The Spatial Impact of Airbnb in Destination Management: Spotting the differences among the Aegean Islands

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Abstract

The phenomenon of sharing economy as a disruptor in tourism industry is already long discussed. Particularly, Airbnb is recording enormous number of listings worldwide, offering alternative lodging proposals to each possible customer profile visiting any destination, from popular city centers till exotic islands. The impact of such business remains a critical issue among tourism stakeholders. Hotels are facing a strong competitor and destination managers are trying to balance the benefits and the costs that Airbnb generates in terms of economy, society and environment. It is evident that sharing economy contributes to regional development with income potentials for property holders, often provoking externalities that affect local residents and destinations’ environment. However, what should be taken under consideration is indeed the type of destination and the degree of its tourism development, that is to say, its life cycle stage. This paper aims to indicate the differences observed in three Aegean Islands and leisure destinations, when it comes to the allocation and density of Airbnb vis-à-vis Hotel beds, as a tool for destination managers to measure the spatial impact of Airbnb and adjust their strategy based on the life cycle stage of each island. The cartographic depiction of the spatial allocation of the beds per accommodation type using a geographic information system (GIS) is adding particular value to the proposed tool.

Keywords: Airbnb, destination management, destination life cycle, Aegean Islands, tourism development, regional development

JEL Classification: Z32, Z38, O3

1. Introduction

Tourism is a technology intensive sector and the digital era emerged economies that include disruptive innovations have risen in tourism industry. Sharing economy through the development of online platforms has penetrated the majority of the tourism sectors. Airbnb, as an exceptional paradigm of sharing economy, experiences particular growth in a global level, claiming that it contributes to regional development based on its spatial distribution to underdeveloped tourism areas. However, evidence from metropolitan areas and popular tourism destinations present enormous numbers of growth, when it comes to Airbnb listings. Nonetheless, sharing economy indeed contributes to regional development with income potentials for property holders. Meanwhile, it provokes externalities that affect local residents and destinations’
environment. In any case, the particularities that Airbnb business model presents should be individually studied, since its costs and benefits may be extremely different among the destinations or even across a destination. This fact should be definitely considered by the destinations managers that often examine general practices to deal with Airbnb.

Therefore, this paper aims to highlight Airbnb penetration in three different types of leisure island destinations from the perspective of destination life cycle concept that define the particular attributes of each destination. The authors try to analyze and extract useful findings regarding the tourism development of these islands and draw conclusions with regards to destination management. By depicting the spatial allocation of Airbnb listings vis-a-vis hotel units’ dynamics using GIS, the aim is to develop an evaluation tool of Airbnb impact for the destination managers in order to reconsider their policy towards sustainable tourism and regional economic development. The research findings illustrate the differences among the three island destinations studied, when it comes to Airbnb spatial behavior depending on the destination life cycle stage and tourism product offered.

2. Literature Review

Spatial evolution of sharing economy and regional development

Regions assemble several types of social and institutional networks, whose existence and function depend on conditions, such as the existence of an ICT infrastructure capable of supporting strong economic activity; the availability of qualified human resources; the possibility of easily establishing personal contacts; the existence of working relationships among political, administrative, religious, and cultural sectors; the availability of more public and private services; the possibility of developing an easily established, strong and regular personal and institutional interaction which, in turn, promotes territorial proximity. (Santinha & Castro, 2010, Katsoni, 2011).

Regions are thought of and designed as active components of a globalized world. (Santinha & Castro, 2010). ICTs help in the creation of immaterial networks both within regions (internal) and between these and other places (external), and competitive advantage of the region can be realized not only by applying existing marketing models but, rather, by developing innovative concepts. Integrated approaches that build on the advantages and capabilities of technology need to be translated into concrete innovative marketing actions, where regions communicate their offering, enhance their visibility on the market, strengthen their competitiveness and support businesses’ decision to invest in innovative tools and applications (Gretzel, Yuan, and Fesenmaier 2000; Katsoni, 2011).

As expressed in Katsoni, 2011: 101, “…this innovation process demands a selective collection, use, and dissemination of information, as well as an intensive interaction among multiple actors. Innovation seems to call for a systematic reorganization of how society and economies function, aiming to enhance the creation and development of social and economic networks, supported by trust and structured around the sharing of common interests, languages, and knowledge.” This network formation process is based not on spatial proximity, or shared interests, but on its ability to form networks and harness new technologies, but also on notions such as mutual dependency and adaptation, discussion and negotiation, trust, honesty, long-term commitment, quality control and shared knowledge, in order to develop competitive tourist products. (Katsoni, 2011).

The hospitality industry has always challenged themselves to new trends and innovative ideas that would be able to satisfy modern and traditional consumers and of course tourism regions responded accordingly. The co-evolution of innovative technologies and communication strategies leads to a quantum change in the way business is conducted. In this process of knowledge creation and understanding the way it works, tourism stakeholders, through efficient collaboration, ability to learn quickly and translate that knowledge into action rapidly, they will be able to gain competitive advantages in this high velocity of tourism marketplaces.
The 21st century is considered to be the era of digitalization and information. In this era information and knowledge play a crucial role. The fast development of tourism worldwide brings new challenges to destination management. In this case Geographical Information Systems (GIS) applied to tourism management and destination management can improve efficiency and modernization of the industry standards. GIS has been used widely in many disciplines including geography, forestry, climate change, urban planning, environmental studies, medicine with epidemiological studies, meteorology, marketing, economic studies, anthropology, archeology etc (Brown & Weber, 2013).

Tourism is mainly a geographic activity. Much of the information needed in tourism planning is spatial, indicating where and how extensive the tourism resources are, how intensively the resources are used (Constantoglou, 2009). Since the beginning of the 21st century geography as a discipline enjoys a renaissance due to greater computational power and the development of GIS (Persson & Ellegard, 2012).

Tourism also is an activity highly depended on the environment and the lack of planning in many cases can lead to the degradation of the experience offered by the destination to its visitors (Coccossis & Tsartas, 2001). As Pearce (1995) points out the spatial aspects of tourism have been overlooked many times by policy makers but their importance in the sustainable tourism planning process is increasingly recognized by governments and decision makers (Sarrión-Gavilán et al, 2015).

GIS are defined as an integrated sum of software and data used to visualize and organize location-based data for the purpose of performing geographic analysis and creating maps (Wade & Sommer, 2006). A GIS is a digital map linked to a database management system (DMS) that can be used in order to display and query information, carry out spatial analysis and assist decision making process (Longley et al., 2005). The basic parts of a GIS are (Somnath & Nilanjan, 2018):

- A Data Base Management System (DBMS) with which all data (qualitative or quantitative) can be stored and analyzed.
- A Query Function that allows the expert to create enquires by retrieving any subset of the database and apply spatial analysis algorithms by using a standard Structured Query Language (SQL).
- A Data Analysis that allows different resources of data to be integrated and analyzed.
- A Graphical Interface that allows data that have been stored to be output from different devices and in different formats. This gives the expert the opportunity to understand and depict of what is happening, where, for how long and for which reason.

GIS can offer a complete toolbox for tourism planning and spatial decision making (Constantoglou, 2014). The use of this tool by development authorities can contribute to investigate threats and opportunities for development, visitors’ flow, facilities’ availability, use of resources, tourism impacts, modeling and prediction of crucial factors. (Antouskova & Mikulec, 2011; Jovanovic & Njegeus, 2008). GIS have been used for data analysis and synthesis, planning and monitoring of indicators in order to study conflicts leading to the identification of optimum locations for tourism development (Ulmasova, 2011). Many researchers have pointed out the lack in research and understanding of the spatial dimension of the tourism accommodation sector (Ioannides, 2006; Niewiadomski, 2012; Rogerson, 2013), while Sarrión-Gavilán et al. (2015) have underlined that the spatial analysis of densities would provide information on the pressure caused by tourism in a specific area under study.

Airbnb’s supply originated in the segment of the private rentals, in the homes rental industry. It can be characterized as disruptive innovation, as Airbnb initially offers a lower performance according to what the mainstream market has historically demanded (Dewald and Bowen, 2010); at the same time it provides some new performance attributes, which in turn makes it prosper in a different market and eventually displaces the former technology. This sharing economy example has disrupted the established order of the tourism and hospitality industry. It encourages micro-entrepreneurship, provides employment opportunities, and improves digital literacy. However, there are many concerns that if the empowerment of this new breed of entrepreneurs and the disruptive innovation phenomenon of the sharing economy, is not properly regulated
and monitored, it can lead to safety incidents, social inequality environmental concerns, over-tourism problems and lack of transparency (Katsoni, 2011). Tourism regional policy makers and all tourism stakeholders have long realized that they could not afford to ignore the Airbnb phenomenon and have made it an imperative to develop a culture that offers equal, accountable, safe and transparent services to all tourism stakeholders.

Airbnb through Destination’s Life Cycle concept

The scattered nature of Airbnb listings mainly on residential areas creates additional income for local neighborhoods turning them into tourism corners across the destination. As well developed in the literature, this fact occasionally causes negative reactions by the residents that refuse to compromise with the externalities generated by the new situation and fight to support the preservations of their traditional way of living and the environmental issues that often listing’s congestion provokes. From the traditional lodging suppliers’ side, hotels have attempted to achieve spacious restrictions for Airbnb in Cataluna (Barcelona) and local authorities of Amsterdam, Venice and Copenhagen have formed regulations to protect the local lifestyle of the inhabitants upon Airbnb growth in their cities and neighborhoods (Katsoni, 2019). Therefore, there are several case studies or conceptual theories in the literature indicating that above described multidimensional impact of Airbnb has led to intense diversification of legislation and taxation regimes.

Nonetheless, the critical issue beyond Airbnb impact is the carrying capacity of the destinations that is highly associated with life cycle stages and this is the key to identify the impact. The concept of destination life cycle is particularly influential to tourism and its sustainability since each stage has implications to tourist flows, relationship between hosts and guests, the degree of change in the destination and the involvement of external stakeholders (Avdimiotis et al, 2009; Swarbrook e, 1999).

As Avdimiotis and Poulaki (2019) argue that the association between destination life cycle and Airbnb activity concerns a linear correlation which has a positive impact on the early stages and a more negative in stages of stagnation and decline. Based on this argument, for the case of less-known destinations within the stages of explore, involvement or development, an emerged economy of collaborative communities who are sharing their properties operating complementary with the hospitality industry, Airbnb may have a high positive impact contributing to the recognition of these destinations as a leader towards their tourism development. Leisure destinations within the stages of development or consolidation experience an impact that scales from low positive on the destination when it comes to lodging capacity increase to low negative mainly on lower-end hotel units that try hard to compete with Airbnb, since for them it operates as a substitute product. However, higher-end hotel units are not facing direct competition from this type of short-term rental provision.

Furthermore, for the case of popular city-breaks, the first destination type met in sharing economy literature (Petraki and Poulaki, 2018), in the stages of consolidation or stagnation, Airbnb growth may provoke disastrous consequences, particularly challenging to be managed, such as over-tourism, social and environmental issues and sustainability in general. Undoubtedly, there is a product substitution related with small to mid-sized city hotels, with larger ones to preserve their share in the lodging market. Finally, within the stage of decline Airbnb impact is hazardous for the destination’s future and, on the other hand, within the stage of rejuvenation Airbnb may prove significant for its growth contributing with its unique benefits in economy, society and environment if is appropriately controlled (regulated).

The model of Airbnb impact measurement based on destination life cycle concept, as developed by Avdiamiotis and Poulaki (2019) supports that Airbnb impact may be different for the hospitality industry and the destination due to their diversification in the nature of attributes and depending on the type and the product of the traditional accommodation units (lower end/higher end), taking into account diversification and competition issues. Considering the aforementioned, destination tourism authorities may be led in reconsidering strategic tourism planning in favor of destinations.
Moreover, traditional accommodation suppliers may be led in competitive reactions to maintain their market shares, optimizing their products and services. Finally, sharing economy providers may be enhanced to reconsider their operations when it comes to their economic sustainability, externalities to residents and destinations carrying capacity. Incorporating Airbnb impact in Butler’s destination life cycle concept (Butler, 1980), one may assume that it operates complementarily to the hotels in the stages of involvement, development and consolidation. On the other hand, in stagnation and decline stages Airbnb services substitute traditional hospitality with the offered rates per night to be in a lower to extremely lower scale. By adding the concept of carrying capacity, the limited point is found within the consolidation stage and thus, any additional capacity generated by underutilized properties may provoke the consolidation stage extension, without impacting traditional hospitality. On the other hand, within stagnation stage the competition between hotels and Airbnb highlights the substitutive nature of the sharing economy.

The difficult part of involving destination life cycle concept in this process is to accurately define the stage of the destination where the impact is measured. The “Early Warning System” concept as developed by Avdimiotis el al (2009) could be used as a tool to identify the signs that appear in “red flagged” stages where the impact is negative to the hotel industry and the destinations. These indicators are related with carrying capacity, decrease in key performance indicators, competition and external environment, among others. Airbnb impact exists since it concerns an emerged economy, with disruptive innovations, that has recently changed the flow of tourism industry and has provoked as overwhelming reactions as destruction and skepticism. Tourism stakeholders are using a variety of methods to balance and control the situation which should be defined in the first place. The more innovative and diversified the Airbnb product is, the more sophisticated and multidimensional approach it needs to develop the appropriate framework to protect industry, society and environment from the costs and at the same time release the benefits from this new economic activity.

A good practice for the destinations managers is the spatial analysis of Airbnb listings vis-à-vis hotel units in order to identify primarily the spatial impact, when it comes to the neighborhoods and the traditional lodging suppliers. Thus, the evaluation of the challenging points that need to be managed in terms of restrictions and particular measures may be the start of a holistic approach of destination management towards Airbnb impact. Given that the majority of the studies and statistics in the literature concern metropolitan areas and big cities, it is worth investigating Airbnb's penetration into a popular leisure tourism destination and its impact on traditional hospitality. Airbnb penetration in leisure destinations and its impact to traditional hospitality, stressing the importance of the life cycle stage of the destination.

Consequently, such a comprehensive approach could interpret the differences observed among the cases studied in the context of this paper, which are three islands of the Aegean Sea, carefully selected to present differences as destinations in terms tourism product offered and development degree: Rhodes, Syros and Patmos, all belonging in the administrative region of South Aegean. Rhodes and Patmos are both geographically in the Dodecanese island complex, while Syros in Cyclades island complex.

**Rhodes**

Rhodes is a popular Greek leisure destination, capital of Dodecanese with population of 115,490 (ELSTAT, census of 2011) and developed in the early stages of Greek tourism growth. It offers leisure tourism product, often massively purchased, however its cultural and natural resources enrich the destination with additional motives for tourism activity. In terms of destination’s accessibility “Diagoras” International airport (RHO) serves air passengers to/from Rhodes in a widespread network of the extended summer period, while Low Cost Carriers (LCCs), Full Service Carriers (FSCs) and Charter airlines share the European market. Flows are originated mainly in from the UK and other countries in lower market shares. Domestic operations are also of high importance for the destination since the connecting traffic is produced via Athens hub and spoke system by the Greek dominant carrier.
It is worth mentioning that in the last decade air traffic in Rhodes has experienced enormous increase mainly due to the entry of a major LCC in the domestic market causing capacity increase and average fare reduction generated from all competitors to operate domestic flights (Fraport, 2020; HCAA, 2020). Only tourist arrivals by air in 2019 (June to September) reached the 2 millions, while hotel beds has recorded a particular growth of 10.3% from 2017 to 2019, reaching almost the number of 100,000 based on the records of Hellenic Chamber of Hotels (HCH, 2020). When it comes to Airbnb beds offered in the island, according to 2019 data of Inside Airbnb and HCH, they correspond to the 15% of the hotel capacity. Admittedly, Rhodes is mature tourism destination with 85.7 hotel beds per 100 inhabitants, an indicator that according to Tsartas et al (2010) suggests Rhodes as a region specializing in tourism. Given the aforementioned, the destination may be considered at the stage of consolidation (some parts of the island are already the phase of stagnation) and needs a careful management in order to avoid the carrying capacity excess upon stagnation stage.

Syros

Syros is a popular Greek island with population 21,507 inhabitants (ELSTAT, census of 2011), the capital of Cyclades and used to be the first commercial port of Greece before Piraeus. It is very close to the mainland, accessible by the sea in 1.5 to 4 hours depending on the ferry type and origin port (Piraeus / Rafina). Additionally, daily flights connect Athens International Airport with Syros Airport (Syros Tourist Lodgements Association, 2020). However, there are no international flights ever summer peak period (HCAA, 2020). Indeed, Syros is preferred by domestic tourists as it is an island that offers different landscape due to its double form of architecture reflecting the social particularities of Catholics and Orthodox co-living. However, inexistence of international flights indicates that Syros is not a traditional leisure destination for incoming tourism. Tourist arrivals in 2019 (June to September) concerns around 200,000 passengers accessed the island by sea and air, with the latter to record only 2,400 passengers (HCAA, 2020; Port of Syros, 2020). Hotel capacity has not recorded any particular change from 2017 to 2019, remaining around 2,500 beds (HCH, 2020) with an increase of 3.9%. Referring to Airbnb beds offered in the island correspond to the 142% of the hotel capacity, which is by far a different ratio comparing to Rhodes (Inside Airbnb, 2019; HCH, 2019). According to the classification of the destinations based on the intensity of tourist activity (Tsartas et al, 2010), Syros belongs to the regions with limited tourist activity or of relatively low importance with the indicator to count 11.7 hotel beds per 100 inhabitants. Given the abovementioned, one may assume that Syros due to several factors, mainly accessibility and infrastructure, is considered to be in the early stages of destination life cycle, and more specifically in the stage of involvement.

Patmos

Patmos is a small island, highly connected with religion due to the historical reference of the cave of Apocalypses and the numerous monasteries located across the island. It is preferred by pilgrims and religious tourists. However, Patmos also attracts several age groups that seek for an alternative form of leisure, more quiet and peaceful than in the popular tourism destinations. Patmos has also been penetrated from Airbnb and its bed capacity corresponds to the 73% of the hotel one (Inside Airbnb, 2019; HCH, 2019). With almost 1800 hotel beds (HCH, 2020) and a population of 3,047 inhabitants (ELSTAT, census of 2011), Patmos receives the indicator of 57.8 hotel beds per 100 inhabitants, which classifies it in the areas specializing in tourism. However, this number is by far lower than the respective of Rhodes and thus, one may assume the Patmos as a destination goes through the stage of development towards consolidation. Nonetheless, the steps from the one stage to the other are particularly low, since Patmos presents low accessibility degree since only conventional ships approach the port of the island from Piraeus (8 hours) or other islands of the Aegean Sea (Municipal Portal of Patmos, 2020). Yacht tourism is also suggested for the island but the inexistence of a local airport is a crucial factor for its tourism growth potential.
Given the information provided above, for the three islands, it is obvious that there are significant differences among them, when it comes to tourism development and destination life cycle stages. Undoubtedly, Airbnb has penetrated all of them and it is worth investigating the degree of such penetration to each one and the impact that has been provoked. Therefore, a spatial allocation analysis of Airbnb listings and beds vis-à-vis hotel units and beds, in combination with recorded numbers of both lodging types may evaluate the spatial impact and suggest the measures should be taken by the destination managers in favor of destination and tourism stakeholders.

3. Methodology

This paper aims to study the spatial distribution of hotel beds vis-à-vis Airbnb beds in three islands. In order to do so a spatial database is created with the use of ArcGIS 10.1and organized according to the old spatial allocation of the islands in small municipalities and communities in order to better understand the dynamics of each one of them.

The following data sets were used: Spatial data at a 1:50,000 scale including the borders of the country and boundaries of prefectures, communities, areas of the Natura 2000 network, road network, great hotel units, lakes, port premises, contour lines of 100 meters, a digital terrain model of the area, map of ground slopes, map of exposure/orientation of polygons, the coastline, airports – helidecks and installed power plants. The scale is small for national level planning but it is the only indicative in order to study how tourism as an activity is distributed in space.

The geographic database is spatially built according to the old territorial system of local self-governed entities (municipalities and communities) which were in total 369 municipalities and 5,554 communities in 1991. Statistical data collected by the Greek Tourism Authorities were based spatially in this form. Since 1997 with the Act of IoannisKapodistrias the Greek State has created 901 municipalities and 130 communities through the synthesis of the previous division. This main goal of this Act was to reduce the number of local authorities, create stronger municipalities and promote local development. The third stage of local development reform was started in 2010 with the Act of Kallikratis that was adopted after the beginning of the financial crisis in Greece, to further reduce the number of local authorities in just 325 municipalities. Additionally, the Act of Kallikratis targeted in public expenses reduction in line with ongoing proposals from the European Union and the International Monetary Fund (Kalimeri, 2018).

The National Statistical Authority has followed all the above reforms for data collection and management. This means that -each time- data collection refers to a greater scale fact that in many cases leads to accuracy loss in smaller scales of analysis. For example, the island of Rhodes in 1991 was constituted from 43 municipalities and communities while nowadays from only one.

Research limitations

In the specific database, all census data available in time series from 1971 up to 2011 (NSS, 2011) were registered (at the community level in a first place), as well as the data for the number of beds and overnight stays in primary and secondary accommodations, for the decade 1990-2017.

The data of hotel beds and rent-a-room beds are collected from the Ministry of Tourism, while the latest of them are coming from the Tourism Business Register of the Ministry of Tourism. According to Greek legislation each touristic activity that offer residence (hotels, rent rooms, apartments) need to be registered in Ministry of Tourism and obtain a license in order to operate legally. This data set offers exact details for every lodging unit like exact location and capacity. These are the data used as the National Statistical Authority and the Ministry of Tourism is only providing data at a Municipality level according to the latest division of Kallikratis, which means that in each island under study (Syros, Patmos and Rhodes) there is only one municipality. MHTE data are processed in order to produce a dataset of hotel beds with exact locations.
according to the old communities and municipalities division. The latest data available from MHTE were for the year 2017.

As for the data of the sharing economy capacities in beds in these three islands we have used, and processed data offered from Inside Airbnb (insideairbnb.com) for the year 2019. The authors assume that the year-over-year (2019/2017) difference in hotel beds do not particularly affect the spatial allocation and density of Airbnb listings and beds vis-à-vis hotel units and beds of the islands under study.

Using the available data, a series of indicators are generated concerning tourism and demographic characteristics of every community; these characteristics usually show the structure, the dynamics and the pressure that these areas experience.

**Figure 1. Airbnb beds distribution 2019**

![Airbnb beds distribution 2019](image1.png)

Figure 1 is depicting the distribution of Airbnb establishments in the three islands under study. What can be seen in this map synthesis is that in major touristic areas of the islands, like Rhodes city, Lindos and Afantou in Rhodes island, Chora the capital city of Patmos and Ermoupoli, the capital city of Syros along with Ano Syros and Barh (which are close to the capital), the Airbnb establishments are mainly located.

**Figure 2. Hotel beds distribution 2019**

![Hotel beds distribution 2019](image2.png)
In figure 2 where the spatial distribution of hotel beds is depicted what is can be seen is that in Rhodes island the capital city of Rhodes, along with Kalithea, Faliraki, Ialysos, Afantoy, Lindos, Lardos and Asklipioio are the areas where the higher number of hotels operate. Similarly, Ermoupoli is the area of Syros where the majority of the hotel beds can be found.

Combining the two above map syntheses it is obvious that Airbnb establishments are usually developed where there is evident and already existing touristic activity in mature destinations like Rhodes. In the case of Syros and Patmos the situation is almost similar.

Figures 3 and 4 depict the density of beds in Airbnb establishments and hotels accordingly. Numbers in Legends show the beds per square kilometer. What it can be observed in Figure 3 is that the highest density of Airbnb beds can be found in the already developed touristic destinations in Rhodes and in Patmos. In Syros we observe a different spatial allocation where Airbnb seems to be developed in areas out of the island’s capital, like Poseidonia and Barh.
Figure 3. Density of Airbnb beds 2019
Figure 4. Density of Hotel beds 2019

In Figure 4 the spatial distribution of the hotel beds density is presented. Most of the pressure is in the capital city of Rhodes and Ialysos.

4. Findings on Spatial Allocation of Airbnb vis-a-vis Hotels

In general Airbnb establishments can be found where tourism is already developed. Tourism as an activity is creating territorial enclaves of development at this particularly true in cases like the capital cities of the islands under study. In Syros we can observe a different model of Airbnb development in more isolated areas where hotels are not highly developed.

Table 1: Tourism activity data and indicators for the islands of Rhodes, Patmos and Syros
Rhodes

In Rhodes capital city where the biggest part of the population of the island is situated there is also the majority of beds. Next to the capital city is Ialysos where the inhabitants are less than the sum of beds of hotels and Airbnb establishments. The same situation is observed in Afantou, Kalithea and Koskinou which are communities one next to the other. In this case there is a cluster of developed communities in tourism; in an area of 127.8 square km, with a population of 105,203 inhabitants there are 73,705 beds. In this case the total density will be 579 per square km.

A second cluster of touristic development is observed in the communities of Lindos, Lardos and Laxania where in an area of 85.25 square km, with a population of 6,087 inhabitants there are 12,834 beds more than double the size of the population.

Syros

In Syros the situation is quite different as hotels are mostly developed in the capital city. What can be observed is that in the city next to the capital which is Ano Syros there are no hotels and it is a community where Airbnb is developed due the short distance from the capital. In many cases these establishments are also used by off season from students or people working in the island. This is maybe the main reason why there are Airbnb establishments in areas like Pagoy, Manna and Galissas.

Here there is also a cluster of communities starting developing tourism on the south part of the island Barh, Foinikos and Poseidonia.

Patmos

In Patmos it is evident that all bed places are closely developed to the capital city Chora and Skala. Airbnb is almost as much developed as the hotel sector in the island. Patmos is a spiritual and religious destination so there are Airbnb establishments is more remote and rural areas of the island.

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5. Conclusions

The authors tried to demonstrate the spatial distribution of two lodging types, the traditional hospitality sector and the sharing economy sector, by gathering and depicting data in three different Aegean islands as leisure tourism destinations. The analysis includes two main indicators: the spatial allocation of a) beds and b) bed density, of Airbnb listings vis-à-vis hotel units.

The findings of this research illustrate that there is indeed difference in the abovementioned indicators according to the destination life cycle stage. It is also evident that there is no sign of regional planning or regional tourism policy from the side of the key public tourism stakeholders, when it comes to the spatial allocation of bed density.

The authors assert that in mature tourism destinations (at the stage of consolidation or stagnation), as in the case of Rhodes, sharing economy listings are concentrated around the already tourism developed areas, trying to cover the excess tourism demand, operating complementary to the traditional hospitality sector.

On the contrary, in the case of Syros the spatial allocation of the Airbnb beds vis-à-vis hotel beds, in combination with their respective numbers, indicates that at the stage of involvement, Airbnb is growing faster than the traditional hospitality, seeking to dominate in the lodging market.

This policy of dominance that Airbnb follows is obvious in Patmos as well, where it tries to take advantage of niche tourism development opportunities and diversified tourism product offered in the island, mainly due to the lack of efficient transport alternatives. As indicated in the literature review of this paper, destination life cycle for Patmos remains stable at the development stage.

Nonetheless, Airbnb’s development policy is obviously against the advent that its business contributes to the diversification of the tourism options in a destination by encouraging the development of less attractive touristic areas. It is clear that Airbnb is similarly expanded as any other tourism business of the lodging sector, trying to increase its market share often taking advantage of the destination’s life cycle stage.

Airbnb claims that it also contributes to the tourism development of the areas outside the touristic congested zones (Airbnb, 2020), something which is not evident from the above research. This fact concerns the coexistence of the sharing economic operations with traditional lodging business and needs to be further explored, since the above findings provoke a certain degree of skepticism to the extent of the coexistence and the contribution of these two types of hospitality in regional tourism development.

Additionally, a more in-depth research aiming to produce more pressure indicators and go deeper into Airbnb data analysis, depicting prices, seasonality and qualitative parameters such as the customer satisfaction would be useful for an effective tourism destination management and policy making.

References


Institutional data


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