

Master Thesis

FOR RENT: Tourists only

The impact of AirBnB rentals on the Greek island communities

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Abstract

Since the conception of AirBnB there has been a drastic shift in tourism accommodations on the Greek islands. This thesis focused on researching the socio-economic impacts of AirBnB rentals on locals on the Greek islands. A quantitative analysis focused on the spread of AirBnB rentals, whereafter Serifos was chosen for a qualitative analysis. The results show that the amount of AirBnB rentals increased at the expense of housing for local people. The interviewed stakeholders perceived negative impacts on the local community and fears for the future if AirBnB rentals are not properly regulated.

Keywords: AirBnB, Greek islands, tourism, community impacts

1. Introduction

Tourism is one of the biggest economic income sectors of Greece, even more so for the Greek islands (Rossidis et al., 2019). Historically, tourists have stayed in conventional tourism accommodations like hotels, but since the conception of AirBnB there has been a drastic shift in tourism accommodations (Zervas et al., 2017). AirBnB was founded in 2008, but has experienced exponential growth in the amount of hosts supplying short-term rentals all over the world (Guttentag, 2015), also on the Greek islands. While hotels are typically restricted to certain areas and there are legal regulations to prevent too many hotels, this does not always apply to AirBnB rentals (Biber et al., 2017). Popular tourist locations are thus overcrowded with a supply of AirBnB rentals that result in higher prices for the local housing market, negatively impacting locals and others looking for longer-term housing. While AirBnB specifically, and short-term rental in general, is quite a recent phenomenon in the tourism industry, it already has had a significant effect on both this industry and the locations these rentals are situated. Research on the impact of AirBnB on the tourism industry and locals has already been conducted in several locations, however there is limited research regarding this topic on the Greek islands. Therefore, the focus of this thesis was on researching the socio-economic impacts that AirBnB rentals have on locals on the Greek islands.

This thesis is organized as follows: First, a literature review on the impacts of AirBnB rentals is conducted in order to provide insights into the focus and approaches of previous research on this topic. Then, the methodology of this study is presented. Consequently, the results are analyzed and discussed, divided by quantitative and qualitative data. Lastly, the main conclusions of the research are stated.

2. Previous research on AirBnB

A few years after the start of AirBnB in 2008, the first researches into this phenomenon were conducted. Guttentag (2015) explored the rapid emergence of AirBnB by applying disruptive innovation theory and looked at the positive and negative impacts AirBnB may have on its accommodation locations. Especially legality issues and tax concerns were cause for potential problems. Zervas et al. (2017) explored the economic impact of AirBnB supply on incumbent accommodations in Austin, Texas, USA. They found that the AirBnB rental impact on hotel revenue is 8-10%, affecting lower-priced and non-business hotels the most. This economic impact is mostly due to less aggressive hotel room pricing, which is beneficial for both AirBnB and hotel consumers. Adamiak et al. (2019) performed a spatial analysis of AirBnB rental offer in Spain, to define its pattern and determinants of its distribution. They found that, apart from the major cities, AirBnB rentals are present in holiday destinations, where the supply often consists of second or investment units. The location of these rentals is mainly determined by the supply of these units, the traditional tourism accommodation distribution, the coastal location, and the level of internationalization of tourism demand. Adamiak (2020) focused on the long-term role of AirBnB rentals in urban and non-urban tourism destinations in five Nordic countries (Denmark, Finland, Iceland, Norway, Sweden). The study showed that peer-to-peer rental supply and use is concentrated in areas that receive a fast increase in the amount of tourism. Wyman et al. (2022) focused on the impact of short-term tourist rentals on residential property pricing, specifically Isle of Palms, a small city in South Carolina, USA. They found that house owners prefer short-term rentals compared to long-term rentals, due to higher revenues. As a result,

they predict that the short-term rental market will continue to increase and compete with traditional tourist accommodations. Styliadis & Terzidou (2023) explored the perceived impacts of tourism by residents, of which the phenomenon of AirBnB formed a part. Their results showed that residents' perceptions of the impacts of tourism are greatly affected by the rapid expansion of AirBnB rentals in residents' living areas. Cheng et al. (2022) researched the impacts of AirBnB on host communities in Queenstown, New Zealand, through a stakeholder study of AirBnB hosts, traditional accommodation providers, local residents, and policy makers. The results show the complexity of AirBnB rental growth due to multiple and conflicting factors, and show the advantage of using multiple stakeholder perspectives to provide a more comprehensive understanding of the impacts of AirBnB rentals.

2.1 Islands

In the last few years, research on AirBnB has also focused more closely on the impact of AirBnB on islands. Especially the Spanish islands (the Balearic and Canary islands) and the Greek islands are popular research areas. However, a destination like Iceland has also been researched. Roslmaier & Albarran (2022) performed a case study on Heimaey, Iceland, for an in-depth exploration of local commitment and withdrawal due to AirBnB rentals. They found that AirBnB rentals concentrated in the town center of Heimaey, and caused residents to withdraw from this area and to mourn for their lost pasts due to their heightened sense of place. Fortunately, residents still had other areas available to retain their meaningful places and communities.

Also a relevant research for this study, Jordan & Moore (2018) performed an in-depth exploration into residents' perceived impacts of transient vacation rentals, of which AirBnB contributes to, on the island of Oahu, Hawai'i, USA. They found both positive and negative economic, environmental, and sociocultural impacts, although residents perceived more negative impacts.

2.1.1 Spanish islands

Yrigoy (2016) researched the impact of AirBnB in the urban area of Mallorca. The author found that AirBnB has caused an increase in rental prices in this area as well as a decrease in the non-tourism rental market. This can become a problem for Mallorcan residents, although there are real estate agencies and local landowners that use AirBnB for housing units with low demand, as well as house owners that profit from this phenomenon by renting out a room or their own house as an additional source of income. In both ways, AirBnB further perpetuates the class and property tenancy differences that are present on Mallorca. Martin Martin et al. (2018) looked at the potential environmental impacts of a higher concentration of tourists due to vacation rental websites on the Balearic islands in Spain. They found that vacation rentals can either reduce the seasonality in tourism destinations, or exacerbate this effect. Their research showed that vacation rentals, such as AirBnB, aggravate the problem of seasonality, creating a higher concentration of tourists in a limited time period and thus cause a higher pressure on environmental resources on the islands. Researching another perspective, Benitez-Aurioles (2020) looked at the impacts of peer-to-peer market on tourist accommodations on the Balearic islands. The researcher found that hotel occupancy is negatively affected by a growth of short-term vacation rentals, while tourism employment increases.

Eugenio-Martin et al. (2019) performed a case study on the Canary islands to explore the spatial distribution of AirBnB rentals and the main determinants of location choice. They found that AirBnB supply surpasses traditional tourist accommodations in cities and urban areas, but not in sun and beach nor nature-based destinations. In these areas, hotels are closer to the tourism resources and thus cannot be competed with by AirBnB rentals. Most importantly, this research shows that the population size and the amount of tourists are determinants for AirBnB rental location, but the main determinant is price, which is much more flexible.

Focusing on just one city on one Canary island, Hubscher et al. (2020) researched the impact of AirBnB in Santa Cruz de Tenerife by looking at AirBnB's spatial patterns. They found that AirBnB opened up the rental market in neighborhoods outside of the centrally established tourism accommodations, causing a price gap in these neighborhoods between AirBnBs and the housing rental market. The highest prices were for the smallest units within the city center, but it should also be noted that the Anaga Mountains, a natural and rural area, had the highest number of AirBnB rentals per capita, while another suburban area experienced the highest AirBnB rental growth on the market, showing a relationship between AirBnB and suburbanization processes.

2.1.2 Greek islands

Previous research focusing on AirBnB rentals on the Greek islands have been done using several approaches and methods. Xifilidou et al. (2018) focused specifically on Mykonos and AirBnB's place in the hospitality real estate market on this island. They found that on Mykonos, AirBnB rentals are mainly whole houses of high quality with high occupancy rates, are mainly located in the west and south of Mykonos, and that a high amount of these houses are bought solely with the intention to supply short-term rental as opposed to traditional rental or self-occupancy. Mykonos, along with Santorini, are the only two islands where AirBnB did not influence their economic activity, as revenues and amenities were already the main tourism income. It is also worth noting that their study shows that AirBnB is not always the lower priced tourism accommodation option on Mykonos. Moreover, AirBnB rentals on Mykonos can offer a certain uniqueness and belongingness to its customers due to its unique properties, which traditional tourism accommodations, such as hotels, cannot. This could be the reason that AirBnB rentals are chosen over hotels, even though they are more expensive.

Constantoglou et al. (2020) researched the spatial impact of AirBnB rentals among three islands: Rhodes, Syros, and Patmos. Their objective was to compare AirBnB and hotel units according to the spatial allocation of bed and bed density. On Rhodes, an already mature tourism destination, AirBnB units complement hotel units and both are located in the same areas, while on Syros and Patmos, which are new tourism destinations, the amount of AirBnB units grows faster than that of hotel units and AirBnB units dominate the tourism accommodation market.

Apergis et al. (2020) also compared AirBnB to hotels, but focused on their revenues and looked at multiple popular destinations in Greece: Athens, Delphi, Mykonos, Santorini, Corfu, Crete, Rhodes, Halkidiki, Thessaloniki, Nafplio, Skiathos, and Zakynthos. They found that primarily non-business and low-price hotels are affected, and that the hotel industry responds to AirBnB rental competition by lowering their room prices, not through occupancy rates. They state that although AirBnB is a new phenomenon in the Greek tourism accommodation market, it is already a significant competitor against hotels.

This research will combine several of the research objectives from mentioned studies to provide an insight into the socio-economic impacts of AirBnB rentals on all Greek islands where AirBnB rentals are present, and will also provide an in-depth qualitative exploration of the socio-economic impacts of AirBnB rentals on the residents of a Greek island.

3. Methods and data

As mentioned in the introduction, this research focused on the socio-economic impacts of AirBnB rentals on the Greek islands. This was to answer the following research question: **How do AirBnB rentals socio-economically impact the continuity of local life on the Greek islands?**

This research question was answered by conducting a sequential mixed methods research approach, using both quantitative and qualitative methods. Creswell & Clark (2011) define mixed methods research as “a research design (or methodology) in which the researcher collects, analyzes, and mixes (integrates or connects) both quantitative and qualitative data in a single study or a multiphase program of inquiry” (p. 2). The benefit of conducting a mixed methods research is that the limitations of a quantitative approach can be overcome by the advantages of a qualitative approach, and vice versa, resulting in a more comprehensive and in-depth study (Almeida, 2018). For this research, a quantitative approach was first conducted and the results from the quantitative study were used for the qualitative approach. Johnson et al. (2007) and Bergman (2008) suggested this type of research to be called a sequential explanatory design. An explanatory design is useful when the quantitative data is the initial element of the research and the qualitative data then builds upon the results of the quantitative data results (Creswell & Clark, 2011).

3.1 Quantitative

3.1.1 Data collection

The AirBnB rental data was collected from AirDNA (n.d.) in the summer of 2023. This website offers many insights into AirBnB rentals globally, but for this thesis the following variables were included:

- Active rentals;
- Total rentals;
- The average daily rate;
- The occupancy rate and the occupancy rate for August specifically;
- The rental growth from Q2 2022 to Q2 2023, in absolute numbers and in relative terms;
- The rental size of the AirBnB rentals, specifically the amount of AirBnB rentals consisting of 1 room and 5+ rooms, in absolute numbers and in relative terms; and
- The revenue and the revenue for August specifically

To be able to conduct a comparison between AirBnB rentals and hotel beds on the Greek islands, the following data was collected from ELSTAT (n.d.):

- Total hotel beds;
- Total nights spent in hotel; and

- Average nights spent in hotel

To calculate the AirBnB and hotel beds per km² and per capita, the Census 2021 report of population (ELSTAT, 2023) was used. The population and area of the islands, as well as if the islands possess an airport, can be found in Appendix A.

3.1.2 Statistical analysis

A short statistical analysis was conducted to be able to provide an overview of the presence of AirBnB rentals, in comparison to hotel beds, on the Greek islands. Scatter plots were made to visualize the amount of AirBnB rentals and hotel beds in general, per km², and per capita. Furthermore, box plots were developed to show the range of the amount of AirBnB rentals and hotel beds in general, per km², and per capita, and to show some outliers to this range.

3.1.3 Scope

Crete was not included in the research, due to its disproportionate size and, consequently, its disproportionate tourism industry compared to the other islands. Including Crete would skew the research results and thus depict a misrepresentative image of the AirBnB rental situation on the Greek islands. Moreover, the administrative region Crete is very often also not included in data reports due to these reasons, thus it is consistent that Crete was excluded from the scope of this thesis research.

Furthermore, the reasons that other Greek islands were not included in the research were because there was no AirBnB data available from those islands or the islands did not have any AirBnB rentals.

Regarding the data for the hotel beds, these variables were only known for the Cyclades, Dodecanese, and North Aegean islands.

3.2 Qualitative

Based on the results of the quantitative approach, a representative island was chosen to conduct the qualitative part of the research. The choice of island depended on similar characteristics with multiple islands, so that there is a possibility that the findings could well be extrapolated to other Greek islands as well. The purpose of the qualitative approach was to get an in-depth perspective into how locals feel and perceive the impact of AirBnB rentals on their life.

3.2.1 Participant recruitment and data collection

For this research, ten semi-structured interviews were conducted and audio-recorded. Semi-structured interviews were ideal for this study, as there were some predetermined questions, but more in-depth questions could be asked if a participant mentioned something of interest that was not part of the interview guide. This form of interviewing benefits from the advantages of unstructured interviews, in which the interview is steered in the direction that the participant is knowledgeable of, and from the advantages of structured interviews, in which the interviewer can focus on topics and questions that are deemed important for the research, while not having to be limited by the disadvantages of

either of these interview types (Leavy, 2014). The predetermined interview guide, as well as the information sheet and consent form for the participants can be found in Appendices B and C, respectively.

Initially, participants were recruited through a contact who had knowledge of stakeholders in the tourism and AirBnB rental industry. Once these participants were contacted and interviewed, they were asked if there were other stakeholders that could be contacted for interviews to provide more and/or different insights into the impacts of AirBnB rentals on the selected island. This method of participant recruitment, called snowball sampling (Parker et al., 2019), was useful for this research due to the initial limited connection to the stakeholders involved in the tourism and AirBnB rental industry. The following stakeholders were interviewed for this research:

- The mayor of the island;
- Real estate agents;
- Greek professor focused on tourism on the Greek islands;
- Foreign AirBnB rental owners;
- A potential AirBnB rental owner;
- Serifos Tourism Committee member;
- AirBnB property manager for remote house owners; and
- The representative of the room owners' association, who also rents out a non-AirBnB apartment.

After these interviews a saturation point was reached, which is usually the point when participant recruitment and interviewing is stopped (Parker et al., 2019). Participants suggested stakeholders that were already contacted and interviewed, and the insights collected from the interviews were similar to those provided by other participants as well, depicting that conducting more interviews would not add to more and/or different insights useful for the research.

3.2.2 Data analysis

The audio-recordings of the interviews were transcribed and could then be analyzed. This was done inductively, meaning that instead of analyzing the interview data through a predetermined framework (deductive analysis), common insights were identified while analyzing the data (Reichertz, 2014). Moreover, these common insights were then grouped together in corresponding themes and patterns, which is known as qualitative content analysis (Schreier, 2014). These themes and patterns were then used for thematically coding the interview transcripts so they could be more easily analyzed.

4. Results

4.1 Descriptive analysis

The following descriptive analysis was extracted from Tables 1 and 2. Table 1 presents all the AirBnB rental data, while Table 2 presents some important indicators, namely the lowest, average, median, and highest values of the AirBnB rental data indicators.

For almost all islands, there is a big difference in the average occupancy rate of the AirBnB rentals compared to the occupancy rate in August. August seems to be the busiest month in terms of AirBnB rentals, especially on Hydra, Anafi, Kimolos, and Skiathos, where

all AirBnB rentals are occupied in this particular month. Leros and Salamis have the lowest occupancy rate across the whole year (37%), while Lesvos has the lowest occupancy rate in August (67%). Santorini has the highest occupancy rate across the whole year (80%). Tied to the occupancy rates, it is not surprising that the revenues of rentals in August is also higher than the average revenues of the AirBnB rentals on the islands. Mykonos has both the highest revenue over the whole year as well as in August (5,500 and 9,800 euros, respectively), while Chios has the lowest revenue across the whole year (562 euros) and Lesvos has the lowest revenue in August (949 euros).

On all islands except Aegina (-24), Folegandros (-1), Syros (-1), Karpathos (-36), Lesvos (-21), and Skiathos (-3), there has been an increase in the amount of AirBnB rentals in Q2 of 2023 compared to Q2 of 2022. Corfu had the biggest absolute increase in the amount of AirBnB rentals, namely 597. Notable relative increases can be observed in Tilos (59.2%), Leros (47.4%), Kastellorizo (37.5%), Kos (29.5%), Kythnos (22.3%), and Salamis (22.1%), while Kasos (-27.3%) has the biggest relative decrease in the amount of AirBnB rentals.

It is also interesting to look at the amount of AirBnB rentals that consist of only 1 room, compared to those with 5+ rooms. Most islands barely have any AirBnB rentals with 5+ rooms, except Mykonos, where the percentage of rentals with 5+ rooms is comparable to those with 1 room, 28% compared to 29%, respectively. On Kea, Spetses, and Antiparos there are also comparable amounts of rentals with 5+ rooms compared to those with 1 room, but Mykonos does really stand apart from the other islands. In contrast, Corfu has the highest number of 1 room AirBnB rentals (3,197), while Tilos has the highest relative number of 1 room rentals (76%). Kea has the least absolute amount of 1 room rentals (7), while relatively Kea has the lowest amount (17%). It is also interesting to see that Kimolos, Sikinos, Astypalaia, Kasos, Kastellorizo, Nisyros, Tilos and Ithaki do not even have any AirBnB rentals with 5+ rooms.

Santorini has by far the highest number of AirBnB rentals per km², namely 75, followed closely by Mykonos with 54 AirBnB rentals per km². Other notable islands are Paxos (28), Paros (18), Corfu (16), Skiathos (15), Spetses (12), Syros (11), Zakynthos (10), Lefkada (9), and Skopelos (9). Kasos has the lowest number of AirBnB rentals per km² (0.23). When looking at the amount of AirBnB rentals per capita, Mykonos has the highest amount (0.43). Other islands that jump out in this statistic are Santorini (0.37), Paxos (0.35), Serifos (0.33), Kea (0.29), Paros (0.25), Sifnos (0.23), Skopelos (0.21), Milos (0.21), and Kithnos (0.21), while Salamis has the lowest number of AirBnB rentals per capita (0.003).

The map in Figure 1 shows the amount of AirBnB rentals on the Greek islands per island group. There are 11 islands that have more than 1000 AirBnB rentals, 11 islands that have between 500 and 1000 AirBnB rentals, 23 islands that have between 100 and 500 AirBnB rentals, and only 4 islands that have less than 100 AirBnB rentals. Kasos has the lowest number of active and total AirBnB rentals (13 and 16, respectively), while Corfu has the highest number of active and total AirBnB rentals (9,219 and 10,026, respectively).

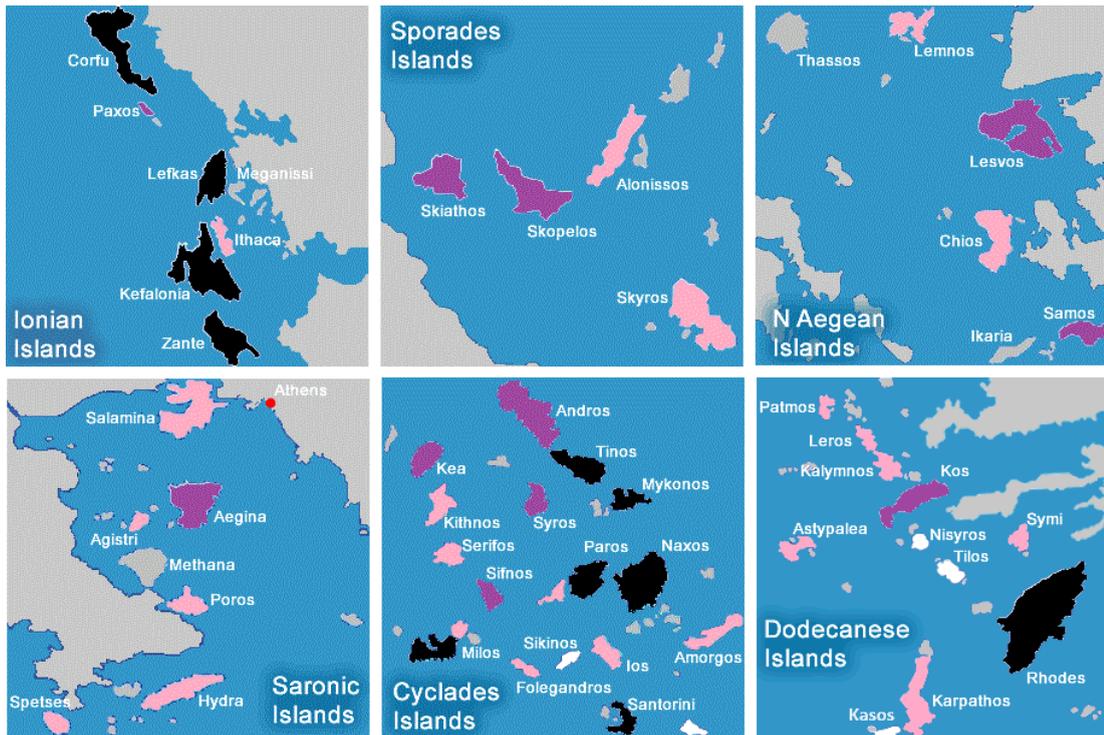


Fig. 1. Map of the Greek islands with colors representing the amount of AirBnB rentals. White: <100; Pink: 100-500; Purple: 500-1000; Black: >1000 (source: Mavromatis (2023), edited by researcher to reflect AirBnB rental data).

A correlation matrix was produced for the AirBnB rental data variables, shown in Table 3. This table shows if there are any correlations between these variables, which could help understand the AirBnB rental situation on the Greek islands better. There is a correlation between active and total rentals, meaning that if the amount of active rentals increases, the amount of total rentals also increases, and vice versa. There is also a direct correlation between the amount of active and total AirBnB rentals and the amount of 1 room rentals, while this correlation is less strong for AirBnB rentals with 5+ rooms. There is also a strong correlation between the amount of active and total rentals with the absolute rental growth from Q2 2022 to Q2 2023. It also seems that the average daily rate is correlated with the revenues across the whole year and the revenue in August, as well as a strong correlation between the revenues across the whole year and the revenue in August. There does not seem to be a strong correlation between any other AirBnB rental data variables.

Table 1. AirBnB rental data.

| | Island | Active rentals | Total rentals | Average daily rate | Occupancy rate | Occupancy rate Aug | Rental growth Q2 2022-2023 | | Rental size: 1 room | | Rental size: 5+ rooms | | Revenue | Revenue Aug | Total rentals per area | Total rentals per capita |
|---------------------|--------------------|----------------|---------------|--------------------|----------------|--------------------|----------------------------|--------------|---------------------|--------------|-----------------------|--------------|---------|-------------|------------------------|--------------------------|
| | | | | [Euros] | [%] | [%] | Absolute | Relative [%] | Absolute | Relative [%] | Absolute | Relative [%] | [Euros] | [Euros] | [/km2] | |
| Argo-Saronic | Aegina | 579 | 626 | 109 | 50 | 88 | -24 | -3.7 | 176 | 34 | 41 | 8 | 1,200 | 2,100 | 7.16 | 0.05 |
| | Agistri | 106 | 108 | 73 | 55 | 94 | 10 | 10.2 | 45 | 66 | 1 | 1 | 792 | 1,900 | 8.06 | 0.10 |
| | Hydra | 361 | 381 | 177 | 68 | 100 | 21 | 5.8 | 120 | 37 | 4 | 1 | 2,400 | 3,800 | 5.92 | 0.18 |
| | Poros | 330 | 353 | 79 | 46 | 90 | 29 | 9.0 | 130 | 43 | 7 | 2 | 786 | 1,600 | 7.12 | 0.11 |
| | Salamis | 110 | 127 | 85 | 37 | 80 | 23 | 22.1 | 41 | 41 | 5 | 5 | 746 | 1,400 | 1.32 | 0.003 |
| | Spetse | 298 | 332 | 192 | 40 | 83 | 13 | 4.1 | 54 | 20 | 38 | 14 | 1,600 | 2,700 | 12.25 | 0.09 |
| Cyclades | Amorgos | 296 | 324 | 93 | 68 | 96 | 5 | 1.6 | 149 | 61 | 3 | 1 | 1,200 | 2,700 | 2.57 | 0.17 |
| | Anafi | 51 | 56 | 97 | 65 | 100 | 9 | 19.1 | 32 | 67 | 1 | 2 | 887 | 2,400 | 1.39 | 0.19 |
| | Andros | 903 | 970 | 127 | 52 | 89 | 39 | 4.2 | 322 | 38 | 46 | 5 | 1,400 | 2,400 | 2.55 | 0.11 |
| | Antiparos | 223 | 255 | 294 | 54 | 90 | 26 | 11.4 | 38 | 18 | 23 | 11 | 3,000 | 6,000 | 5.64 | 0.20 |
| | Folegandros | 115 | 121 | 114 | 67 | 96 | -2 | -1.6 | 51 | 51 | 1 | 1 | 1,500 | 3,300 | 3.76 | 0.17 |
| | Ios | 406 | 434 | 169 | 70 | - | 42 | 10.7 | 130 | 49 | 16 | 6 | 2,200 | 3,800 | 4.02 | 0.19 |
| | Kea | 633 | 680 | 237 | 52 | 87 | 7 | 1.0 | 103 | 17 | 85 | 14 | 2,400 | | 5.15 | 0.29 |

| | | | | | | | | | | | | | | | | |
|-------------------|---------------------|-------|-------|-----|----|-----|-----|-------|-------|----|-------|-----|-------|-------|-------|------|
| | Kimolos | 129 | 132 | 101 | 63 | 100 | 20 | 17.9 | 72 | 66 | 0 | 0 | 1,300 | 2,900 | 2.48 | 0.16 |
| | Kythnos | 316 | 335 | 130 | 52 | 94 | 61 | 22.3 | 150 | 51 | 4 | 1 | 1,400 | 3,200 | 3.37 | 0.21 |
| | Milos | 1,034 | 1,117 | 142 | 78 | 97 | 88 | 8.6 | 536 | 60 | 2 | 0.2 | 2,300 | 4,900 | 7.40 | 0.21 |
| | Mykonos | 4,336 | 4,641 | 407 | 67 | 87 | 201 | 4.5 | 1,126 | 29 | 1,067 | 28 | 5,500 | 9,800 | 54.28 | 0.43 |
| | Naxos | 3,086 | 3,338 | 135 | 67 | 87 | 324 | 10.7 | 1,169 | 46 | 88 | 3 | 1,700 | 3,500 | 7.77 | 0.16 |
| | Paros | 3,385 | 3,657 | 180 | 68 | 92 | 336 | 10.1 | 998 | 32 | 233 | 8 | 2,300 | 4,300 | 18.75 | 0.25 |
| | Santorini | 5,254 | 5,736 | 248 | 80 | 95 | 454 | 8.6 | 2,089 | 51 | 125 | 3 | 4,400 | 7,100 | 75.28 | 0.37 |
| | Serifos | 395 | 411 | 147 | 58 | 94 | 41 | 11.1 | 156 | 41 | 14 | 4 | 1,700 | 3,600 | 5.47 | 0.33 |
| | Sifnos | 611 | 642 | 145 | 63 | 90 | 75 | 13.2 | 195 | 36 | 11 | 2 | 1,700 | 3,700 | 8.69 | 0.23 |
| | Sikinos | 24 | 27 | 93 | 55 | | 3 | 12.5 | 11 | 46 | 0 | 0 | 751 | 2,400 | 0.64 | 0.11 |
| | Syros | 868 | 965 | 101 | 50 | 87 | -1 | -0.1 | 361 | 48 | 39 | 5 | 1,100 | 2,300 | 11.54 | 0.05 |
| | Tinos | 1,401 | 1,487 | 123 | 48 | 91 | 134 | 9.9 | 547 | 42 | 41 | 3 | 1,300 | 2,800 | 7.66 | 0.17 |
| Dodecanese | Astypalaia | 208 | 222 | 115 | 50 | 84 | 5 | 2.3 | 103 | 53 | 0 | 0 | 1,300 | 3,100 | 2.30 | 0.16 |
| | Kalymnos | 406 | 442 | 75 | 57 | 86 | 35 | 9.0 | 175 | 45 | 9 | 2 | 799 | 1,200 | 4.02 | 0.02 |
| | Karpathos | 142 | 147 | 89 | 48 | 73 | -36 | -19.7 | 80 | 58 | 1 | 1 | 942 | 1,600 | 0.49 | 0.02 |
| | Kasos | 13 | 16 | 55 | 45 | | -6 | -27.3 | 7 | 70 | 0 | 0 | 615 | 1,200 | 0.23 | 0.01 |
| | Kastellorizo | 41 | 44 | 102 | 42 | 87 | 12 | 37.5 | 17 | 43 | 0 | 0 | 1,200 | | 3.67 | 0.08 |
| | Kos | 951 | 1,028 | 96 | 68 | 97 | 234 | 29.5 | 423 | 49 | 13 | 1 | 1,200 | 2,000 | 3.54 | 0.03 |

| | | | | | | | | | | | | | | | | |
|---------------------|------------------|------------------|--------|-----|-----|-----|-----|------|-------|-----|-----|-----|-------|-------|-------|------|
| | Leros | 186 | 202 | 91 | 37 | 74 | 65 | 47.4 | 78 | 46 | 7 | 4 | 690 | 1,500 | 2.72 | 0.03 |
| | Nisyros | 76 | 78 | 95 | 40 | 86 | 8 | 11.4 | 32 | 42 | 0 | 0 | 816 | 2,000 | 1.56 | 0.07 |
| | Patmos | 327 | 348 | 171 | 44 | 84 | 15 | 4.5 | 130 | 43 | 7 | 2 | 1,400 | 3,300 | 7.73 | 0.11 |
| | Rhodes | 5,224 | 5,685 | 133 | 70 | 90 | 521 | 10.1 | 1,614 | 34 | 239 | 5 | 1,600 | 2,500 | 4.06 | 0.05 |
| | Symi | 248 | 260 | 104 | 66 | 93 | 16 | 6.6 | 123 | 54 | 4 | 2 | 1,300 | 2,500 | 3.95 | 0.10 |
| | Tilos | 78 | 78 | 72 | 56 | - | 29 | 59.2 | 56 | 76 | 0 | 0 | 866 | 1,800 | 1.21 | 0.10 |
| North Aegean | Chios | 397 | 438 | 65 | 43 | 81 | 49 | 12.6 | 168 | 46 | 12 | 3 | 562 | 1,100 | 0.52 | 0.01 |
| | Lesvos | 660 | 716 | 61 | 45 | 67 | -21 | -2.8 | 254 | 45 | 7 | 1 | 606 | 949 | 0.44 | 0.01 |
| | Limnos | 384 | 410 | 82 | 50 | 94 | 55 | 15.5 | 185 | 52 | 1 | 0.3 | 748 | 1,800 | 0.86 | 0.02 |
| | Samos | 565 | 603 | 78 | 45 | 81 | 40 | 7.1 | 275 | 53 | 8 | 2 | 740 | 1,200 | 1.26 | 0.02 |
| | Sporades | Alonnisos | 297 | 310 | 109 | 60 | 90 | 9 | 3.0 | 122 | 47 | 8 | 3 | 1,400 | 2,400 | 4.84 |
| | Skiathos | 718 | 769 | 148 | 71 | 100 | -3 | -0.4 | 224 | 35 | 43 | 7 | 2,000 | 3,200 | 15.38 | 0.13 |
| | Skopelos | 893 | 949 | 111 | 67 | 94 | 11 | 1.2 | 318 | 39 | 9 | 1 | 1,400 | 2,500 | 9.86 | 0.21 |
| | Skyros | 209 | 231 | 95 | 42 | 90 | 7 | 3.1 | 103 | 50 | 6 | 3 | 807 | 1,800 | 1.11 | 0.08 |
| Ionian Sea | Kefalonia | 3,633 | 3,969 | 137 | 70 | 95 | 41 | 0.2 | 1,081 | 31 | 94 | 3 | 1,700 | 2,800 | 5.08 | 0.11 |
| | Corfu | 9,219 | 10,026 | 106 | 68 | 95 | 597 | 6.3 | 3,197 | 37 | 425 | 5 | 1,400 | 2,500 | 16.91 | 0.10 |
| | Ithaki | 198 | 221 | 124 | 52 | 97 | 23 | 11.6 | 74 | 39 | 0 | 0 | 1,300 | 3,100 | 2.30 | 0.08 |

| | | | | | | | | | | | | | | | | |
|--|------------------|-------|-------|-----|----|----|-----|------|-------|----|-----|---|-------|-------|-------|------|
| | Kythira | 377 | 405 | 93 | 45 | 92 | 61 | 17.7 | 196 | 55 | 9 | 3 | 866 | 2,200 | 1.45 | 0.11 |
| | Lefkada | 2,678 | 2,951 | 151 | 61 | 90 | 269 | 10.0 | 819 | 33 | 74 | 3 | 1,700 | 3,000 | 9.74 | 0.13 |
| | Paxos | 801 | 862 | 132 | 73 | 97 | 14 | 1.7 | 308 | 40 | 15 | 2 | 1,800 | 3,500 | 28.64 | 0.35 |
| | Zakynthos | 4,035 | 4,385 | 141 | 71 | 90 | 149 | 3.5 | 1,198 | 33 | 174 | 5 | 1,900 | 3,100 | 10.80 | 0.11 |

Table 2. Important values of the AirBnB rental data.

| | Active rentals | Total rentals | Average daily rate | Occupancy rate | Occupancy rate Aug | Rental growth Q2 2022-2023 | | Rental size: 1 room | | Rental size: 5+ rooms | | Revenue | Revenue Aug | Total rentals per area | Total rentals per capita |
|----------------|----------------|---------------|--------------------|----------------|--------------------|----------------------------|--------------|---------------------|--------------|-----------------------|--------------|---------|-------------|------------------------|--------------------------|
| | | | [Euros] | [%] | [%] | Absolute | Relative [%] | Absolute | Relative [%] | Absolute | Relative [%] | [Euros] | [Euros] | [/km2] | |
| Lowest | 13 | 16 | 55 | 37 | 67 | -36 | -27.3 | 7 | 17 | 0 | 0 | 562 | 949 | 0.23 | 0.003 |
| Average | 1,120 | 1,213 | 127 | 57 | 90 | 79 | 9.3 | 388 | 45 | 59 | 4 | 1,485 | 2,849 | 7.98 | 0.13 |
| Median | 395 | 411 | 111 | 56 | 90 | 26 | 8.8 | 156 | 45 | 9 | 2 | 1,300 | 2,500 | 4.02 | 0.11 |
| Highest | 9,219 | 10,026 | 407 | 80 | 100 | 597 | 59.2 | 3,197 | 76 | 1,067 | 28 | 5,500 | 9,800 | 75.28 | 0.43 |

Table 3. Correlation matrix of the AirBnB rental data variables.

| | Active rentals | Total rentals | Average daily rate | Occupancy rate | Occupancy rate Aug | Rental growth Q2 2022-2023 | Relative growth | Absolute rental size: 1 room | Relative rental size: 1 room | Absolute rental size: 5+ rooms | Relative rental size: 5+ rooms | Revenue | Revenue Aug | Total rentals per area | Total rentals per capita |
|------------------------------|----------------|---------------|--------------------|----------------|--------------------|----------------------------|-----------------|------------------------------|------------------------------|--------------------------------|--------------------------------|---------|-------------|------------------------|--------------------------|
| Active rentals | 1 | 1 | 0.13 | 0.32 | 0.06 | 0.96 | -0.08 | 1 | -0.25 | 0.89 | 0.24 | 0.2 | 0.11 | 0.19 | 0.00 |
| Total rentals | 1 | 1 | 0.13 | 0.32 | 0.06 | 0.96 | -0.08 | 1 | -0.25 | 0.89 | 0.24 | 0.2 | 0.11 | 0.19 | 0.00 |
| Average daily rate | 0.13 | 0.13 | 1 | 0.33 | 0.15 | 0.13 | -0.08 | 0.11 | -0.53 | 0.39 | 0.76 | 0.94 | 0.94 | 0.69 | 0.70 |
| Occupancy rate | 0.32 | 0.32 | 0.33 | 1 | 0.66 | 0.35 | -0.18 | 0.33 | -0.01 | 0.26 | 0.04 | 0.55 | 0.51 | 0.45 | 0.55 |
| Occupancy rate Aug | 0.06 | 0.06 | 0.15 | 0.66 | 1 | 0.09 | 0.07 | 0.07 | 0.11 | 0 | -0.13 | 0.26 | 0.31 | 0.17 | 0.45 |
| Rental growth Q2 2022-2023 | 0.96 | 0.96 | 0.13 | 0.35 | 0.09 | 1 | 0.06 | 0.97 | -0.22 | 0.82 | 0.2 | 0.21 | 0.13 | 0.22 | 0.01 |
| Relative growth | -0.08 | -0.08 | -0.08 | -0.18 | 0.07 | 0.06 | 1 | -0.07 | 0.12 | -0.09 | -0.08 | -0.13 | -0.07 | -0.11 | -0.06 |
| Absolute rental size: 1 room | 1 | 1 | 0.11 | 0.33 | 0.07 | 0.97 | -0.07 | 1 | -0.21 | 0.87 | 0.2 | 0.19 | 0.1 | 0.2 | -0.01 |

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|
| Relative rental size: 1 room | -0.25 | -0.25 | -0.53 | -0.01 | 0.11 | -0.22 | 0.12 | -0.21 | 1 | -0.3 | -0.59 | -0.38 | -0.29 | -0.2 | -0.11 |
| Absolute rental size: 5+ rooms | 0.89 | 0.89 | 0.39 | 0.26 | 0 | 0.82 | -0.09 | 0.87 | -0.3 | 1 | 0.57 | 0.41 | 0.34 | 0.31 | 0.16 |
| Relative rental size: 5+ rooms | 0.24 | 0.24 | 0.76 | 0.04 | -0.13 | 0.2 | -0.08 | 0.2 | -0.59 | 0.57 | 1 | 0.65 | 0.6 | 0.48 | 0.34 |
| Revenue | 0.2 | 0.2 | 0.94 | 0.55 | 0.26 | 0.21 | -0.13 | 0.19 | -0.38 | 0.41 | 0.65 | 1 | 0.97 | 0.82 | 0.77 |
| Revenue Aug | 0.11 | 0.11 | 0.94 | 0.51 | 0.31 | 0.13 | -0.07 | 0.1 | -0.29 | 0.34 | 0.6 | 0.97 | 1 | 0.76 | 0.83 |
| Total rentals per area | 0.19 | 0.19 | 0.69 | 0.45 | 0.17 | 0.22 | -0.11 | 0.2 | -0.2 | 0.31 | 0.48 | 0.82 | 0.76 | 1 | 0.68 |
| Total rentals per capita | 0 | 0 | 0.7 | 0.55 | 0.45 | 0.01 | -0.06 | -0.01 | -0.11 | 0.16 | 0.34 | 0.77 | 0.83 | 0.68 | 1 |

4.2 Quantitative analysis

Using the data from Table 1 and the data regarding the hotel beds, which can be found in Appendix C, the following plots comparing the amount of AirBnB rentals and the amount of hotel beds present on the Greek islands were made.

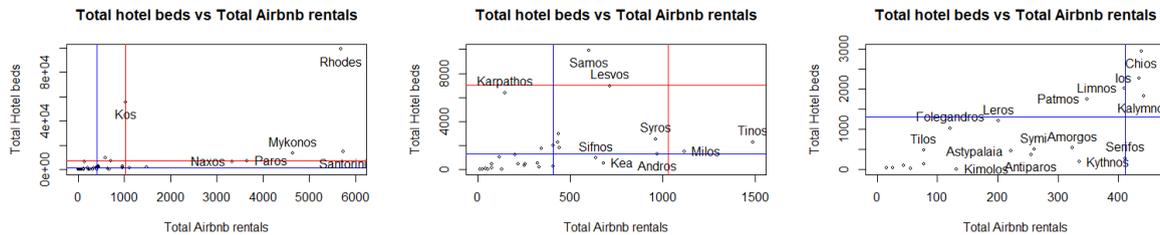


Figure 1. Scatter plots of the amount of AirBnB rentals compared to the amount of hotel beds. Red lines represent the average amount of AirBnB rentals and hotel beds, blue lines represent the median.

When including all the Greek islands in these plots, some clear outliers can be spotted, as seen in Figure 1. Rhodes, Mykonos, Santorini and Paros have more AirBnB rentals and hotel beds than the average and median amounts, while Kos and Samos have more than the average and median amounts of AirBnB rentals, but less hotel beds than the average amount. Naxos, Tinos and Milos have less than the average amount of AirBnB rentals, but a higher than average and median amount of hotel beds. Lesvos, Syros, Andros, Chios, Ios and Kalymnos have more AirBnB rentals and hotel beds than the median amounts. Sifnos, Kea and Serifos have a higher than median amount of AirBnB rentals but a lower than median amount of hotel beds, while Karpathos, Limnos and Patmos have a lower than median amount of AirBnB rentals but a higher than median amount of hotel beds. All the other islands have less AirBnB rentals and hotel beds than the average and median amounts.

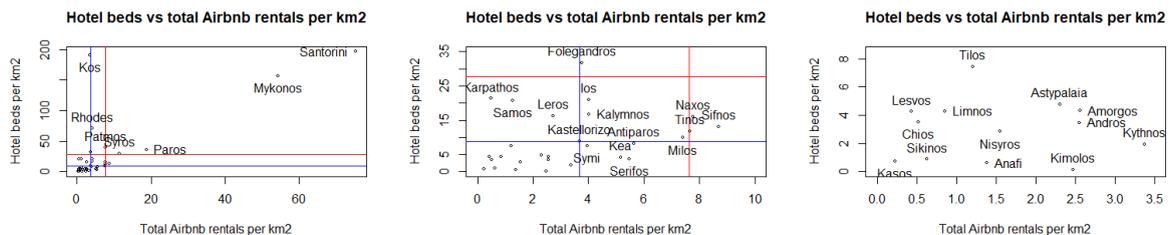


Figure 2. Scatter plots of the amount of AirBnB rentals per km2 compared to the amount of hotel beds per km2. Red lines represent the average amount of AirBnB rentals and hotel beds, blue lines represent the median.

In Figure 2, the amount of AirBnB rentals per km2 are compared to the amount of hotel beds per km2. Santorini, Mykonos, Paros and Syros are the outliers here, with higher than average and median amount of AirBnB rentals and hotel beds per km2. Sifnos, Naxos and Tinos have more than the average and median amount of AirBnB rentals per km2, but have less than the average amount of hotel beds per km2. Rhodes, Patmos and Folegandros have less than the average amount of AirBnB rentals per km2, but more than the median amount of AirBnB rentals and hotel beds per km2, while Kos has less than the average and median amount of AirBnB rentals per km2, but more than the average and median amount of hotel beds per km2. Ios, Kalymnos and Milos have more than the median

amount of AirBnB rentals and hotel beds per km². Kastellorizo, Symi, Antiparos, Kea and Serifos have more than the median amount of AirBnB rentals per km² but less than the median amount of hotel beds per km², while Karpathos, Samos and Leros have less than the median amount of AirBnB rentals but more than the median amount of hotel beds per km². All the other islands have less AirBnB rentals and hotel beds per km² than the average and median amounts.

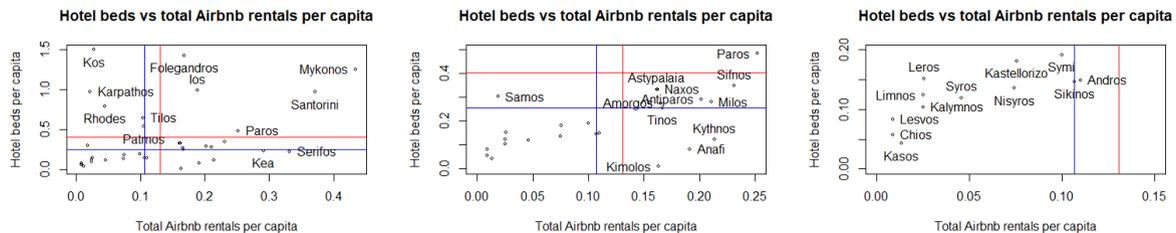


Figure 3. Scatter plots of the amount of AirBnB rentals per capita compared to the amount of hotel beds per capita. Red lines represent the average amount of AirBnB rentals and hotel beds, blue lines represent the median.

In Figure 3, the amount of AirBnB rentals and hotel beds were compared per capita. The islands with a higher than average and median amount of AirBnB rentals and hotel beds per capita are Mykonos, Santorini, Folegandros, Ios, and Paros. Kos, Karpathos, Rhodes, Patmos and Tilos have a higher than average and median amount of hotel beds per capita, but a lower than average and median amount of AirBnB rentals per capita. Astypalaia, Naxos, Sifnos, Milos, Antiparos and Amorgos have a higher than average and median amount of AirBnB rentals per capita, but a lower than average amount of hotel beds, while Samos has a lower than average and median amount of AirBnB rentals, but still more than the median amount of hotel beds. Andros has a higher than median amount of AirBnB rentals per capita, but a lower amount than the average amount of AirBnB rentals and the average and median amounts of hotel beds per capita. The rest of the islands have less than the average and median amounts of AirBnB rentals and hotel beds per capita.

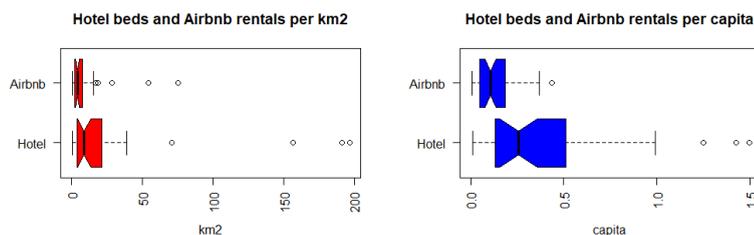


Figure 4. Box plots of the amount of AirBnB rentals and hotel beds per km² and per capita.

Figure 4 shows the box plots of the amount of AirBnB rentals and hotel beds per km² and per capita. Santorini, Mykonos, Paros, Corfu and Paxos are the outliers for the amount of AirBnB rentals per km², but it should be noted that there is no data available on the amount of hotel beds on Corfu and Paxos. Meanwhile, the outliers for the amount of hotel beds per km² are Mykonos, Santorini, Kos, and Rhodes. For both the amount of AirBnB rentals and hotel beds per km², the islands with a higher than median amount are more dispersed than those below the median amount.

When looking at the amount of AirBnB rentals and hotel beds per capita, the only outlier with regards to the amount of AirBnB rentals is Mykonos, while Folegandros, Mykonos and Kos are the outliers for the amount of hotel beds per capita. While there seem to be more islands that have both more than the median amount of AirBnB rentals and hotel beds per capita, this dispersion is more for the amount of hotel beds than for the amount of AirBnB rentals per capita.

While this could also be seen in Figures 2 and 3, Figure 4 shows more clearly that the median amount of hotel beds per km² and per capita is higher than the median amount of AirBnB rentals per km² and per capita. The interquartile range for the amount of hotel beds is also larger than for the amount of AirBnB rentals, as well as the distance between the whiskers.

4.3 Chosen representative island: Serifos

Following the results from the quantitative analysis, Serifos was chosen to visit to conduct interviews with relevant stakeholders. This is due to the fact that Serifos had the exact median number of AirBnB rentals from all the included Greek islands, namely 395 active AirBnB rentals. Due to its small size and population, it also seemed more accessible to come into contact with interview participants.

Serifos is part of the Cyclades and does not have an airport, thus is only accessible by ferry. It lies south of Athens and can be reached in about two hours by fast ferry or about four hours by normal ferry from Piraeus, Athens' harbor port. The island is connected to other Cyclades islands by ferry as well. Serifos has an area size of 75.2 km² and has a permanent population of 1,241 residents (ELSTAT, 2023).

4.4 Qualitative analysis

4.4.1 Timeline of AirBnB emergence on Serifos

To gain an insight into the presence of AirBnB rentals on Serifos, the participants were asked to provide a rough timeline of AirBnB rentals on the island. The answers varied, but most people mentioned that AirBnB rentals started emerging on Serifos between 5 and 10 years ago. Several people mentioned that there seemed to be a very sudden increase of the amount of AirBnB rentals since 2016, and it has only increased since then. The COVID-19 pandemic also caused an increase in the demand for AirBnB rentals:

“During covid, we have the people here that went from their countries and cities and they come here to rent houses for 1-2 months, AirBnB of course.”

It is also interesting to note that while rentals on the AirBnB platform have been present for around 10 years, the renting of private houses and rooms to let in Greece has existed for far longer. The mayor of Serifos provided a nice timeline for this:

“At first in the eighties, some people from France or from Italy, bought some houses here in the castle of Serifos, in Chora. These buildings were demolished, they were not houses, [...]. So they bought them at low prices and then they started to fix them and they had these houses just for their house when they traveled from France to Greece in order to have their vacation. [...] At the end of the nineties, at the millennium to be exact, [...] they started to

build more and more houses and then people came here and bought a lot more and more expensive also.”

The Greek university professor also attested to this, mentioning that rooms to let were already present 40 years ago, and more interestingly even, that the current discussion about AirBnB rentals is very similar to the discussion then about rooms to let:

“With rooms to let it was exactly the same case 40 years ago. We have a repetition of this, but with private houses.”

With the emergence of more AirBnB rentals on Serifos, there are bound to be positive and negative impacts on the island, the locals, and on visitors. First the positive impacts mentioned by the participants will be discussed, then the negative and more prevalent impacts will be analyzed.

4.4.2 Positive impacts

When asked about the participants' feelings and thoughts about AirBnB rentals on Serifos, income was an often-mentioned response. Of course those participants that were interviewed because they owned AirBnB rental properties gain income from these properties, around 20,000 to 30,000 euros per year. But even one of the real estate agents, who does not have an AirBnB rental, mentioned that people want to rent their house as an AirBnB because of the added income.

Furthermore, the mayor mentioned that one of the benefits of AirBnB rentals on Serifos is that old and abandoned buildings are being renovated so that they can be rented as AirBnB properties:

“We had some abandoned buildings or demolished buildings and when the AirBnB grows well, then what people do is they buy or they fix the houses and they rent it. The good thing is that they fix them, so the village gets better, gets more beautiful, traditional again, and it has a better image.”

The representative of the room owners' association mentioned something similar:

“Many people are renovating their house and especially in some villages that were ready to fall apart, so this is a good part of AirBnB.”

Moreover, an increase in the amount of AirBnB rentals also means that there are more tourists visiting Serifos. This also means more income for business and hospitality owners. The AirBnB property manager mentioned that Serifos has been a popular destination lately:

“It's been a very hotspot, Serifos, the last few years. In general, and for the Athenians also, because it's very close. And if the ferry companies didn't increase the prices of the tickets, it was a destination for the weekends also.”

However, while talking to the interview participants, it seemed like the AirBnB rentals on Serifos had more negative than positive impacts, especially for the island and community as a whole, compared to the positive impacts for individuals.

4.4.3 Negative impacts

One negative impact that came up in every single interview was the difficulty in finding long-term housing. Because people can receive an additional income from renting their properties as AirBnB rentals, many choose to offer their houses as short-term rentals instead of long-term rentals. One of the real estate agents only found a long-term rental house after 8 months of searching, and even then it is not with an indefinite contract:

“I have a contract that expires in December, but the owner of the house hasn’t told me something, but if he told me that ‘you should leave in two months’, I don’t know where I’m going to live because you don’t have choices.”

The mayor and the Greek university professor also mentioned who struggles a lot with finding longer term housing on the island, and that this is also tied to higher rental prices:

“And for example, there are doctors that can’t find houses, there are people who work for the cafes, for the restaurants, for the rooms to let, and they can’t find houses to stay in, and if they find, the price of the houses is too much, so they don’t want to come to work here.”

“[...] houses are not anymore available for other kinds of rentals, long-term rentals for people going to live there, mainly as doctors or in the education system or other civil servants, or those that don’t live in Serifos, it will be very very difficult for them to find, to rent a house, and prices are very, more higher than before.”

To make matters even worse, the houses that are still available for long-term renting are not always up to par either, as mentioned by the representative of the room owners’ association:

“[...] that as a result also has some problems for workers mainly in the summer, because taverns and bars and stuff like that, they need some houses for their employees and now it’s very hard to find and it’s getting too expensive to find a house, even a bad house. So it’s mostly bad houses that they’re renting for employees.”

A reason for the higher rental prices is that property owners compare the revenue for short-term AirBnB rentals with the revenue of long-term rentals, according to a real estate agent. They want to earn just as much from long-term renting as from short-term, which results in higher rental prices. The mayor also mentioned that the municipality tries to help those struggling to find long-term housing, but it is not enough and not a sustainable solution:

“We are trying to help people by giving them some money every month, the doctors or the employees of the municipality. We’re trying to give them something as help every month just to find something, or to be less difficult to find something. We’re trying to find some houses,

if I know someone who rents their house for the whole year, I try to find them and everyone who wants I give them his phone number and then they can do their work.”

Another negative impact that was mentioned several times during the interviews was that the landscape and built environment of Serifos is changing due to the building of new houses to rent out as AirBnB properties. Even now, Serifos' landscape already looks different than it did in the past:

“There used to be barely any houses, especially on the beaches. I don't know if you know this, but the most popular beach is Psili Ammos. When I was a kid, there was no houses, there was two tavernas and that was it, and now there's houses all over, and it's the same for nearly every other beach that we went to when I was a kid, there's just so much more, people have been building like crazy. [...] And I think the building has gotten even more insane in the past five years.”

“We have a lot of construction now, so you understand that every year it will be more and more.”

“I've been 20 years ago, but it's a totally different Serifos now. [...] Many, many more houses, buildings, developments.”

As a result of these negative impacts, participants mentioned that the government needs to introduce measures to curb the impacts AirBnB rental has on Serifos.

4.4.4 Need for governmental regulations

Many different examples and suggestions for what kind of regulations could be implemented to reduce the negative impacts of AirBnB rentals or contain the amount of AirBnB rentals were discussed. Multiple people mentioned that one such measure could be to have a maximum amount of AirBnB rentals on Serifos:

“I think the government has to find at first how many there are in every place, and then they have to make a law that will say how many Serifos can have and if it's okay for the whole island. For example 200, ok 200 AirBnBs the most and then we stop, perhaps it's a solution.”

“I think that there should be some rules about how many houses can be rented, like this way on an island. Because if 100 people live here for the winter and the AirBnB is 200 and no long-term rental is available, this is a problem.”

One way this amount could be determined is by looking at the size of Serifos' population, as suggested by a real estate agent, because this means that there will still be AirBnB rentals allowed, but also ensures enough housing for those that (want to) live on Serifos:

“[...] it should be equalized to the people that live on an island, that want to live all over the year, how many people are getting there in the summer, and there must be some balance.”

Another measure that was suggested was to put a maximum amount of days that an AirBnB property can be available for rental, but the Greek university professor states that that would be difficult to control:

“There is a discussion nowadays about the number of days that the accommodation can be used for someone to rent. I don’t think that’s going to be effective, as in Serifos we have no big companies that create these kinds of rooms, I don’t think that the regulation that some people propose, that means when you have more than 3 houses to become a professional accommodation, is going to change a lot of things.”

The Greek university professor instead suggested that those with more than 1 short-term rental property should be considered as professional renting, and thus fall under existing regulations for professional rental properties:

“For me, somebody that has more than, I can say, 1 house to rent, has to become professional renting and not private renting.”

Due to the similar discussion about rooms to let 40 years ago, there have actually been regulations for professional house rentals in the Greek system. Yet, AirBnB rentals do not fall under these regulations, because they are considered private renters. This has been leading to a disbalance in the tourism accommodation market, according to the representative of the room owners’ association:

“[...] for most of the owners they would consider the AirBnB action a bit hostile to our activity. They’re doing the same jobs as we do, but [...] they don’t have to do what we are obligated to do. [...] They have some obligations that, if you own an AirBnB you are not obliged to do.”

Not only are there different obligations for rooms to let compared to AirBnB rentals, but also the prices for these different types of tourist accommodations are not balanced:

“So the big discussion now with AirBnB is that they do not have the same charges as the other kinds of professional tourism accommodation, and there is a non-equal competition.”

Therefore, a measure that could be taken is to implement more regulations for AirBnB rentals, if they are not considered professional rentals, and that could also maybe limit the negative impacts that AirBnB rentals have on Serifos:

“I want more rules for them so I can feel more equal as a competition of the work. I would like to have more terms for them so that we can be equal in the market.”

If no measures are taken and no regulations are implemented to reduce or contain the negative impacts of AirBnB rentals on Serifos, the interview participants are pessimistic and fearful of what the future could bring.

4.4.5 Fears for the future

All the interviewees agreed that in the coming future, the amount of AirBnB rentals on Serifos will increase, if there are no regulations implemented regarding this. Even the mayor agrees with this statement and is fearful about it:

“I think it will be worse every year that passes. I mean, next year we’ll have more and more and more and more, so it gets worse.”

This increase in the amount of AirBnB rentals will most likely be because people will build new houses for the purpose of renting these properties to tourists, according to an AirBnB rental owner:

“Without regulations, it’ll just, I mean, there’s people building all the time, and I’m sure they’re building with the expectation that, you know, they build a beautiful building that they’re going to be able to rent that on Airbnb for at least a few months out of the year.”

However, there could also be more houses built because Serifos will become a more popular tourist destination and certain people would like their own house there for their vacations. Since these people will only use these houses for a limited amount of time, they might want to rent it out when they are not there:

“At least for the next two or three years, it will rise up for sure, because I get the feeling that even new houses that they are building now I think people are buying and eventually they will rent it, because most of the people are, you know, they will come for a vacation 10 days, 2 weeks, 3 at most, and eventually they will work their houses as Airbnb, so I would think, I think, the upcoming years it will just rise up.”

Another reason that the amount of AirBnB rentals could increase is that more people rent out their properties. One of the people I interviewed currently does not rent out their house on AirBnB, but is considering this because they see how neighbors and others around them profit from doing that. Probably not everyone that has a vacation house on Serifos currently rents it out, but these people could be persuaded to do that because they see the income that others who rent their houses as AirBnB rentals accumulate:

“[...] probably a lot of Greeks and other people that have owned properties there for a long time looking to make their money off of it as well.”

Moreover, the Greek university professor thinks that AirBnB rentals are popular because they offer a different type of space compared to traditional tourist accommodations:

“I think they [AirBnB rentals] are going to go up, because they offer something different from hotels and rooms to let. What is this, it is more space. [...] When you’re renting this kind of accommodation, I’m not speaking only about big villas, big houses, but a rather small house, you have your kitchen, you have a place to live. In rooms to let and hotels, the space in the room is too tiny.”

Even though rooms to let sometimes also have a kitchen available, AirBnB rentals still offer more for their value, which is why they might be more popular:

"[...] even in rooms to let they have a very small kitchen, very small refrigerator, but in an Airbnb it is a good kitchen, a good refrigerator. There is, as I said, space to live as normally. [...] for me the most important thing is that you have a place to live normally, and not to be all the time outside of the room."

Tied to an increase in the amount of AirBnB rentals, they also think that Serifos will become a more popular tourism destination in general, whether tourists choose to stay in AirBnB rentals or in other tourist accommodations:

"I think it will probably be very very popular, I think it's one of the places that's going to continue to grow."

One reason mentioned by several people for why Serifos is becoming more popular for tourists, is because Serifos is authentic and has a specific atmosphere:

"Serifos will have a lot of tourists, because it has, until now, kept the authenticity that it has as an island."

However, an increase in the amount of AirBnB rentals and the amount of tourists can result in a loss of authenticity of Serifos, which is precisely why Serifos is currently a popular tourism destination:

"[...] every year in Serifos is becoming more and more popular, more tourists, from more countries that we didn't have. In ten years I think that Serifos will be another island."

Several interview participants are wary of what a loss of authenticity would mean for Serifos. There are already other Greek islands where this has happened, and they do not want that to happen to Serifos as well:

"I hope it's not going to become like Mykonos, really that's not the case, but it might."

"If the island keeps its own character it will be nice, otherwise we will be like the other very fancy islands like Paros, Mykonos."

This fear of Serifos turning into other popular Greek islands is not only due to a potential loss of authenticity, but also because of the change in landscape and built environment:

"If there's no limits in construction of houses outside of the settlements, we're going to have this urban sprawl everywhere. If you have an idea how Paros is now, I'm not speaking about Mykonos and about Santorini, but Paros, Naxos and other islands where tourism is more developed than Serifos, and I think this kind of evolution we're going to have in Serifos also."

However, one interview participant thinks that the presence or amount of AirBnB rentals does not affect Serifos, but that it is rather the kind of AirBnB rentals that attract different kinds of tourists and could cause a loss of authenticity:

“I don’t think it matters whether AirBnB exists or not on the island, but it depends on the types of AirBnB that exist.”

If different types of AirBnB rentals are offered on Serifos, this might also attract different kinds of tourists, and not all the interviewees were happy about that:

“[...] when we build Mykonos-like or Santorini-like properties, then we start attracting Mykonos-like people and those are not my people.”

However, some participants see this increase of tourism and potential change in tourist type as a welcome change, because then Serifos could attract a broader public:

“[...] if we change a little bit, [...] let’s say, bigger hotels or luxury hotels will rise up in Serifos, it will be different in the way that for the people that we attract.”

Because Serifos is not currently an island with a lot of services, this will need to change before more luxurious tourists are persuaded to go to Serifos instead of other, more luxurious Greek islands. At the same time Serifos will have to maintain a certain level of authenticity compared to other Greek islands, so that it stands out:

“So maybe we will need to improve our services, even the food, the restaurants, and if we want to target high level tourism, also we have to offer some services. [...] It’s a challenge for the island to improve, but at the same time to keep its own authenticity.”

The interviews provided interesting findings and a combination of similar and different thoughts and opinions about the state of AirBnB rentals on Serifos and what should be done to improve the situation. The next section will discuss the researcher’s observations on the situation of AirBnB rentals on Serifos.

4.5 Researcher observations

The researcher visited Serifos from 16 until 24 October 2023 to conduct interviews with stakeholders. While there, the following observations were made that were relevant to this study:

- It was very quiet on the island; there were barely any tourists. On the first night, a restaurant waiter mentioned that most of the tourists that were on Serifos that night would leave again tomorrow, because they only stopped by while on their sailing trip.
- Traveling around Serifos, many new buildings were for sale, advertised as summer houses. There was also a lot of construction of new houses and renovations of old houses being done.
- Both in Livadi, the harbor town, and in Chora, the main town, it seemed like most houses were for (tourist) rentals, because it did not look like people were living there. Window shutters were closed and there did not seem to be any movement.

- There were many signs of 'rooms to let' and 'studios for rent', and many houses that were named '... apartment(s)'.
- Multiple shops and restaurants were already closed, because the summer season was finished. At least one other restaurant also closed during the visiting period due to the summer season having ended.
- It seemed that multiple hotels, apartments and other accommodations for tourists were also closed (or not being used) during the visiting period. At Livadakia beach specifically, several resorts looked closed down, as the palapas were put away and window shutters were closed.
- A cleaning lady and restaurant server, who were not interviewed, mentioned that they are not local to Serifos. They only live and work on Serifos for the summer season, amounting to being on the island half of the year.
- Most buildings on Serifos are located in Livadi, Livadakia, Chora, and between these places. More to the north, east, and west of the island there are fewer buildings. While exploring the island and leaving behind this populated area, very few people were encountered, of whom all were driving on the road.

5. Discussion

To see how the insights from the interviews compare with AirBnB rental data, InsideAirBnB (n.d.) provided some useful variables. 94.3% of the AirBnB listings on Serifos are entire homes or apartments and 100% of the AirBnB listings are for short-term rental only. 60.3% of the listings are from AirBnB hosts with multiple listings, of which the hosts with the most amount of listings rent out 19, 12, and 10 AirBnB properties. The listings are booked for an average of 29 nights, so if a limit to the amount of days an AirBnB property can be rented, like some interview participants suggested, a limit of 60 days will not change much.

When looking at InsideAirBnB's (n.d.) data on the South Aegean region, these numbers are similar to those of only Serifos: 83.7% are entire homes/apartments, 99.6% are for short-term rental only, 73.9% are from AirBnB hosts with multiple listings, of which the host with the most listings has 336 listings, and the listings are booked for an average of 31 nights. Thus it would be plausible that the impacts that the stakeholders on Serifos mentioned, would also occur on the other Greek islands.

The researcher observations match well what those interviewed mentioned, about the constant construction in and outside the settlements, how many houses seem to be rented out as short-term properties, and that Serifos is a more popular tourism destination now than it was a few years ago. These observations and interviews also match what was seen in the data from AirDNA (n.d.), which showed an increase in the amount of AirBnB rentals from Q2 2022 to Q2 2023, that the occupancy rate for August (94%) is higher than the average occupancy rate on Serifos (58%), and thus that the revenue for August is also higher than for other months (3,600 vs 1,700 euros, respectively).

The impacts perceived by the interviewed stakeholders also match the impacts mentioned in previous research about AirBnB rentals. Similar to Zervas et al.'s (2017) results, traditional tourism accommodations are affected by the presence of AirBnB rentals. On Serifos this is the case due to charges that are mandatory for hotels and rooms to let, but not for AirBnB rentals. Wyman et al. (2020) found that property owners prefer short-term to long-term rental due to higher revenues from short-term rentals, thus short-term rentals are preferred. This was one of the most important negative impacts mentioned of AirBnB rentals

on Serifos, causing difficulty in finding long-term housing and also higher rental prices. This phenomenon was also researched by Yrigoy (2016). Although not exactly the same as the outcome of Roslmaier & Albarran's (2022) research, which showed that Icelandic residents withdrew from their local town center due to an increased amount of AirBnB rentals there, it could be seen as a similar phenomenon to what those interviewed are fearful of, which is a loss of authenticity of Serifos due to increased AirBnB rentals and tourism.

5.1 Limitations

Like with any research, there are certain limitations and constraints that could influence the results and outcomes of the research. Firstly, there is the issue of time. Only a limited amount of time and specific period of the year was available for visiting Serifos and conducting interviews. This meant that the researcher observations would have probably been different in the summer season compared to October, when the tourist high season already ended. Perhaps more and different kinds of stakeholders could have been interviewed, which could have provided a different view of the situation of AirBnB rentals on Serifos.

Secondly, there is the issue of scope. It was determined to focus only on one island for the interviews and qualitative research, as it was believed that Serifos could be taken as a good reference case for the other Greek islands as well. However, there could always be other impacts present on the other islands that are not present on Serifos, or that the impacts perceived on Serifos are not present on the other islands.

Lastly, housing and rental prices were not looked into during the quantitative part of this research. These issues came up during the interviews, specifically the difficulty in finding long-term housing and resulting higher rental prices. These phenomena could be researched, namely by looking how much rental prices have increased and how much housing shortage there is. The last housing census data currently available is from 2011, and since AirBnB rental only really started at most 10 years ago on Serifos, this data is outdated and did not present a representative image of the housing situation on Serifos, or on other Greek islands.

6. Conclusion

The purpose of this thesis research was to focus on the socio-economic impacts of AirBnB rentals on local communities of the Greek islands. To achieve that, a sequential mixed methods approach was used, where first a quantitative study was conducted and then, based on the results of this part, a qualitative study was performed to gain deeper insights. The quantitative study showed that the amount of AirBnB rentals increased from Q2 2022 to Q2 2023 and that the occupancy rates and corresponding revenues are exceptionally high in August. Moreover, the amount of AirBnB rentals on the Greek islands included in this research, in total as well as per km² and per capita, were visualized in scatter plots and on a map of the Greek islands, to show the spread of AirBnB rentals. Based on these results, Serifos was chosen as the case study to conduct interviews with different stakeholders, because Serifos has exactly the median amount of AirBnB rentals of all the Greek islands. 10 people were interviewed and provided insights into the emergence of AirBnB rentals on Serifos, positive and negative impacts of AirBnB rentals, and thoughts about what the future could bring. The positive impacts consisted of additional income for locals (and foreigners) that can rent their houses as AirBnB properties, as well as an

increase in tourism. The negative impacts were that there is now difficulty in finding long-term housing, rental prices have increased, and there is an unequal competition between AirBnB rentals and traditional tourism accommodations on Serifos. Moreover, the island landscape and built environment has changed as well due to new houses being built to rent out as AirBnB properties. Due to these negative impacts, the interview participants all think that there need to be regulations, limitations, and/or measures to reduce and contain the amount of AirBnB rentals and the impact of these rentals on Serifos. If not, they are fearful that Serifos will lose its authenticity and turn into e.g. Mykonos or Santorini, where there is overtourism and more luxury rentals.

With these quantitative and qualitative methods, the research question (**How do AirBnB rentals socio-economically impact the continuity of local life on the Greek islands?**) was answered. AirBnB rentals threaten the way of life on Serifos, and possibly the other Greek islands as well, due to the negative impacts mentioned. It seemed like those negative impacts outweighed the positive impacts, because the interview participants are fearful of the future if no measures are taken.

Further research on AirBnB rentals on the Greek islands could e.g. focus on what kind of specific regulations can be implemented to limit the negative impacts of AirBnB rentals, as well as a more economic focus on the increase in rental prices and the difficulties of finding long-term housing on the islands. It is important to research these topics, because it is important that tourist destinations such as the Greek islands retain their authenticity and local communities for generations to come.

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Appendix A: Population, area size, and airport availability of the Greek islands

Table 4. General information on the Greek islands.

| | Island | Population | Area size | Airport |
|---------------------|---------------------|----------------|--------------------|---------|
| | | 2021 Census | [km ²] | [Y/N] |
| Argo-Saronic | Aegina | 12,911 | 87.4 | N |
| | Agistri | 1,131 | 13.4 | N |
| | Hydra | 2,070 | 64 | N |
| | Poros | 3,261 | 49.6 | N |
| | Salamis | 37,220 | 96.2 | N |
| | Spetses | 3,748 | 27.1 | N |
| | Cyclades | Amorgos | 1,961 | 126.3 |
| Anafi | | 293 | 40.4 | N |
| Andros | | 8,826 | 380 | N |
| Antiparos | | 1,265 | 45.2 | N |
| Folegandros | | 719 | 32.2 | N |
| Ios | | 2,299 | 108 | N |
| Kea | | 2,335 | 132 | N |
| Kimolos | | 810 | 53.3 | N |
| Kythnos | | 1,568 | 99.4 | N |
| Milos | | 5,302 | 151 | Y |
| Mykonos | | 10,704 | 85.5 | Y |
| Naxos | | 20,578 | 429.8 | Y |
| Paros | | 14,520 | 195 | Y |
| Santorini | | 15,480 | 76.2 | Y |
| Serifos | | 1,241 | 75.2 | N |
| Sifnos | | 2,777 | 73.9 | N |
| Sikinos | | 253 | 42.5 | N |
| Syros | | 21,124 | 83.6 | Y |
| Tinos | | 8,934 | 194 | N |
| Dodecanese | Astypalaia | 1,376 | 96.4 | Y |
| | Kalymnos | 17,752 | 110 | Y |
| | Karpathos | 6,567 | 300 | Y |
| | Kasos | 1,223 | 69.5 | N |
| | Kastellorizo | 584 | 12 | Y |
| | Kos | 37,089 | 290.3 | Y |
| | Leros | 7,992 | 74.2 | Y |

| | | | | |
|---------------------|------------------|---------|-------|---|
| | Nisyros | 1,048 | 50.1 | N |
| | Patmos | 3,283 | 45 | Y |
| | Rhodes | 125,113 | 1,401 | Y |
| | Symi | 2,603 | 65.8 | N |
| | Tilos | 746 | 64.5 | N |
| North Aegean | Chios | 51,692 | 842.3 | Y |
| | Lesvos | 83,755 | 1,633 | Y |
| | Limnos | 16,411 | 477.6 | Y |
| | Samos | 32,642 | 477.4 | Y |
| Sporades | Alonnisos | 3,138 | 64.1 | N |
| | Skiathos | 5,802 | 50 | Y |
| | Skopelos | 4,518 | 96.2 | N |
| | Skyros | 3,052 | 209 | Y |
| Ionian Sea | Kefalonia | 36,064 | 781 | Y |
| | Corfu | 99,134 | 592.9 | Y |
| | Ithaki | 2,862 | 96.2 | N |
| | Kythira | 3,644 | 279.6 | Y |
| | Lefkada | 21,900 | 303 | N |
| | Paxos | 2,466 | 30.1 | Y |
| | Zakynthos | 41,180 | 406 | Y |

Appendix B: Interview guide

Interview questions:

1. Could you describe your role in the tourism and Airbnb sector?
2. How many years have you worked in this sector?
3. How much of your income would you say comes from the tourism or Airbnb sector?
4. How many people in your household or family currently work in the tourism and Airbnb sector?
5. Could you provide a rough timeline of the growth of Airbnb on Serifos? What would you say lead to this development?
6. How do you personally feel and think about the presence of Airbnb rentals on Serifos?
7. How does the presence of Airbnb rentals on Serifos affect you?
8. How do you see the future of Airbnb rentals on Serifos?
9. What do you think the tourism sector in Serifos will look like in 10-15 years?

If not mentioned in answers to the previous questions

10. What is your age?
11. What income class do you belong to?

Appendix C: Information sheet and consent form

Information Sheet for 'The socio-economic impacts of Airbnb rentals on the continuity of local life on Greek islands'

Dear participant,

Thank you for your interest in participating in this research. This letter explains what the research entails and how the research will be conducted. Please take time to read the following information carefully. If any information is not clear kindly ask questions using the contact details of the researcher provided at the end of this letter.

What is this study about?

This research will investigate the impact of Airbnb rentals on the continuity of local life on Greek islands. The research is divided into a quantitative and a qualitative part. The qualitative part, which consists of interviews, will focus specifically on Serifos as a case study. About 10 to 15 participants will be interviewed to get an in-depth perspective on the local impacts of Airbnb rentals on Serifos. The participants are all involved in the tourism and Airbnb industry on Serifos, whether they own Airbnb rentals on the island, are part of the tourism industry, or are involved in a different way regarding tourism on Serifos.

What does participation involve?

As a participant, this interview will take around 30 minutes of your time.

Do you have to participate?

Participation in the interview is completely voluntary. Participants can decide to withdraw from the research at any moment and can decide not to answer questions without consequences or providing reasons.

Are there any risks or benefits in participating?

There are no risks in participating in this research. There are also no direct benefits by participating in this research, but the research may contribute to further knowledge on the impacts of Airbnb rentals on local communities on islands and can be informative for future research on this topic.

How will information you provide be recorded, stored and protected?

The interviews will be recorded with a mobile device, and the data will be stored according to the GDPR (General Data Protection Regulation) rules of the University of Groningen. Only those involved in this research will be able to access interview records. These records will be destroyed once the research is finalized.

What will happen to the results of this study?

The results of this study will be used for a Master's thesis at the University of Groningen. This thesis could also be used in future research regarding the impact of Airbnb rentals.

Ethical approval

Those involved in this research will uphold themselves to the relevant ethical standards of the University of Groningen.

Informed consent form

As a participant, please sign the accompanying informed consent form. With the signing of the consent form, participants show their intent to participate in the research, while still being able to withdraw at any time.

Who should you contact for further information?

This research will be conducted by:

Alize Kock

a.r.kock@student.rug.nl

Informed consent form

Title study: The socio-economic impacts of Airbnb rentals on the continuity of local life on Greek islands

Name participant:

Assessment

- I have read the information sheet and was able to ask any additional question to the researcher.
- I understand I may ask questions about the study at any time.
- I understand I have the right to withdraw from the study at any time without giving a reason.
- I understand that at any time I can refuse to answer any question without any consequences.
- I understand that I will not benefit directly from participating in this research.

Confidentiality and Data Use

- I understand that none of my individual information will be disclosed to anyone outside the study team and my name will not be published.
- I understand that the information provided will be used only for this research and publications directly related to this research project.
- I understand that data (consent forms, recordings, interview transcripts) will be retained in correspondence with the university GDPR legislation.

**Having read and understood all the above, I agree to participate in the research study:
yes / no**

Date

Signature

To be filled in by the researcher

- I declare that I have thoroughly informed the research participant about the research study and answered any remaining questions to the best of my knowledge.
- I agree that this person participates in the research study.

Date

Signature

Appendix D: Hotel beds data

Table 5. Hotel beds data.

| | Island | Total hotel beds | Total nights spent in hotel | Average nights spent in hotel | Hotel beds per area | Hotel beds per capita |
|---------------------|---------------------|------------------|-----------------------------|-------------------------------|---------------------|-----------------------|
| | | 2019 | 2019 | | [/km ²] | |
| Argo-Saronic | Aegina | - | - | - | - | - |
| | Agistri | - | - | - | - | - |
| | Hydra | - | - | - | - | - |
| | Poros | - | - | - | - | - |
| | Salamis | - | - | - | - | - |
| | Spetses | - | - | - | - | - |
| Cyclades | Amorgos | 543 | 547,101 | 34.2 | 4.30 | 0.28 |
| | Anafi | 24 | 2,966 | 2.9 | 0.59 | 0.08 |
| | Andros | 1,319 | 97,963 | 3.3 | 3.47 | 0.15 |
| | Antiparos | 370 | 21,923 | 4.2 | 8.19 | 0.29 |
| | Folegandros | 1,025 | 80,552 | 3.2 | 31.83 | 1.43 |
| | Ios | 2,274 | 139,087 | 3.2 | 21.06 | 0.99 |
| | Kea | 544 | 13,394 | 2.7 | 4.12 | 0.23 |
| | Kimolos | 8 | 455 | 2.8 | 0.15 | 0.01 |
| | Kythnos | 193 | 16,371 | 2.7 | 1.94 | 0.12 |
| | Milos | 1,489 | 83,729 | 2.8 | 9.86 | 0.28 |
| | Mykonos | 13,394 | 2,071,512 | 3.4 | 156.65 | 1.25 |
| | Naxos | 6,876 | 541,821 | 34.2 | 16.00 | 0.33 |
| | Paros | 7,029 | 591,929 | 3.8 | 36.05 | 0.48 |
| | Santorini | 14,986 | 1,850,485 | 2.9 | 196.67 | 0.97 |
| | Serifos | 277 | 16,721 | 2.9 | 3.68 | 0.22 |
| | Sifnos | 967 | 54,860 | 2.8 | 13.09 | 0.35 |
| | Sikinos | 37 | 3,008 | 3.2 | 0.87 | 0.15 |
| Syros | 2,524 | 227,863 | 3.3 | 30.19 | 0.12 | |
| Tinos | 2,284 | 138,807 | 2.2 | 11.77 | 0.26 | |
| Dodecanese | Astypalaia | 459 | 14,625 | 3.9 | 4.76 | 0.33 |
| | Kalymnos | 1,836 | 123,514 | 4.4 | 16.69 | 0.10 |
| | Karpathos | 6,389 | 562,971 | 6.3 | 21.30 | 0.97 |
| | Kasos | 52 | 4,540 | 6.3 | 0.75 | 0.04 |
| | Kastellorizo | 106 | 16,064 | 6.3 | 8.83 | 0.18 |
| | Kos | 55,456 | 8,574,525 | 6.6 | 191.03 | 1.50 |

| | | | | | | |
|---------------------|------------------|--------|------------|-----|-------|------|
| | Leros | 1,211 | 90,827 | 4.3 | 16.32 | 0.15 |
| | Nisyros | 142 | 9,610 | 3.5 | 2.83 | 0.14 |
| | Patmos | 1,762 | 83,664 | 3.4 | 39.16 | 0.54 |
| | Rhodes | 99,031 | 14,996,951 | 6.3 | 70.69 | 0.79 |
| | Symi | 499 | 45,871 | 4.4 | 7.58 | 0.19 |
| | Tilos | 480 | 33,269 | 5.6 | 7.44 | 0.64 |
| North Aegean | | | | | | |
| | Chios | 2,956 | 184,395 | 3.1 | 3.51 | 0.06 |
| | Lesvos | 6,955 | 551,146 | 4.6 | 4.26 | 0.08 |
| | Limnos | 2,035 | 177,566 | 5.2 | 4.26 | 0.12 |
| | Samos | 9,905 | 1,045,599 | 6 | 20.75 | 0.30 |
| Sporades | | | | | | |
| | Alonnisos | - | - | - | - | - |
| | Skiathos | - | - | - | - | - |
| | Skopelos | - | - | - | - | - |
| | Skyros | - | - | - | - | - |
| Ionian Sea | | | | | | |
| | Kefalonia | - | - | - | - | - |
| | Corfu | - | - | - | - | - |
| | Ithaki | - | - | - | - | - |
| | Kythira | - | - | - | - | - |
| | Lefkada | - | - | - | - | - |
| | Paxos | - | - | - | - | - |
| | Zakynthos | - | - | - | - | - |

Table 6. Important values of the hotel beds data.

| | Total hotel beds | Total nights spent in hotel | Average nights spent in hotel | Hotel beds per area | Hotel beds per capita |
|----------------|-------------------------|------------------------------------|--------------------------------------|----------------------------|------------------------------|
| | 2019 | 2019 | | [/km ²] | |
| Lowest | 8 | 455 | 2 | 0.15 | 0.01 |
| Average | 7,012 | 943,305 | 6 | 27.73 | 0.40 |
| Median | 1,319 | 90,827 | 4 | 8.83 | 0.26 |
| Highest | 99,031 | 14,996,951 | 34 | 196.67 | 1.50 |