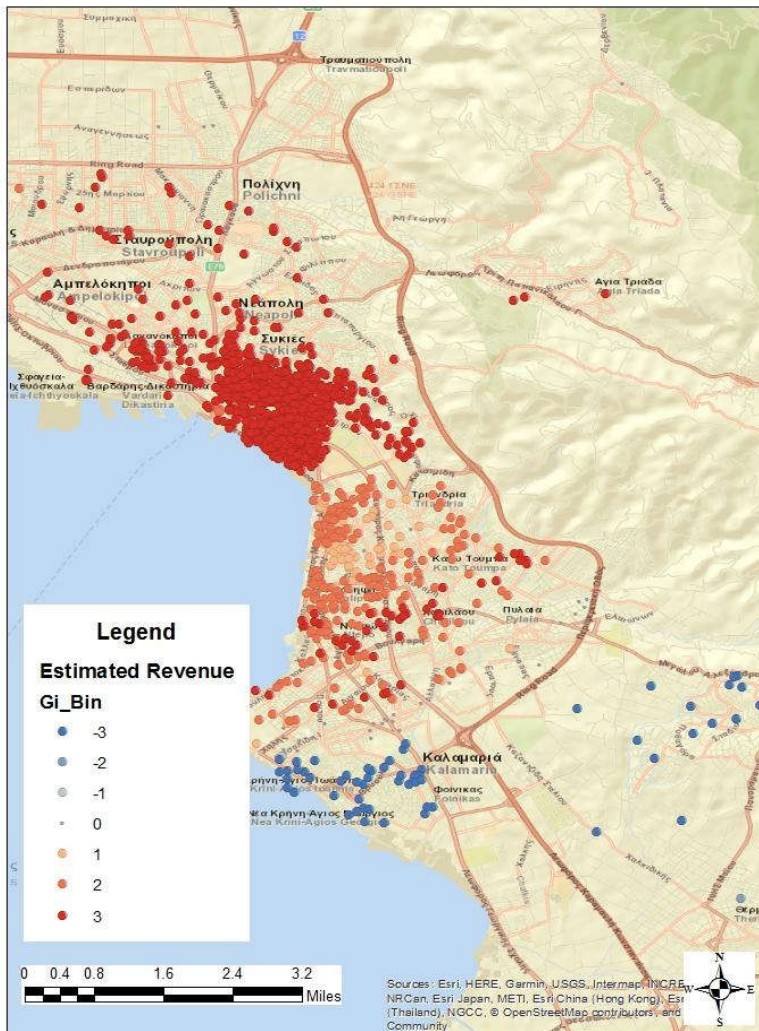


Figure 14. Hot spot analysis of the estimated revenue from Airbnb in Thessaloniki as of April 2018

FINDINGS

The importance of location in the success of Airbnb listings is highlighted by our interviews with hosts. Almost every host we spoke with conveyed the importance of having a good location. One of our interviewees, who we will identify as V, believes that location is the most important factor in determining the success of Airbnb listings. This perspective was further confirmed in our analysis of guest reviews with a high frequency of reviews mentioning the convenient location of the Airbnb as shown in Appendix A. Out of a total of 379 reviews analyzed, 274 (72.3%) of those reviews mentioned the convenience of the listing's location. Guests also rarely mentioned how scenic a location was, 48 (12.7%) of reviews, suggesting that either guests are more likely to notice the convenience of a location than its beauty, or that few Airbnb listings in Thessaloniki are scenic.

Considering revenue variation within the city center (Figures 15-16), Airbnb listings near the waterfront have higher monthly revenues (indicated with green) than Airbnb listings further inland and toward Neapoli (indicated with red). This indicates that Airbnb listings near the waterfront tend to be more desirable for tourists than those further inland. It also appears that Airbnb listings tend to have a slightly higher revenue in areas near Aristotle Square, considered the very center of the city. Similarly, the prices for Airbnb listings is higher in areas located near the water and Aristotle Square.

FINDINGS

Airbnb Prices

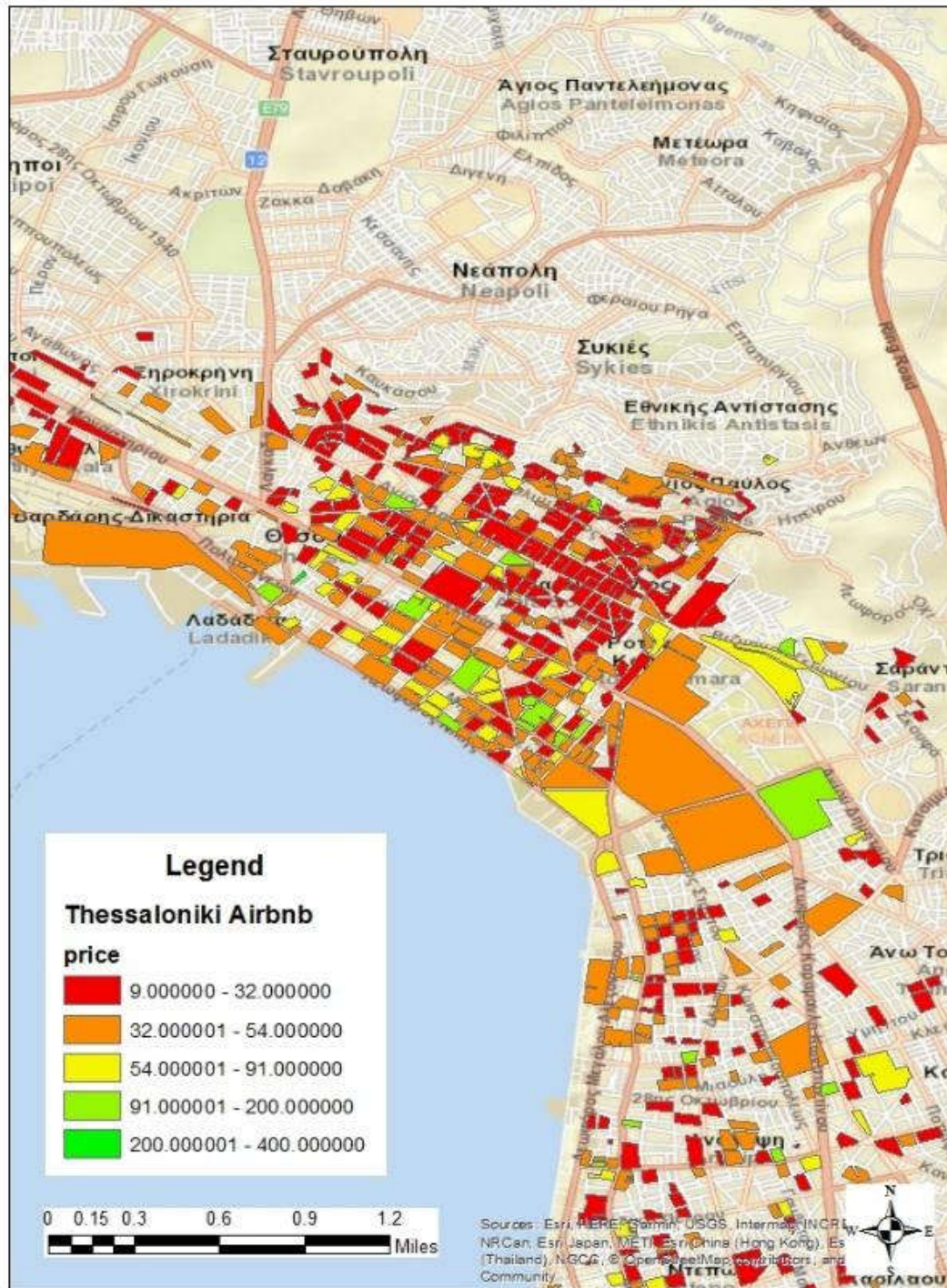


Figure 15. Airbnb listing prices in the Thessaloniki city center

FINDINGS

Airbnb Revenue

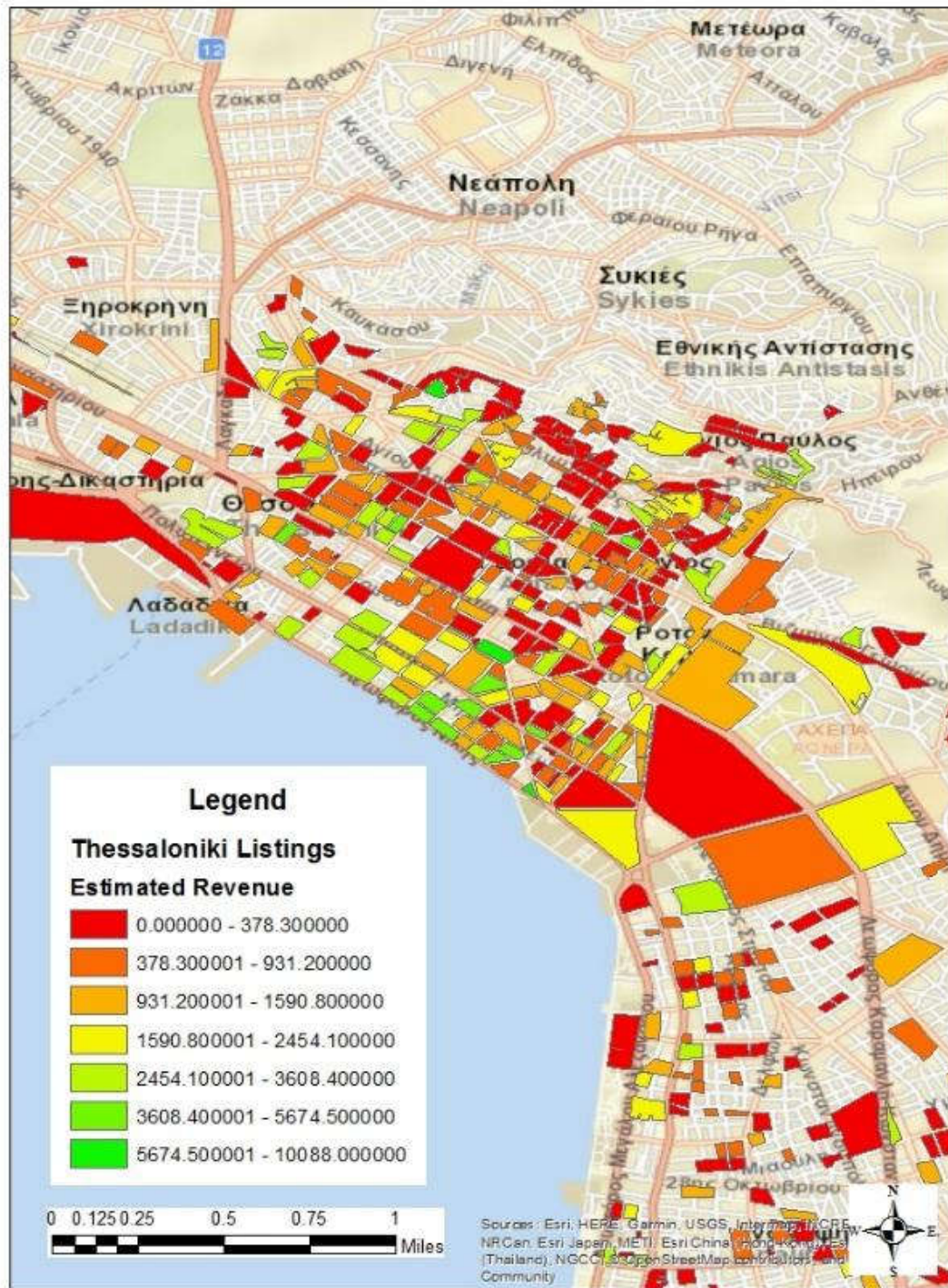


Figure 16. Airbnb listing revenue in the Thessaloniki city center

FINDINGS

Estimated Revenue Per Month

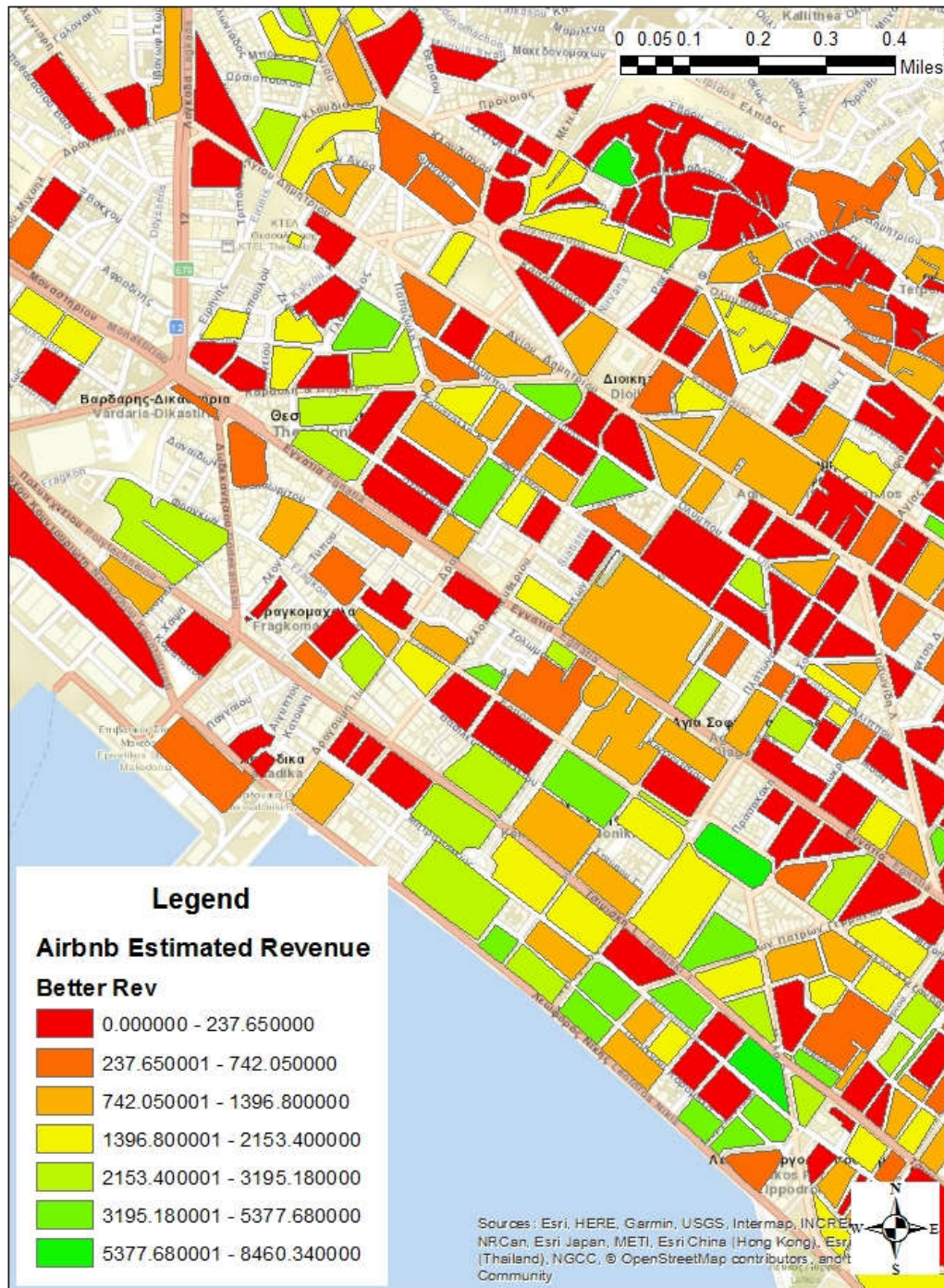


Figure 17. Estimated Revenue per Month of Airbnb listings in the Aristotle Square area as of 2018

FINDINGS

Accommodation-related factors including location (city center), property type (entire apartment), and guests accommodated were analyzed using multivariate linear regression to determine their combined influence on revenue generation. Dummy variables were established for listing location (city center=1; other =0) and property type (entire apartment=1; other=0). Combined, these factors explained 8% of the variance ($R^2=0.086$, $F(3, 1822)=56.946$, $p<.01$), indicating that the model is a good fit for the data. Each aspect, listing location ($\beta=.130$, $p<.001$), property type ($\beta=.166$, $p<.001$), and guests accommodated ($\beta=.154$, $p<.001$), significantly predicted higher revenues.

Table 5. Multivariate linear regression analysis for the accommodation-related factors influencing Airbnb listing revenue in Thessaloniki, April 2018

Variable	Unstandardized Coefficients β	Unstandardized Coefficients Std. Error	Standardized Coefficients β	p
Location	384.688	66.595	0.130	<.001
Property Type	525.255	75.670	0.165	<.001
Guest accommodated	95.919	14.883	0.154	<.001

While there is great demand for Airbnb listings in the Thessaloniki city center compared to elsewhere in the city and the surrounding area, the city center itself is divided in terms of potential. The concentration of tourist attractions in the city center is a primary draw, and low prices relative to other major cities ensures that tourist do not need to seek cheaper accommodation outside the city center. The average price of all listings in Athens is €55 per night, the average price for listings in Barcelona is €96 per night, the average price of listings in Rome is €90 per night, and the average price for listings in London is €111.44 per night. However, even within the city center there are areas that are in higher demand than others. The waterfront and the area surrounding Aristotle Square are the most popular areas for tourists, allowing hosts to charge more.

FINDINGS

Economic success of listings is dependent on host-related factors

After interviewing seven hosts who stressed the importance of hospitality, location, cleanliness, and amenities, we conducted a content analysis of guest reviews. We analyzed 379 guest reviews from their 46 listings. Shown in Figure 18 are the frequencies of features mentioned in the guest reviews.

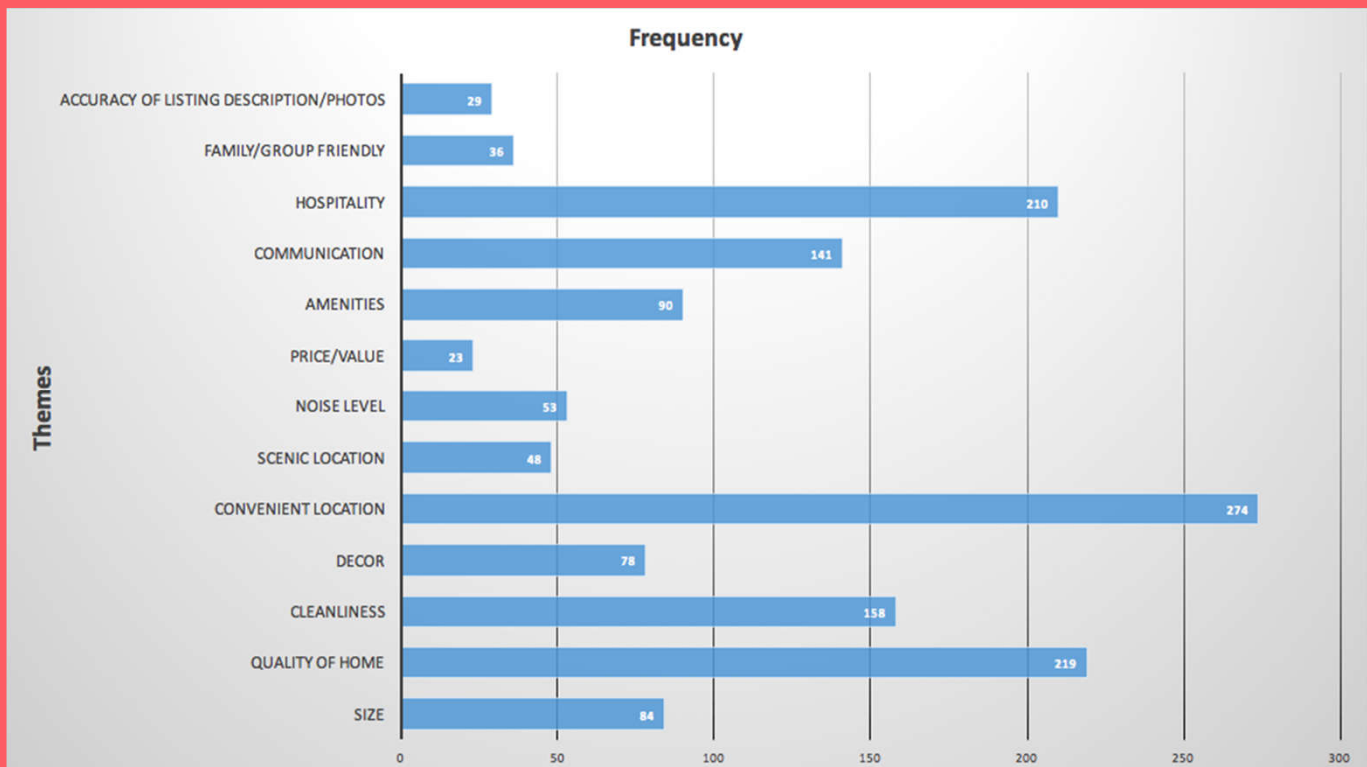


Figure 18: Frequency of features in guest reviews

Figure 18 shows that convenient location is the most common feature to be mentioned in our analysis with it appearing in 274 (72.3%) of the 379 reviews. This was followed closely by quality of home and hospitality with 219 (57.8%) and 210 (55.4%) mentions respectively. Price/value and the accuracy of the listing description and the pictures on the Airbnb website were the least mentioned with 23 (6.1%) and 29 (7.7%) mentioning each. This shows that guests tend to appreciate the convenient location of the Airbnb listing, the quality of the home, and the hospitality of the host.

FINDINGS



Figure 19: Frequency of amenities in listings

After conducting the content analysis, we found that amenities were only mentioned in 90 out of the 379 guest reviews (23.7%). Despite how important the hosts interviewed believed the number of amenities was in the success of their listings, the number of times it was mentioned was one of the lowest we saw among the reviews that were analyzed. To better understand why amenities were mentioned less, we wanted to see if the majority of listings contained the same amenities. We displayed the frequency of each amenity for all 1,822 listings in the city as shown in Figure 19. The most common amenities appear larger and the least common amenities appear smaller. This word cloud shows that there is variance in the number of amenities offered in the 1,822 listings, and that the most frequent amenities are essentials (e.g., towels, toilet paper, and shower gel), a kitchen, TV, and WiFi. These are amenities that could be considered necessary. An Airbnb listing that does not have these could be considered less favorable for guests. Also, some of these less common amenities such as parking, a patio/balcony, microwave, or 24 hour check can make a listing unique. If a listing has one of these, it could stand out from the myriad of other available listings and could be more successful.

FINDINGS

Next, we analyzed other host-related factors including host's location, response rate, superhost status, and duration as a host in months using multivariate linear regression to determine their combined influence on revenue generation. Dummy variables were established for host's location (Thessaloniki=1; other =0) and superhost status (superhost=1; other=0). Combined, these factors explained 18.3% of the variance ($R^2=0.183$, $F(3, 1594)=88.761$, $p<0.01$), indicating that the model is a good fit for the data. Each aspect, host location ($\beta=0.051$, $p=0.028$), response rate ($\beta=0.104$, $p<0.001$), superhost status ($\beta=0.360$, $p<0.001$), and duration as a host in month ($\beta=0.102$, $p<0.001$), significantly predicted higher revenues.

Table 6. Multivariate linear regression analysis for the host-related factors influencing Airbnb listing revenue in Thessaloniki, April 2018.

Variable	Unstandardized Coefficients β	Unstandardized Coefficients Std. Error	Standardized Coefficients β	p
Host Location	125.185	56.902	0.051	0.028
Response Rate	6.580	1.463	0.104	<.001
Super host status	915.793	59.109	0.360	<.001
Months as a host	6.402	1.444	0.102	<.001

FINDINGS

Co-hosting is another Airbnb feature that allows a co-host to take a 10-20% cut of the owner's profits by managing the property. A co-host will take care of the listing on the Airbnb website as well as greeting the guest and making sure that they have everything they need throughout their visit. A co-host will also provide a cleaning service between stays. Co-hosting is similar, though not identical, to a management service. A management service is a private company, unaffiliated with Airbnb, that will take care of a property for a cut of the profit. These co-hosts and management services are experienced in creating a successful Airbnb and will be able to outcompete smaller hosts who only have one or two properties. For example, in Athens, the top 20 hosts each have over 10 listings within the city limits (Inside Airbnb, 2017). These listings will appear at the top of the results if anyone searches for Airbnb listings in the city as they have the experience to make very successful listings. This, in turn, will move all of the less professional hosts to the bottom of the search results. This could cause these hosts to get less guests and make less money. This supports Tom Slee (2014) in his article in Jacobin Magazine where he indicated that Airbnb is becoming a commercial venture, not the sharing economy platform it was founded to be. Airbnb also encourages its hosts to be more professional by introducing minimum standards of cleanliness, basic amenities and others (Slee, 2014).

FINDINGS

Airbnb listings in Thessaloniki are increasingly commercial

Airbnb was founded on the idea that it could provide a local, authentic experience that could not be provided by traditional accommodations such as hotels. However, as Airbnb has grown and expanded to an ever greater consumer base, this has been weakened by services both provided by Airbnb and provided by third parties. This includes features on the platform such as instant booking and co-hosting services as well as third party companies that manage and buy up property solely to host that property on Airbnb. As indicated in a multivariate regression analysis, convenient and commercial features such as cleaning fees, deposits, cancellation policies, and instant booking do not deter guests, rather promote revenue generation.

Commercial factors including cleaning fee, strict cancellation policies, and instant booking availability were analyzed using multivariate linear regression to determine their combined influence on revenue generation. Dummy variables were established for cleaning fees (present=1; absent=0), strict cancellation policies (strict and super strict=1; other=0), and instant booking (available=1; not available=0). Combined, these factors explained 7.2% of the variance ($R^2=0.072$, $F(3, 1822)=47.006$, $p<0.01$), indicating that the model is a good fit for the data. Each aspect, cleaning fee ($\beta=0.187$, $p<0.001$), cancellation policy ($\beta=0.062$, $p=0.007$), and instant booking ($\beta=0.158$, $p<0.001$), significantly predicted higher revenues.

Table 7. Multivariate linear regression analysis for commercial factors influencing Airbnb listing revenue in Thessaloniki, April 2018.

Variable	Unstandardized Coefficients β	Unstandardized Coefficients Std. Error	Standardized Coefficients β	p
Cleaning fee	468.379	57.260	0.187	<.001
Strict cancellation policy	152.894	56.163	0.062	.007
Instant booking	361.283	51.786	0.158	<.001

FINDINGS

Airbnb host, Angeliki, does not like instant booking because it limits the control she has over the kind of people that she hosts. However, she is forced to allow instant booking because it is difficult to compete with other hosts who do use the service. This feature increases the risk for hosts and prevents them from denying a guest who may have bad reviews and the host does not want to host for a variety of reasons. This service brings Airbnb more in line with traditional accommodations by moving the focus away from providing a positive experience for both the guest and the host to providing hosts with a way to make as much money as possible. It is so powerful a tool for attracting guests, that it makes it difficult for hosts who prefer a good experience to a large profit to use the platform without compromising that preference.

Furthermore, very few of the listings offered in Thessaloniki are private rooms in shared apartments or homes (n=262 , 14.4%). Olga, an Airbnb host for a private room, indicates that she gets to meet her guests this way and gets to know many new people from all over the world. She also said that she keeps in contact with some of her former guests. This is in contrast to most of the hosts we interviewed, some of whom said that they may never meet their guests (offering keyless entry). Others only meet guests at check-in and communicate solely through the Airbnb platform. Most of the hosts we spoke to rarely, if ever, keep in touch with the people who stay at their whole apartment listing. Consequently, the personal and shared experience marketed by Airbnb is limited in Thessaloniki.

In contrast to this, many tourists still like to feel that they are living in a home and not a sterile hotel room. Many of the reviews we analyzed (219 out of 379), mentioned the quality of the home they stayed in and many of these reviews mentioned the comfort of the listing and the fact that they felt at home there. It also seems that while hospitality was the most common theme mentioned in reviews (274 out of 379), many of these reviews did not mention meeting hosts again personally after check-in. Many mentioned that after check-in, most of the communication between host and guest was done through the Airbnb platform. Many reviews did not see this as a negative. This indicates that there is a large market on the Airbnb platform for a more hands-off hosting experience, as long as the home itself feels comfortable.

FINDINGS

The current Airbnb market appears saturated, with limited economic opportunity for incoming investors

Hosts interviewed were split on the idea that the city was reaching its saturation level. While Elsa believed that there was plenty of room for new Airbnb listings to enter the market, others believed that the number of Airbnb listings was so high that there was no room for new listings on the market. A few hosts believed that listings were now being converted back into more conventional, long-term rentals, suggesting that perhaps the market for Airbnb listings is already saturated. According to many of our interviews, Airbnb prices have dropped recently. The mean price of Airbnb listings in the city is €45.48, the median is €35 and the range is €491. The maximum price is €500 and the minimum price is €9. Olga and two other hosts who had been hosting for many years perceive this drop in price to correlate to the increase in the number of Airbnb listings in the city. Of the listings that are currently on the Airbnb website, 10 listings were present in the city in 2012, by 2015 that number had increased to 220, 605 in 2016, 1268 in 2017 and currently 1,822 listing. Given the greater supply, hosts need to price competitively.

In order to understand the current real estate situation and the claims being made by hosts and investors about what it takes to start an Airbnb, we created case studies spread out across the city in locations with various characteristics. We looked for Airbnb listings with a known square area, a host who had superhost status, and preferably a host interviewed, so that we had more details on their property. Then, looking on Greece's largest real estate website, homegreekhome.com, we found listings with similar sizes and locations to the Airbnb listings we had chosen.

FINDINGS

Case 1: A small, one bedroom waterfront property, outside of the city center

The property listing found on homegreekhome.com placed this one bedroom, 55 square meter apartment, on the third floor at €55,000. Hosts indicated that renovation costs and time, were approximately €8,000 and took five months. Estimating a monthly income of €950, given 22 days of renting at €45 per night, we anticipate a return on investment in 5 to 6 years.

Case 2: A small one bedroom property near the Rotunda

This property listing, also found on homegreekhome.com, is a one bedroom, 50m² apartment located on the 6th floor. It is priced at €60,000. Hosts indicated that renovations would take roughly 2 to 5 months and would cost €6,000 to €10,000. Given 22 days of renting and a nightly price of €50, it is estimated that the monthly revenue of this property would be around €1,100 a month. At this rate, we estimated that it would take about 6 years to make the initial investment back.

Case 3: Small apartment near Aristotle Square

Our third case, also found on homegreekhome.com, is a two bedroom, 75m² apartment located on the 7th floor. It will cost €200,000 to buy this property. Hosts indicated that renovations in this area would take around 2 to 5 months and that they would cost about €4,000 to €10,000 and above. Given 22 days of renting and a nightly price of €65, a host would receive about €1,430 in revenue each month. With this revenue, we would anticipate a 12 year return on investment.

Case 4: Small apartment near Anapoli

Our final case, again found on homegreekhome.com, is a one bedroom, 65m² apartment located on the 2nd floor. It will cost €40,000 to buy, however we have no data on the length or cost of renovations in this area. Given 22 days of renting and a nightly price of €40, this property would generate a revenue of €880 per month. We would anticipate a 4 year return on investment.

FINDINGS

As these cases indicate, investing in new property as a commercial venture, for the purpose of generating a stable income, is a risky proposition. The hosts we have interviewed have either already owned the property that they are listing on Airbnb and are marketing it on Airbnb because it is unused, or they purchased the property two to three years ago when prices were significantly lower. One host indicated that he had purchased property in Aristotle Square (similar size and location to Case 3) for €25,000 and spent an additional €25,000. Such property prices are no longer available in the most desirable Airbnb listing locations. In addition, it is currently unclear if new legislation will be enacted that limits the number of days a listing can be offered, if property taxes will be raised, or if a tax will be placed on Airbnb listing income.

Expanding the Airbnb platform to offer experiences

Throughout our discussions and interviews, we sensed an overall appreciation for the work that the city has done to improve the tourism environment. The current mayor Yiannis Boutaris, who has served since the beginning of 2011, is credited with making vast improvements within the city. The new “Thessaloniki - Many stories, one heart” is a relatively new initiative designed to help increase tourism to the city. We spoke with Efi Koudeli, the general manager of the Thessaloniki Convention Bureau which manages the business travel for conventions and conferences within the city. Since the beginning of the bureau’s creation, she has witnessed an explosion of activity within the city. She remarked that, “5 or 10 years ago you would not hear any foreign language on the streets.”

Now, Airbnb and its influence on the growth and accessibility of tourism can benefit the city even more. The total estimated revenue through Airbnb per month is about €1,438,787. Airbnb Experiences could also extend the benefits of the platform to people who do not have property for accommodations, but have some sort of small business or a skill that can provide interesting experiences such as hikes, tours, and cooking classes. It can help them to market their experience on the Airbnb platform and make more money from this experience. Unfortunately, while Airbnb Experiences have been introduced into many cities of the world already, they have not been introduced in Greece.

This creates an opportunity to develop a centralized website and service that helps travelers connect with activities throughout the city. One of our interviewees, Panos also sees this as an opportunity for further promotion of the city beyond the normal concentration around shopping and monuments that the city is advertising currently.

CONCLUSION

The data we collected indicate that most Airbnb listings are concentrated within the city center. However, not all listings are active, accommodation sizes vary, and while most hosts have only one listing, there are a growing number of hosts with multiple listings. Analysis of multivariate linear regression analysis of data pulled from the Airbnb website in April 2018, confirmed reports from hosts and the literature, that host characteristics (superhost status, location of host, response rate, duration of hosting) influence revenue generation. Furthermore, both spatial and multivariate analyses confirmed that location within the city, in addition to property type (as an entire apartment), and number of guests accommodated improve revenue generation. Finally, interviews, analyses of guest reviews, and analysis of the Airbnb listing data reveal that Airbnb listings in Thessaloniki are becoming increasingly commercialized.

There appears to be a trend away from shared living arrangements like private rooms, more instant booking, and the increased use of Airbnb as a business venture rather than as an opportunity to personally connect with a guest, further reducing interactions between hosts and guests. There is also an increase in co-hosting arrangements and in the number of hosts with multiple listings. This trend suggests that Airbnb listings are increasingly seen as more of a way to make money than as a social experience where the host and the guest interact in positive ways for each.

Currently, no research has been conducted on the relationship between the demographics of the city and the economic opportunity presented by Airbnb. There is potential for the Airbnb platform to offer economic opportunities to socio-demographic groups who do not currently own unused accommodation space in the city through support services, or through the introduction of Airbnb Experiences. It seems likely, based on the current rate of expansion of tourism in the city, as well as the relative ease of setting up an Airbnb Experience compared to buying, renovating, and marketing a listing, that expanding the platform to include Airbnb Experiences can provide more economic opportunities to ordinary people living in Thessaloniki. It also seems that this would be highly welcomed by residents of Thessaloniki.

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APPENDICES

Appendix A: Content Analysis of Guest Reviews

Feature	Frequency
Size	84
Quality of Home	219
Cleanliness	158
Decor	78
Convenient Location	274
Scenic Location	48
Noise Level	53
Price/Value	23
Amenities	90
Communication	141
Hospitality	210
Family/Group Friendly	36
Accommodates Couples	7
Accuracy of Photos/Listing Description	29

APPENDICES

Appendix B: Interview Spreadsheet

Name	Description	Number of Rentals	Type of Rental	Location(s) of Rental	Year Started Hosting
V.	Superhost	2	Entire apt	Near Rotunda	2013
Elissavet Leonidou	Superhost	9	Entire apt	Multiple	2013
Niki Ragatzi	Management Service & Real Estate	5	Entire apt	Multiple	2016
Angeliki	Host	1	Entire apt	Near White Tower	2014
Efi Koudeli	General Manager, Thessaloniki Convention Bureau	NA	NA	NA	NA
Marina Katsarou	Student	NA	NA	NA	NA
D.	Superhost & co-host	25	Entire apt	Multiple	2015
COLORS Hotels	Hotel	7	Entire apt	Ladadika	NA
T.	Superhost	3	Entire apt	Near Aristotle Square	2012
Olga	Superhost	1	Private room	Stravapouli	2012
Panos	Management Service	3	Entire apt	Multiple	2017

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Efi Koudeli	General Manager, Thessaloniki Convention Bureau	NA	NA	NA	NA
Marina Katsarou	Student	NA	NA	NA	NA
D.	Superhost & co-host	25	Entire apt	Multiple	2015
COLORS Hotels	Hotel	7	Entire apt	Ladadika	NA
T.	Superhost	3	Entire apt	Near Aristotle Square	2012
Olga	Superhost	1	Private room	Stravapouli	2012
Panos	Management Service	3	Entire apt	Multiple	2017

APPENDICES

Appendix C: Interview Questions

Hosts & Management Services

1. How did you find out about hosting Airbnb?
2. What influenced your decision to become a host?
3. How many properties do you have?
 1. Where
 2. Are they a private room in your home or entire apartment
 3. What floor are they on
4. What do you do to attract more guests and get better reviews?
 1. Amenities?
 2. Services?
5. Do you know of other resources that hosts use to make their offering better?
 1. Contacts
 2. Renovators (painters, furniture, etc)
6. How do you wish you could improve your rental?
7. Is your Airbnb income a necessity for you?
 1. How do you determine price?
 2. What percentage is revenue?
 3. Full time vs part time other job?
8. Do you network with other Airbnb hosts?
 1. Thessaloniki Airbnb Host Facebook Group
9. What challenges do hosts face?
 1. With the website or the platform
 2. With time (Outside responsibilities)
 3. With guests
 1. What type of people stay there?
 2. Do you look at their profiles?
 3. Do you leave gifts?
10. Would you recommend hosting an Airbnb to family/friends? Why or why not?
11. What is the name of your offering if we wanted to look at it?
 1. What about your listing makes it successful?
 2. Do you think this would help the Airbnb community in Thessaloniki?
12. Do you use any management or cleaning services?
 1. Have you used other services such as students helping renovate
 2. Photographer
 3. Stores that you buy furniture or linens from
13. (Do/how do) you provide recommendations or for your guests?
14. Have you heard of the Experiences program? (Experiences are excursions or other activities designed and led by local hosts. Hosts give guests unique access into places and communities in their city.)

APPENDICES

Appendix C: Interview Questions

Non-Governmental Organization Official

1. How has the city's tourist atmosphere changed in the last 5 years?
2. What are the city's current plans to grow tourism in the city? How effective have they been?
3. What is the city doing to encourage entrepreneurship in tourism?
4. How much is Airbnb playing into your tourism strategy?
5. How has Airbnb affected the city since its introduction?

Hotel Manager

1. How long have you managed this hotel for?
2. What other experience do you have in the hotel or tourism industry?
3. How has hotel business changed in the last 5 years?
4. How has tourism has changed in Thessaloniki over the past 5-10 years?
5. What experiences do you try to connect tourists with and how?
6. How do you market local products to guests?
7. Do you think there is room for tourism to grow in the city?
8. Is there room for more hotels and other accommodations?
9. How is COLORS Urban Hotel different than other hotels?
10. What types of guests stay at your hotel?
11. How do you advertise your hotel?
12. Since the mission statement of your hotel is similar to Airbnb's, has that platform impacted your business?
13. Would you be interested in listing your hotel in Airbnb's Boutique Hotels?

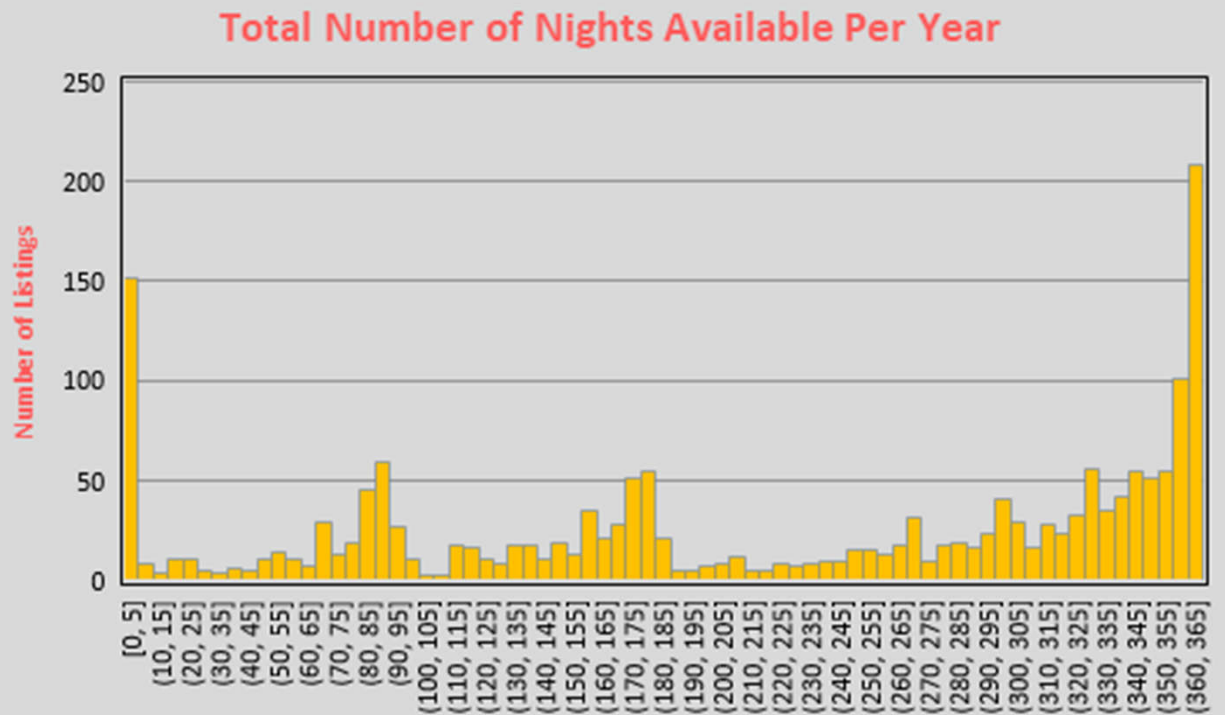
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Appendix D: Consent Script

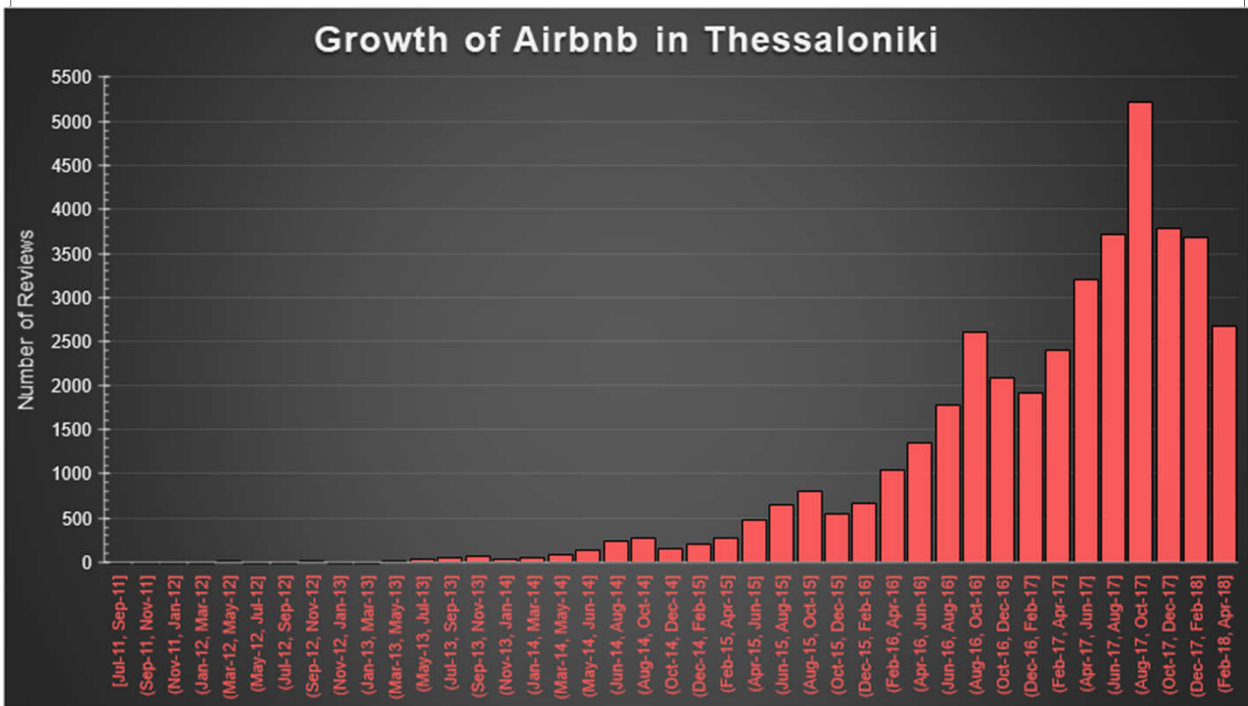
We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting interviews along with members of Creativity Platform on Airbnb. Our goal is to provide information for Creativity Platform so that they can help expand the benefits of Airbnb to more people. Your participation in this interview is completely voluntary and you may withdraw at any time. No names or identifying information will appear in any of the project reports or publications unless your consent is provided. If you have no objections, we would like to reference this interview in our project report and publications. Your participation is greatly appreciated. If you are interested, a copy of our results can be provided at the conclusion of the study. You can contact us further at urbanbnb18@wpi.edu.

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Appendix E: Additional Graphs



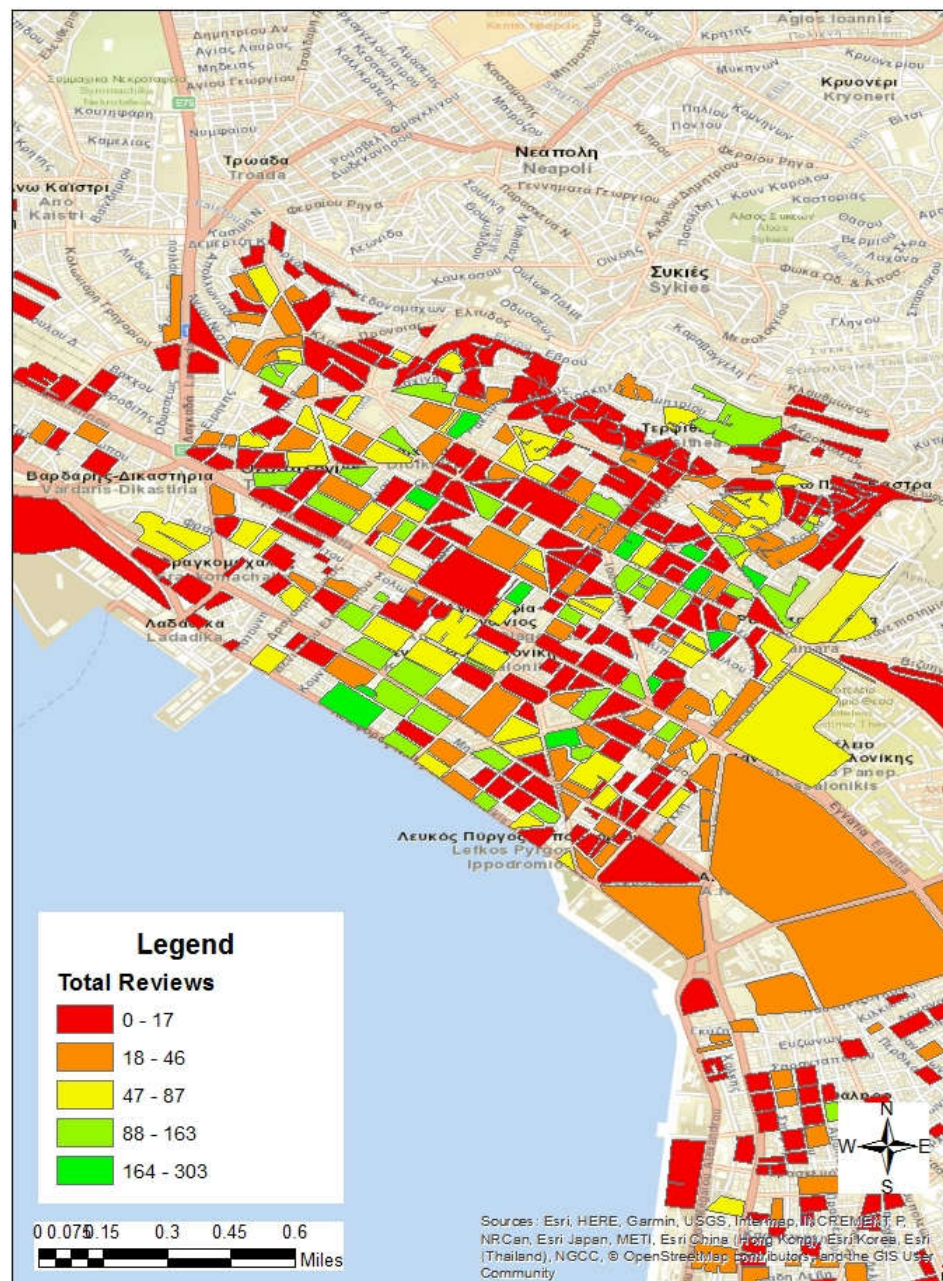
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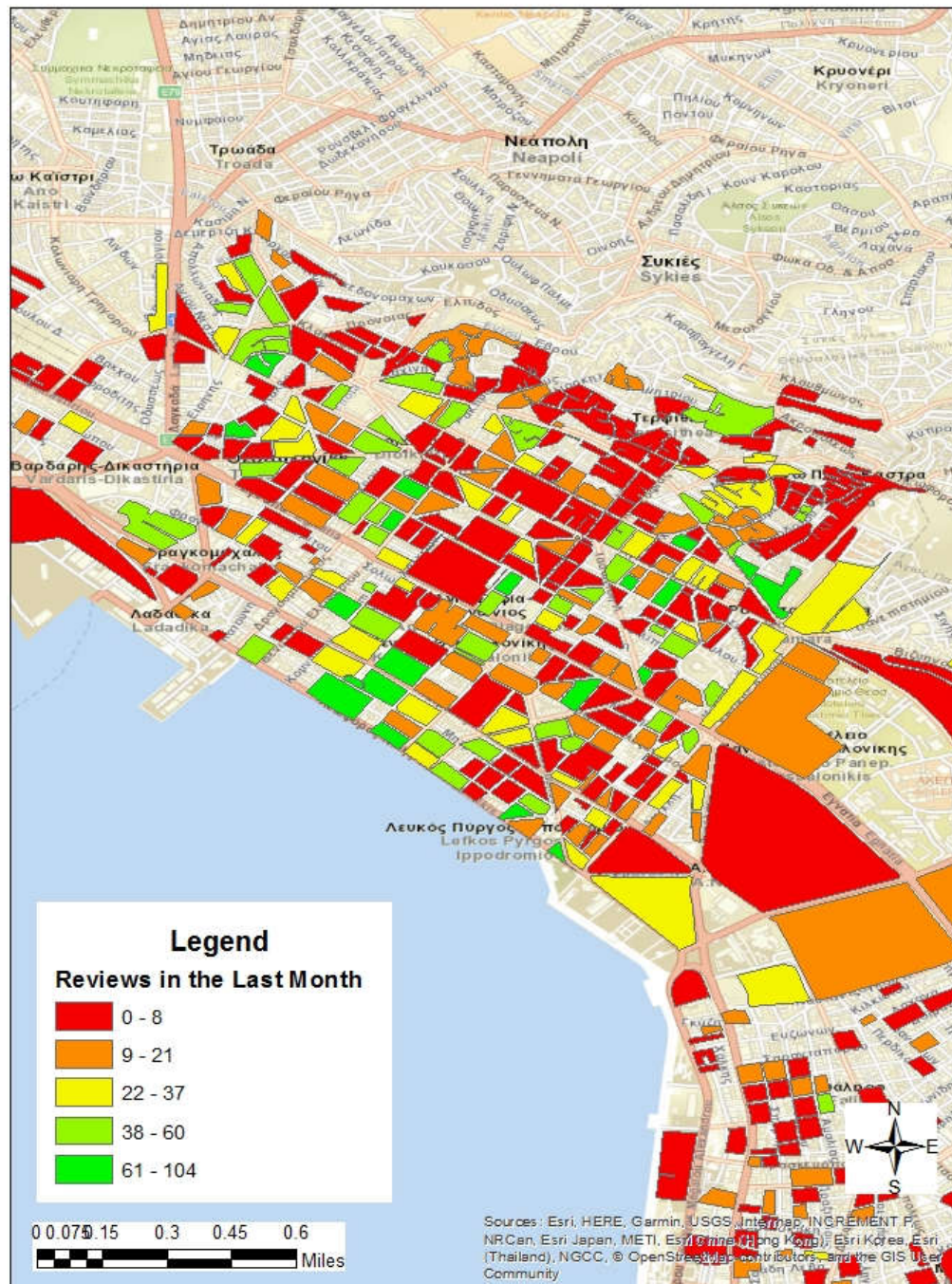
Appendix F: Additional Maps

Total Number of Reviews



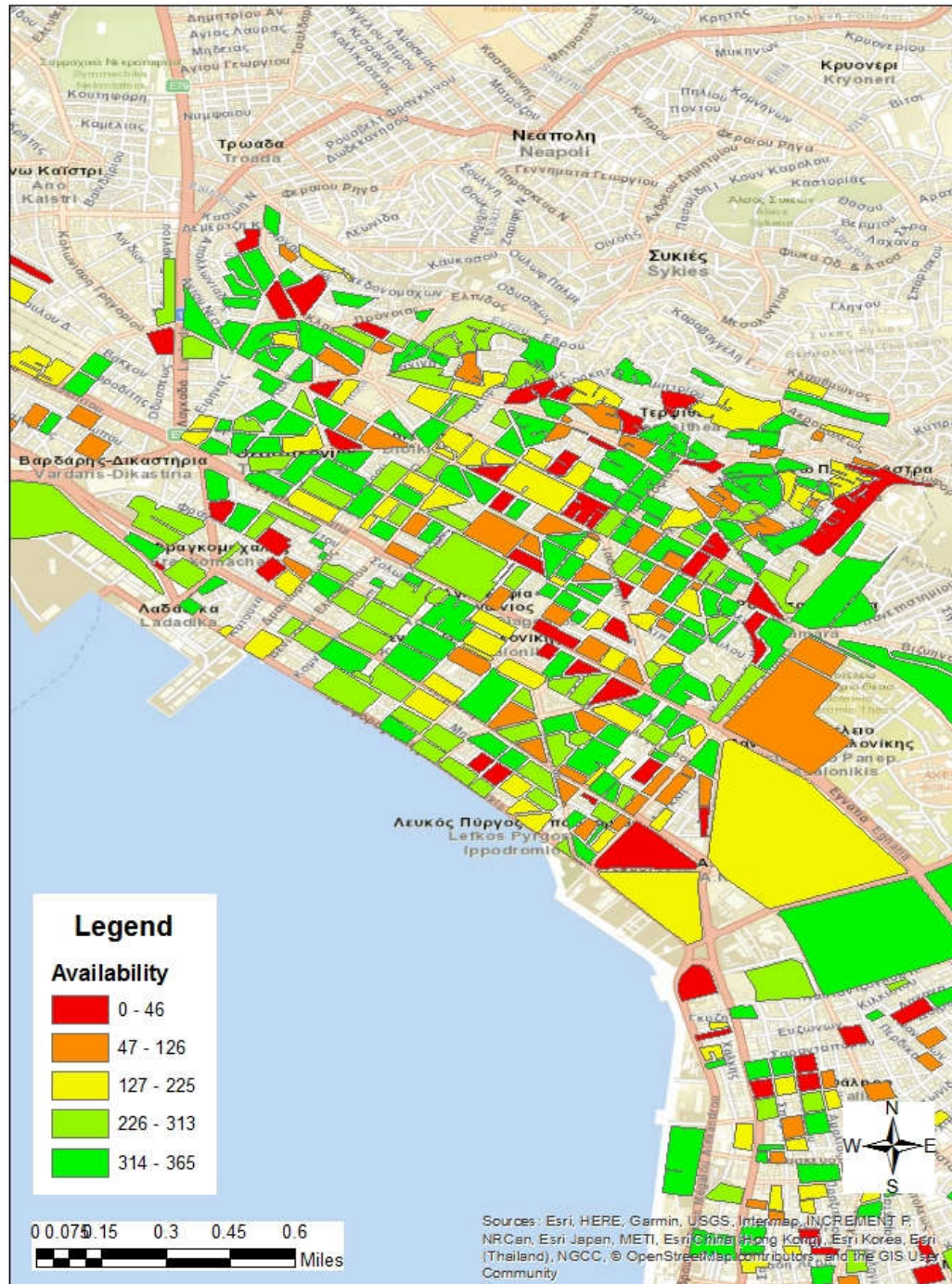
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Total Number of Reviews in the Last Month



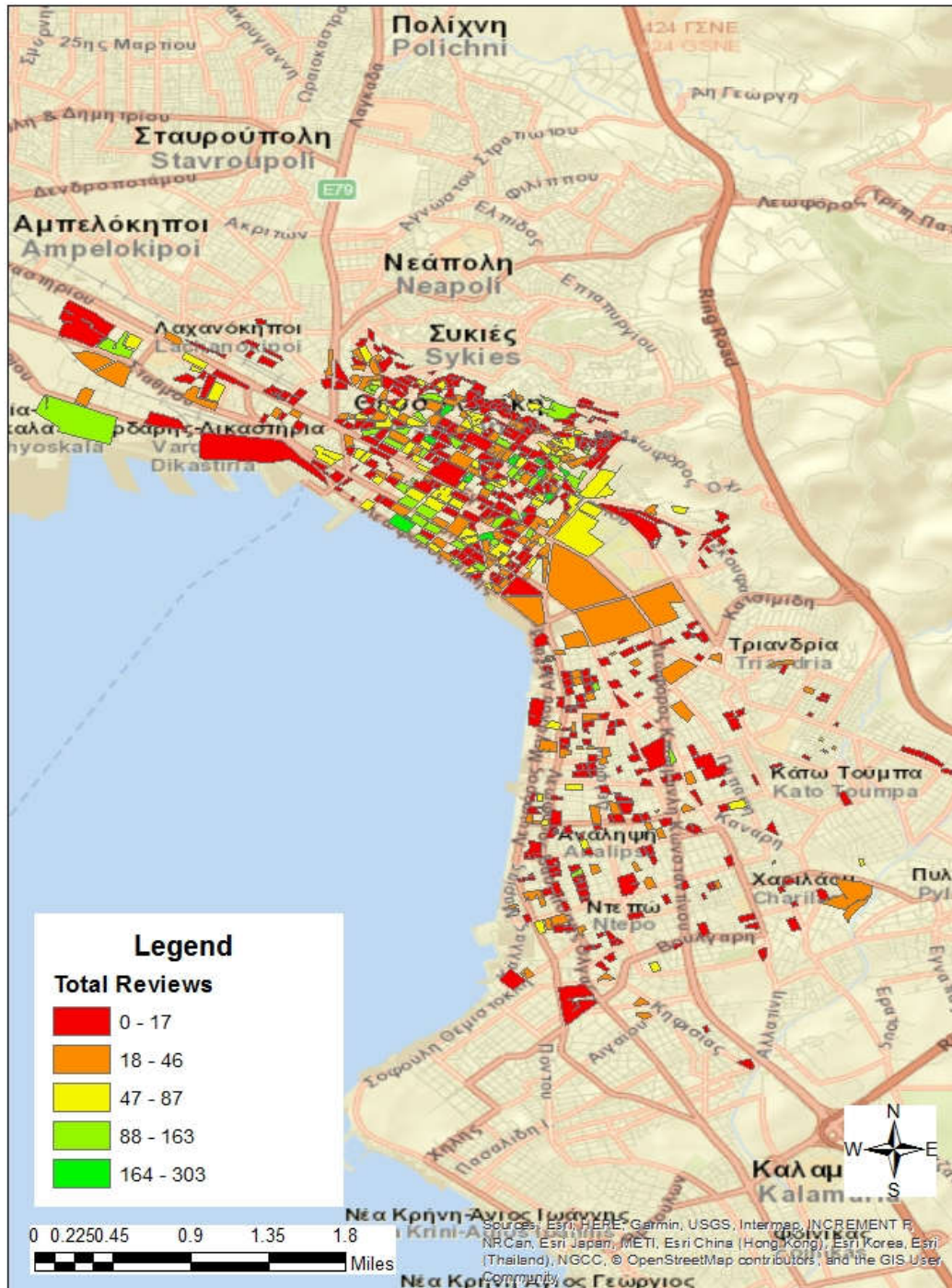
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Availability of Airbnb Listings



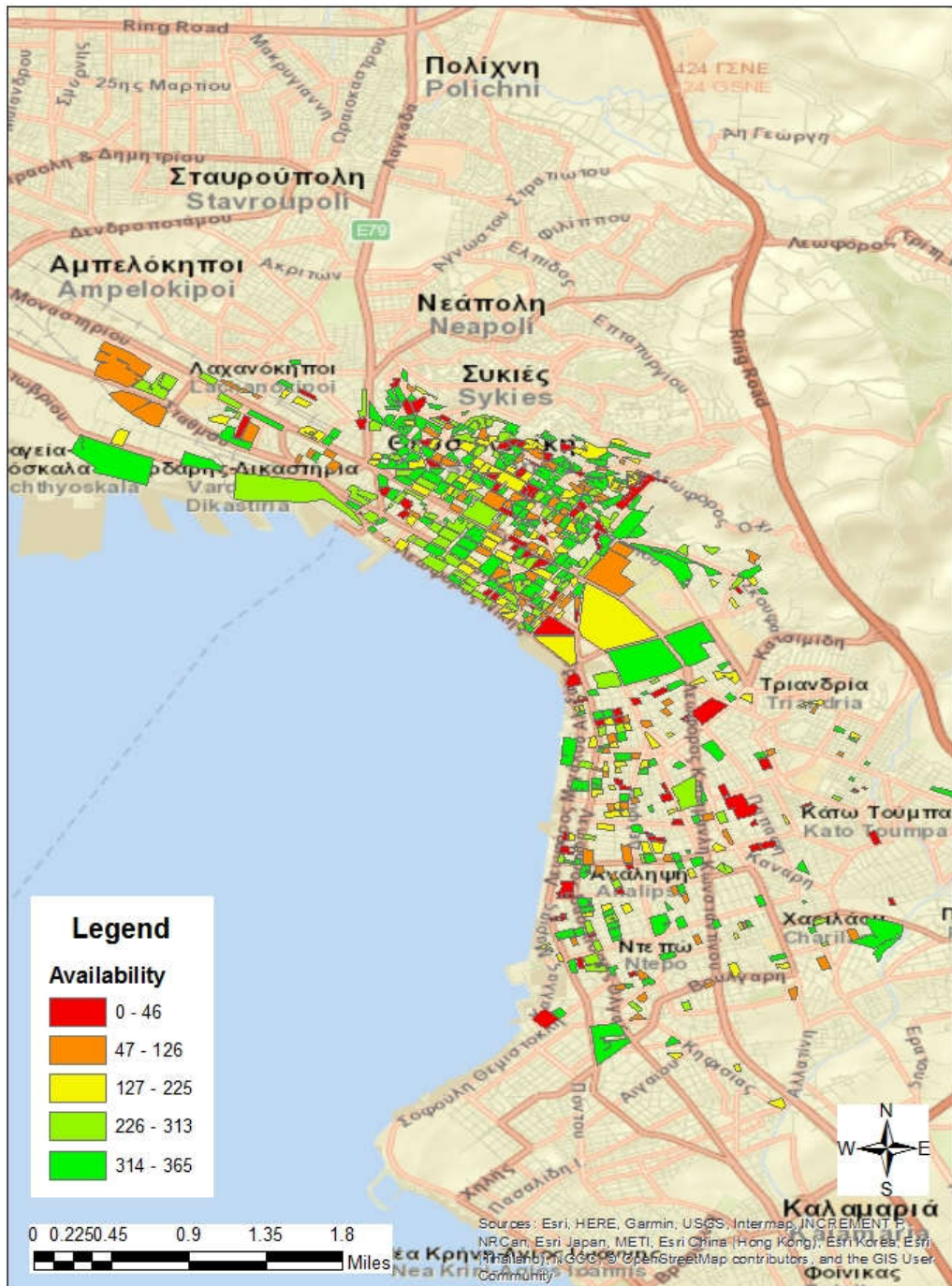
APPENDICES

Total Number of Reviews



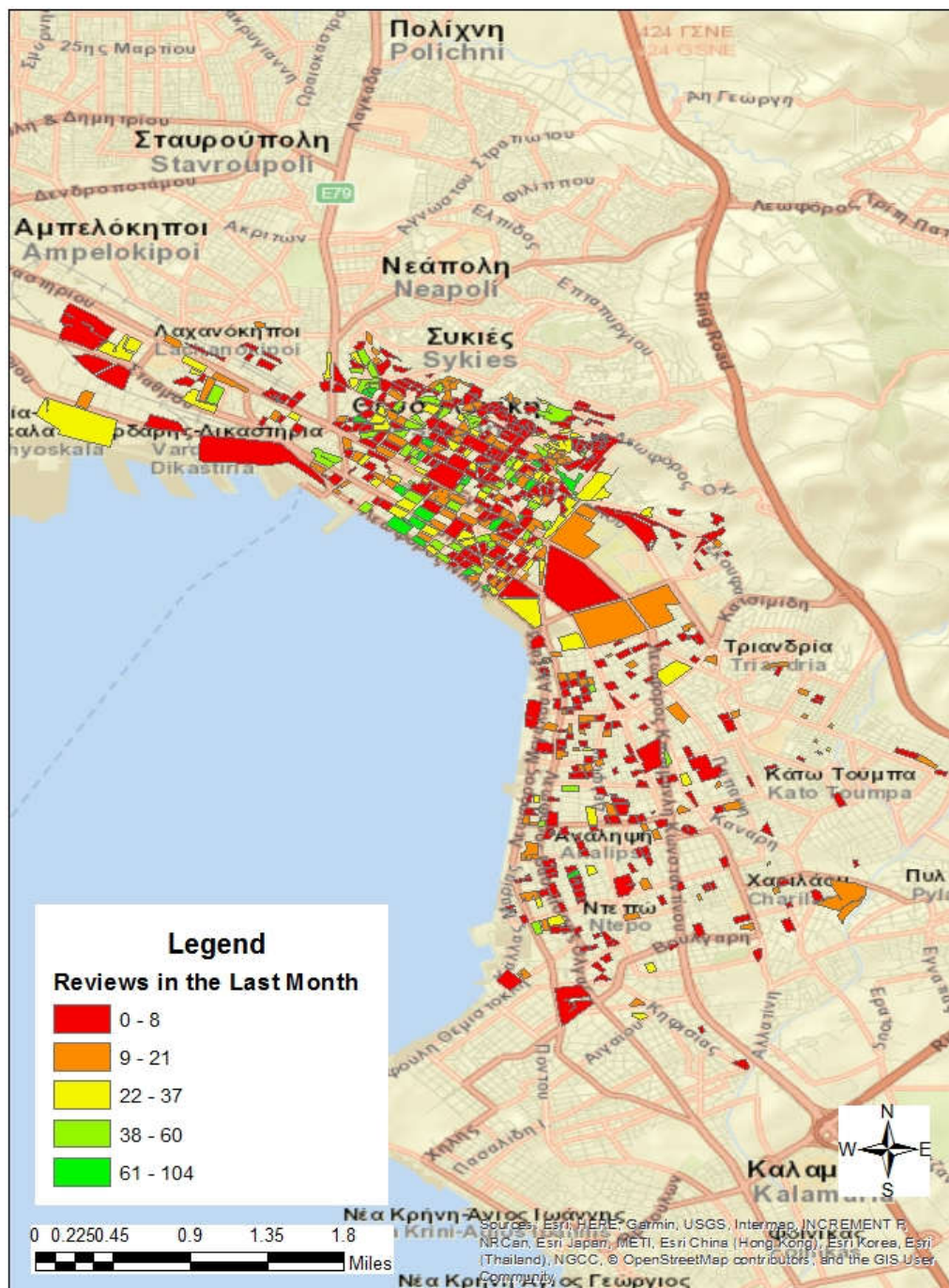
APPENDICES

Availability of Airbnb Listings

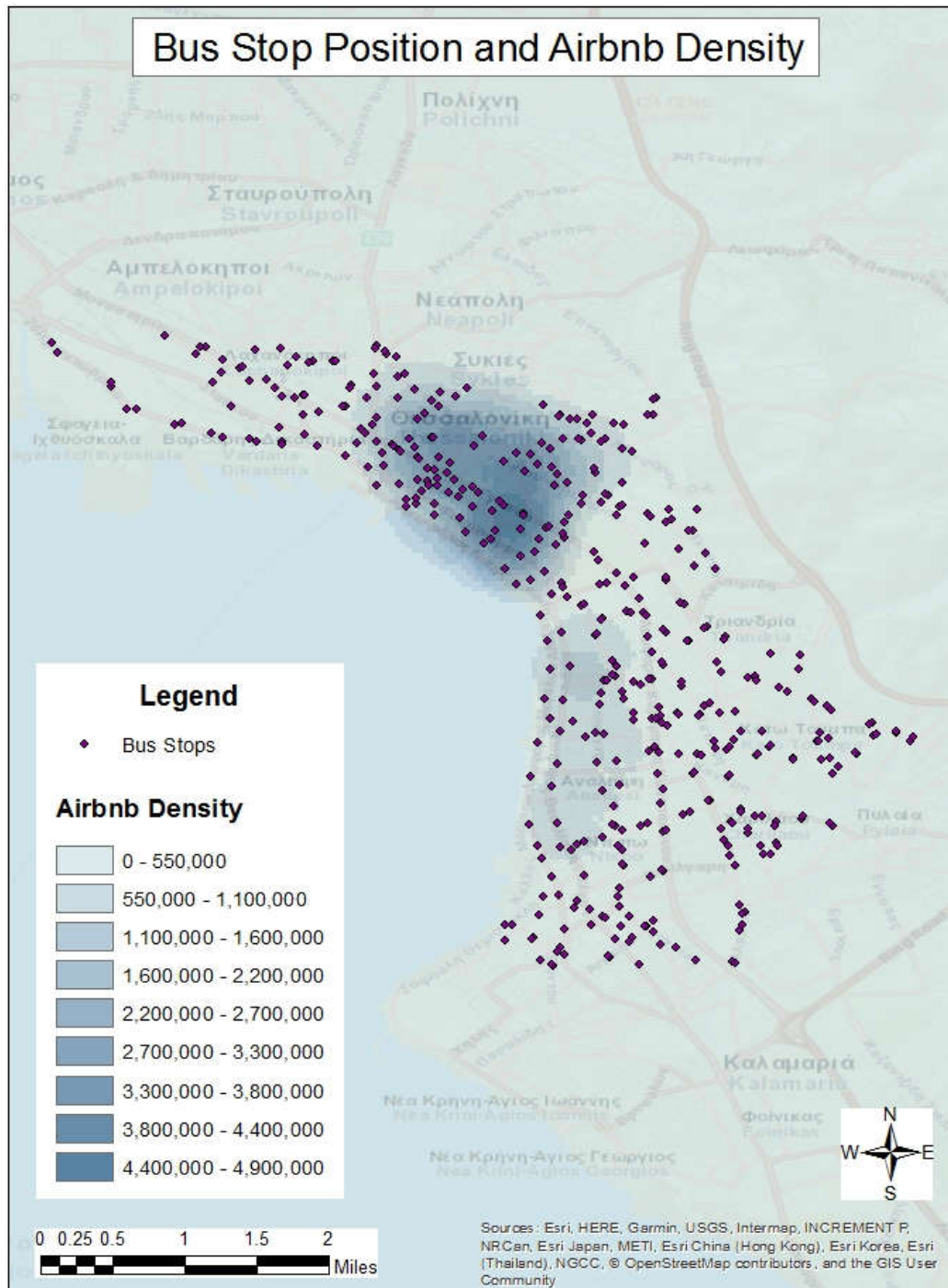


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Total Number of Reviews in the Last Month



APPENDICES



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