

Research Article

How Renting Accommodation Can Contribute To The Circular Economy: A Case Study Of Airbnb Accommodation In Yogyakarta

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Abstract

Yogyakarta is a tourist destination with various tourist attractions and objects. The high number of tourists requires providing facilities such as accommodation, restaurants, travel agents, and various other supplies. Developments in technology and information have led to changes in people's consumption patterns. The emergence of various platforms that support different economic activities has contributed to the tourism sector in Yogyakarta. Airbnb is a platform that has increased the utilization of home assets, either partially or entirely, for rent to those in need. The need for large rooms in Yogyakarta every peak month has occupied almost all tourist accommodation rooms. This condition is an opportunity for sharing economy actors. The Airbnb market differs from the tourist accommodation market, thus the impact will be different compared to conventional tourist accommodation. This study aims to discuss the extent of the contribution of leasing a residence to the circular economy. Literature review and secondary data analysis are used to explain this phenomenon. The activities of various dwellings in the sharing economy aim to increase the utilization of unused assets by putting them up for rent. This concept supports the goals of a circular economy because previously unused home assets can be optimized using the platform. Even though Airbnb's occupancy rate has yet to significantly contribute to meeting the needs of tourist accommodation rooms in Yogyakarta, its various advantages have been able to meet the needs of tourists with specific preferences and contribute to circular economy practices.

Keywords: sharing economy, circular economy, accommodation, tourism, airbnb

Introduction

The Special Region of Yogyakarta has made tourism one of the pillars of development in its medium-term development plan (RPJMD DIY 2017-2022). Tourism is a leading sector that has had a significant impact on the economy, in addition to the pillars of culture and education. As a domestic and foreign tourism destination, Yogyakarta bears the responsibility to provide various facilities. Attractions, accessibility, and amenities are part of the tourism supply that supports meeting tourism needs (Robusti et al., 2018; Ariesta et al., 2020). The provision of accommodation is a basic need for tourists who visit. A large number of tourists has led to a very high level of accommodation occupancy during the peak months of each year. Various types of accommodations, such as star and non-star hotels, homestays, and villas, often require assistance to meet the needs of many tourists.

Simultaneously, the development of information and communication technology has produced various platforms that support the creation of an economic transaction space. Distance barrier is no longer a problem to bring together providers and consumers (supply and demand). This instrument has re-increased leasing activities that previously existed on a small scale towards a global scale (Botsman, 2013). Technology has supported leasing activities with various concepts, one of which we know as the sharing economy. Many terms have been used to describe the activity, such as sharing economy, collaborative economy, collaborative consumption, or on-demand economy (Botsman, 2015). In this article, the sharing economy denotes renting a place to live.

The development of the current sharing economy is the result of advancements in information and technology, where leasing activities are able to reach a much larger scale. Various emerging platforms have also been able to quickly match requests with offers and are supported by various payments channels, guaranteeing the security of providers and users. Furthermore, the testimonial feature has also become an aspect of consideration by these economic actors (Zervas et al., 2020). Assets that have not been utilized or have not been fully utilized can be easily leased through various platforms. Gojek, Grab, Tokopedia, Airbnb, and Couchsurfing are examples of sharing economy platforms.

Airbnb appeared as a platform that offers a medium to bring together owners of homes or parts of a home to rent their space to people seeking a short or long-term stays or experiences. This platform has developed in various countries and allows global transactions to occur. Airbnb can increase the utilization of a residence or home that is not fully or partially used for a rental fee at a specific period of time. Concurrently there are several standards from platform providers that asset owners must also meet to maintain quality.

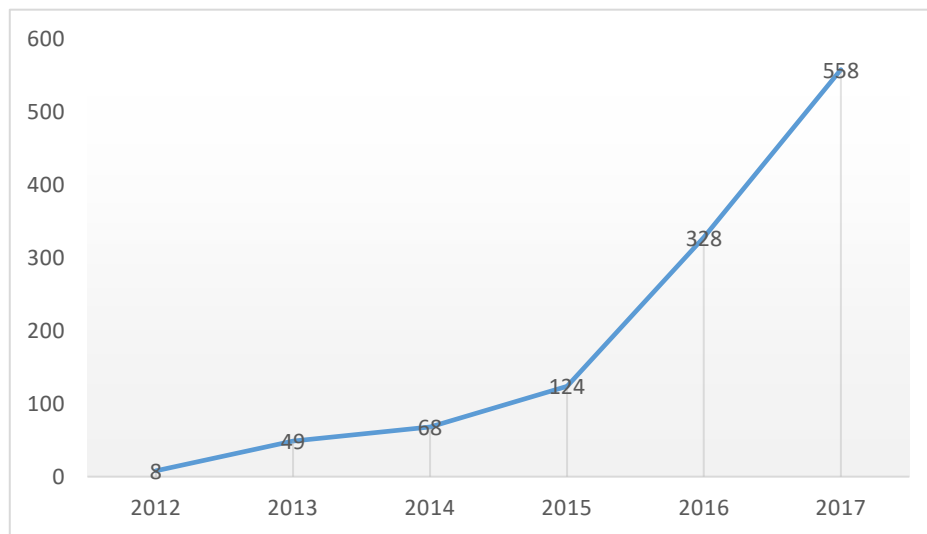


Figure 1. Airbnb Accommodation Growth Chart in Yogyakarta
Source: AirDNA

The Airbnb platform serves as an alternative to meet the needs of tourist accommodation in Yogyakarta. Airbnb accommodation in Yogyakarta has experienced significant growth since 2012 (Figure 1). A high level of accommodation occupancy can be met by sharing economy actors. This phenomenon has led to an increase in the utilization or use of residential space assets in line with the circular economy concept. Previously, the Yogyakarta City Government had implemented a moratorium on hotel construction for environmental reasons. The construction of high-rise buildings in the urban area of Yogyakarta has indeed become an issue discussed by various groups. The environmental impact caused has led to a decrease in environmental quality. Utilizing available assets is an alternative option, although upon observing at market conditions, accommodation users or tourists have specific preferences in choosing accommodation (De Bruyne & Verleye, 2022). The extent to which the activities of various residences can contribute to meeting accommodation needs is a critical discussion.

Supply and Demand Tourism in the City of Yogyakarta

Tourism supply or tourism industry, according to Sessa (1993) in Table 1, is the result of all production activities involving services and goods needed to meet tourism needs (tourism demand), which represent tourism consumption consisting of tourism resources, infrastructure, facilities, entertainment, and sports venues. A collection of tourism businesses that are interrelated to produce goods and services in order to meet the needs of tourists is called the tourism industry. Availability of accommodation is included in the receptive facilities element, which is the offer or availability of tourism. Accommodation offered can include hotels, campgrounds, caravan stops, villas, cottages, and other accommodations.

Table 1. Elements of Tourism Industry

Elements	Examples
Tourism resources	Natural resources Human resources
General and tourism infrastructure	Means of communication and travel Social installations Basic installations Telecommunications
Receptive facilities	Hotels, guest houses, town, and villages Condominiums Complementary residences Residences for receptive personnel Food and beverage installations
Entertainment and sports facilities	Recreational and cultural facilities Sport facilities
Tourism reception services	Travel agencies Hotel and local promotional offices Information offices Car hire Guides, interpreters

Source: Sessa (1993) in Hall and Page (1999)

Tourism demand or tourism needs is a unique spatial variety of the number of people who travel or wish to travel to use facilities and services somewhere outside their workplace or residence (Mathieson and Wall (1982) in Hall and Page (1999)). In this case, the need is observed from the relationship between individual motivation and their ability to travel with a service that focuses on the spatial implications for domestic and international tourism development. In conceptual terms, there are three elements in tourism demand, namely:

1. Effective or actual demand
Includes the number of people participating in tourism, generally indicating the number of tourists.
2. Suppressed demand
The population that cannot travel due to unavoidable circumstances is called potential demand.
3. No demand
A distinct category for the population who have no desire to travel.

Table 2 shows the availability of hotels and the number of rooms available in Yogyakarta. Hotels in Yogyakarta are divided into star and non-star hotels. The city of Yogyakarta has the highest number of hotels and rooms. Various non-natural or artificial tourist objects are located in the urban area of Yogyakarta. In addition, complete facilities, both in terms of transportation and access, have resulted in the hotel's location being concentrated in Yogyakarta, in contrast to other areas far from the city of Yogyakarta, such as Kulon Progo and Gunungkidul in terms of location. Even though currently Yogyakarta International Airport is located in Kulon Progo (Rijanta et al., 2022; Rijanta et al., 2019), the impact on developments in its surrounding is yet to be apparent.

Table 2. Number of Star and Non-Star Hotels and Hotel Rooms in Yogyakarta 2017

Accommodation Type	Number of Accommodations	Number of Rooms	Average Occupancy Rate
5 Star	9	1873	67.67%
4 Star	18	2516	
3 Star	32	2756	
2 Star	24	1538	
1 Star	13	541	
Non-Star	589	10376	43.79%

Source: Department of Tourism of the Special Region of Yogyakarta

Sharing Economy and Circular Economy

Collaborative Consumption (Botsman & Roger, 2011) is the behavior of renting, borrowing, exchanging, and sharing carried out through technology on a scale that was impossible before the internet existed. Another term that is also used is the mesh business which, according to Gansky (2010), is based on network sharing to get access to rent rather than own. The primary strategy of the mesh business is to sell (by renting) the same product several times (multiple times). Multiple sales will generate multiple profit contacts to customers who also multiply. Multiple contacts or contacts to several customers will increase sales, strengthen the brand, increase service competition, and deepen customer relationships. Activities to rent a house or part of a house have been conducted long before the existence of the internet. Hotels, homestays, and villas were accommodations that fulfilled the needs of tourists before accommodations using a sharing economy platform appeared. A sharing economy is defined as a system based on the sharing of underused assets or services. Sharing activities are implemented free of charge or at the direct cost of the individual. These activities are based on trust between the provider and the user.

Airbnb does not have assets like a company engaged in the hospitality sector. Products from the hotel industry in the form of physical buildings such as hotels, villas, or homestays, as well as services offered by the conventional industry, have now begun to be disrupted by newcomers. Airbnb is one of the newcomers who has disrupted the established hotel industry, providing many needs for users, tourists, and workers, on work trips or even business people on business trips. Airbnb offers a platform instead of a product. The platform offered is one that can bring together homeowners and users who need an accommodation to stay with specifications depending on their needs. The platform built by Airbnb is an ecosystem capable of providing various accurate data that users need.

A new experience is one of the things that the platform is capable of offering. The platform built by Airbnb is capable of accommodating a wide range of user needs, from the availability of accommodation, location, type of building, to amenities. However, throughout its development, many complications occurred, such as rejection from numerous parties who feel aggrieved. In addition, several countries including Indonesia considered renting a house temporarily to be illegal. Although renting is one of the primary activities in tourism, the government, which acts as a regulator, was considered slow and unable to formulate regulations that can mediate between Airbnb and the conventional hotel industry.

The development of the house-rental platform has become one of the phenomena that are now being studied, considered, and observed by various business people. Airbnb was first developed in Manhattan and was initially used to meet the accommodation needs of conference presenters (Gallagher, 2008). The platform grew globally, entering Indonesia and penetrated Yogyakarta, a popular tourist destination that is unique in culture and community experiences. The platform had to make adaptations to the new environment, adjusting its characteristics to the city.

The circular economy concept does not promote the excess production of new goods, but the rational use of goods already produced (Atstaja et al., 2022; Nasution & Tjhin, 2020). This activity aims to significantly reduce the amount of waste at all stages of the product cycle. Various sustainable practices can encourage opportunities to develop new business models for a company (Jabbour et al., 2020). This economic principle can be a solution for a more prosperous society, not depend on natural resources and energy, and is environmentally friendly (Barbu et al., 2018).

The link between the sharing economy and the circular economy has not been studied systematically, where both are essential in sustainability, business models, consumption, and governance. Previous research explains that activities on the sharing economy platform have a strong consumer focus, but a focus on the circular economy is yet to be evident (Henry et al., 2021). Consumers from the sharing economy are a community that already trust using or renting products on the platform. In its development, the concept of the sharing economy is more bottom-up because the roles between individuals (providers and users) are influential. This community is significant in supporting a platform to grow in contrast to the concept of a circular economy which tends to be considered more top-down. In this sense, the sharing economy is conceptualized as part of the circular economy. The practice of utilizing existing assets or resources is considered to be in line with circular economy practices, however, whether the activity of leasing houses as tourist accommodations in Yogyakarta actually contribute to the circular economy remains a question. The article aims to note the observation by contrasting demands for Airbnb accommodation to demands for tourist accommodation in general. This phenomenon is interesting to discuss due to Airbnb being a choice for communities or users on a global scale who have a high sense of trust in leasing homeowners.

Methods

Secondary data analysis and literature review were used to analyze this article. This method was chosen as it allowed the authors to understand the object of the research. The characteristics of hotel and Airbnb accommodations in Yogyakarta in 2017 were analyzed using secondary data and each accommodation's occupancy rate. AirDNA providers offer data regarding Airbnb accommodations, while data regarding hotel accommodations in Yogyakarta is derived from the Department of Tourism of the Special Region of Yogyakarta. Descriptive statistical analysis was conducted using data visualization in the form of graphs and diagrams. Literature studies were used to debate and explain how the sharing economy contributes to the circular economy.

Results and Analysis

Characteristics of Airbnb in Yogyakarta

An accommodation rental is a type of house rented out, consisting of a whole house or apartment, private rooms, and shared rooms. The whole house rental type means the homeowner is not at home when the user rents the house. Private room means that the homeowner will use the private room and rent or share other spaces with the users, and room sharing means that users will share rooms with other users. There are 1162 Airbnb accommodations in the Special Region of Yogyakarta based on data from AirDNA in 2017.

Private room rental types dominate Airbnb accommodation types in Yogyakarta. In contrast to the distribution of accommodation types in various other countries. Based on Ke (2017), variations were analyzed in the distribution of accommodation rental types in 30 countries with the most significant number of accommodations. 27 countries, including Indonesia, dominated in whole-house accommodation compared to the other two types. Only three countries have more private room rental types than the other types, namely Taiwan, India, and Ireland. The distribution of accommodation types in Yogyakarta differs from the distribution of types in Indonesia.

Based on Figure 2, accommodation in Yogyakarta is dominated by private room rental types (725), in contrast to Airbnb accommodations in Indonesia which are dominated by all-room types. The question emerges on why private room rental types dominate Airbnb accommodation. When looking at the type of rental, private room rental allows accommodation users to have a private room and several other spaces, such as a kitchen, living room, or even a bathroom, that the homeowner shares. This type will certainly provide more experience for users to live temporarily in the same house as the local people of Yogyakarta. In addition, the people of Yogyakarta are known for being friendly to tourists and their tourism culture, which has existed for a long time. Therefore, Airbnb accommodations with private room rentals are mostly located in Yogyakarta.

The type of rental will have an impact on the management of the house. A homeowner's existence is one of the attractions for Airbnb accommodation users. When differentiated based on the management of the house, accommodation can be divided into accommodation where the owner lives in the house, the owner does not live in the house, and another person or management manages the house. The type of rental where the owner lives with the user is a unique attraction for accommodation users. In addition, the experience of living with local people, information, and friendliness is why users use Airbnb.

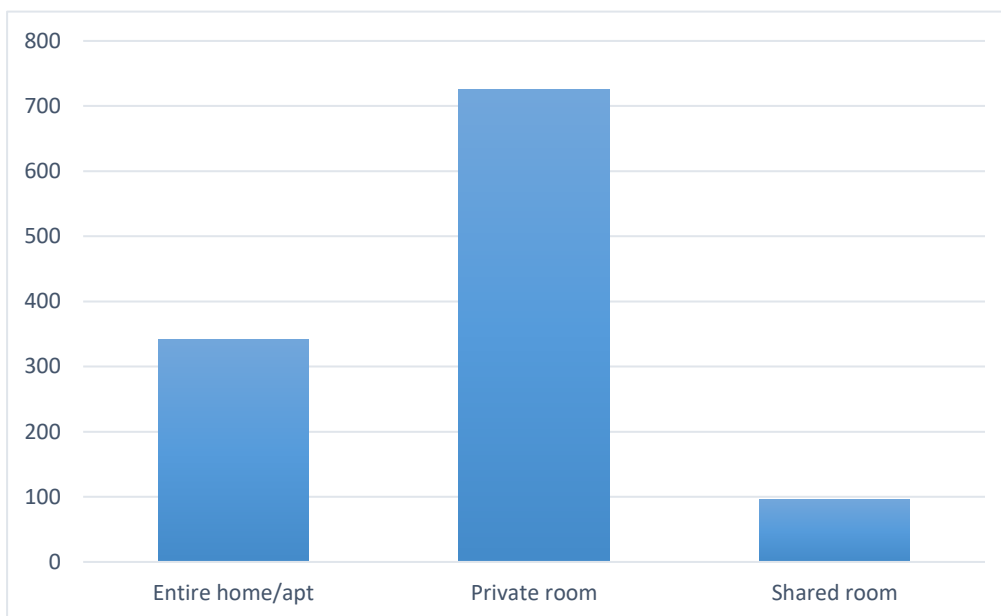


Figure 2. Graph of Number of Airbnb Accommodations by Rental Type in Yogyakarta 2017
Source: AirDNA

The property type indicates the type of accommodation building being offered. The Airbnb platform is not only able to connect homeowners and users but also other accommodation owners such as villas and homestays. Based on Figure 3. it is shown that the most common property type is a house, amounting to a total of 485 Airbnb accommodations. The two unspecified accommodations lacked rental type descriptions and rental level data. The graph shows that houses are the most widely offered accommodation. A house is a building that functions as a livable place to live in, a means of fostering a family, a reflection of the dignity of its inhabitants, and an asset for the owner.

The large number of houses offered shows that the people of Yogyakarta have an optimal amount of unused space or houses. Unused rooms and uninhabited houses are assets that many people of Yogyakarta rent out to tourists. Therefore, many houses for rent can be studied further depending on the housing and settlements available in Yogyakarta.

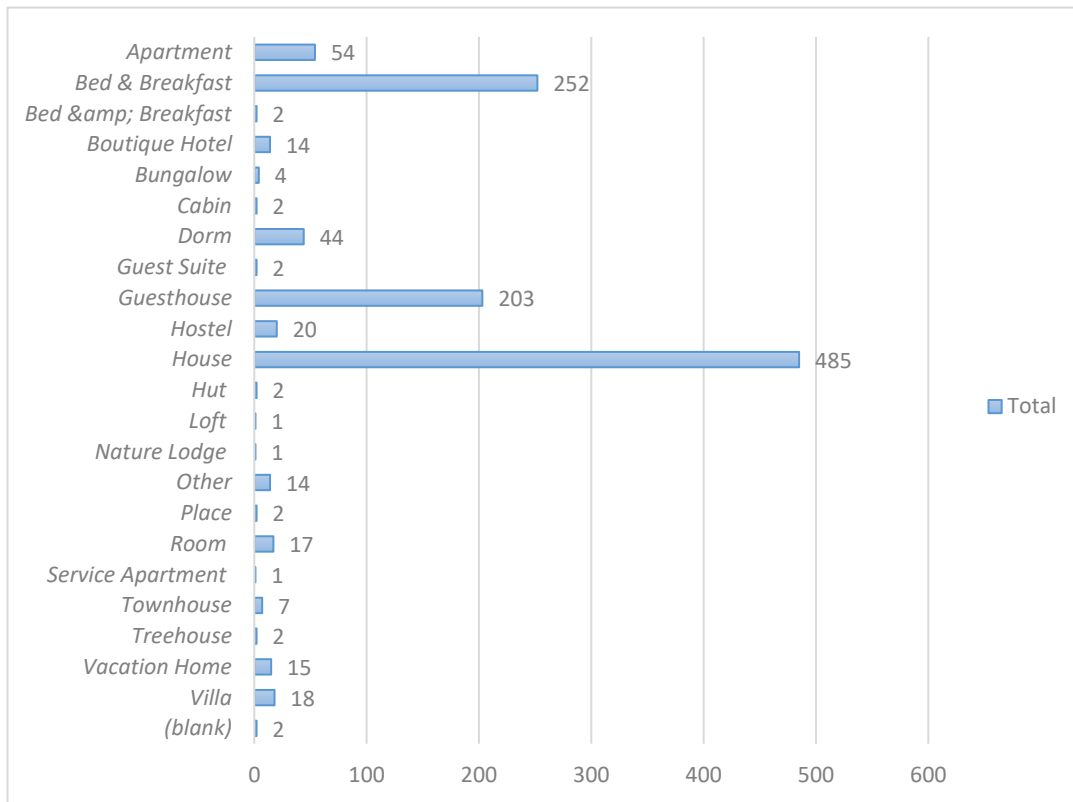


Figure 3. Graph of Number of Airbnb Accommodations by Property Type in Yogyakarta 2017
 Source: AirDNA

Airbnb Occupation Rate in Yogyakarta

The processing results show that the density of accommodation preserved in each month has a very diverse pattern. The density of accommodation each month is strongly influenced by the occupancy level. Therefore, the greater the number of accommodation reservations will affect the density pattern. The number of Airbnb accommodation reservations in 2017 (Figure 4) shows monthly fluctuations. The number of reservations increased in certain months, namely April, July, August, and December. The increase in the number of users can certainly be caused by various factors, one of which is the holiday period, both nationally and internationally. Accommodation users are composed of not only domestic tourists but also foreign tourists.

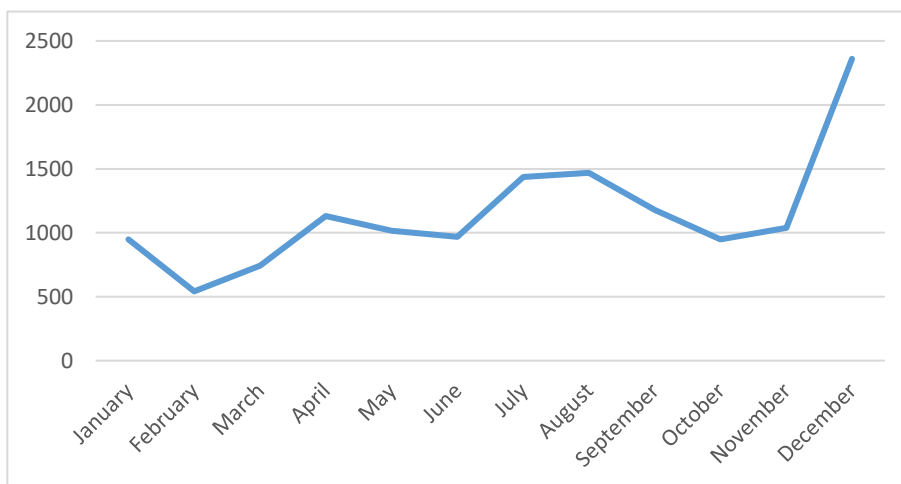


Figure 4. Graph of Number of Reservations by Account in Yogyakarta 2017
 Source: AirDNA

A comparison between the availability of accommodation days for rent and reserved days is presented in Figure 5. The graph presents data by month throughout 2017. Accommodation availability is presented using a bar graph, while the line graph illustrates the number of reservations made each day. The previous discussion explained that the number of available accommodations increased from the beginning of the 2017 to the end of year. This increase was due to the ever-increasing number of Airbnb accommodations in Yogyakarta. The number of accommodations is directly proportional to the increase in available accommodations for reservation. The number of reserved days fluctuates each month. Time influences the daily occupancy rates or the volatility of accommodation reservations. Holidays are one of the things that cause an increase in the number of accommodation users. However, users from abroad will have different peak times than local users.

Accommodation occupancy rates are based on the number of reservations for each account, the number of days reserved, the number of days available for reservation, and the number of days blocked. The number of reservations by account is the number of orders the user makes using the account. Within one year, there were 13,779 reservations, with the most significant number of reservations at one accommodation being 174 reservations. The accommodation has a private room rental type. Overall, the average number of reservations per accommodation is 12 within one year. Based on the type of rental, private rooms have the largest average, with an average of 13 reservations in one year.

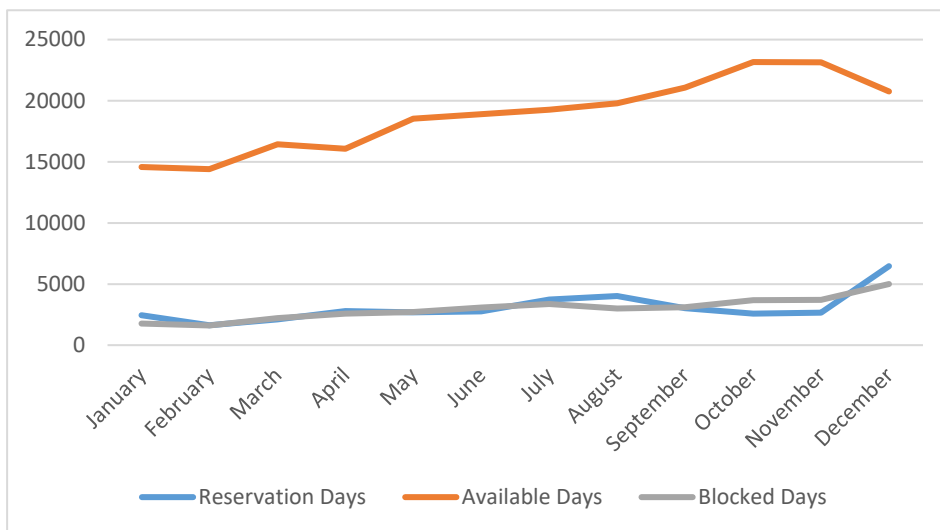
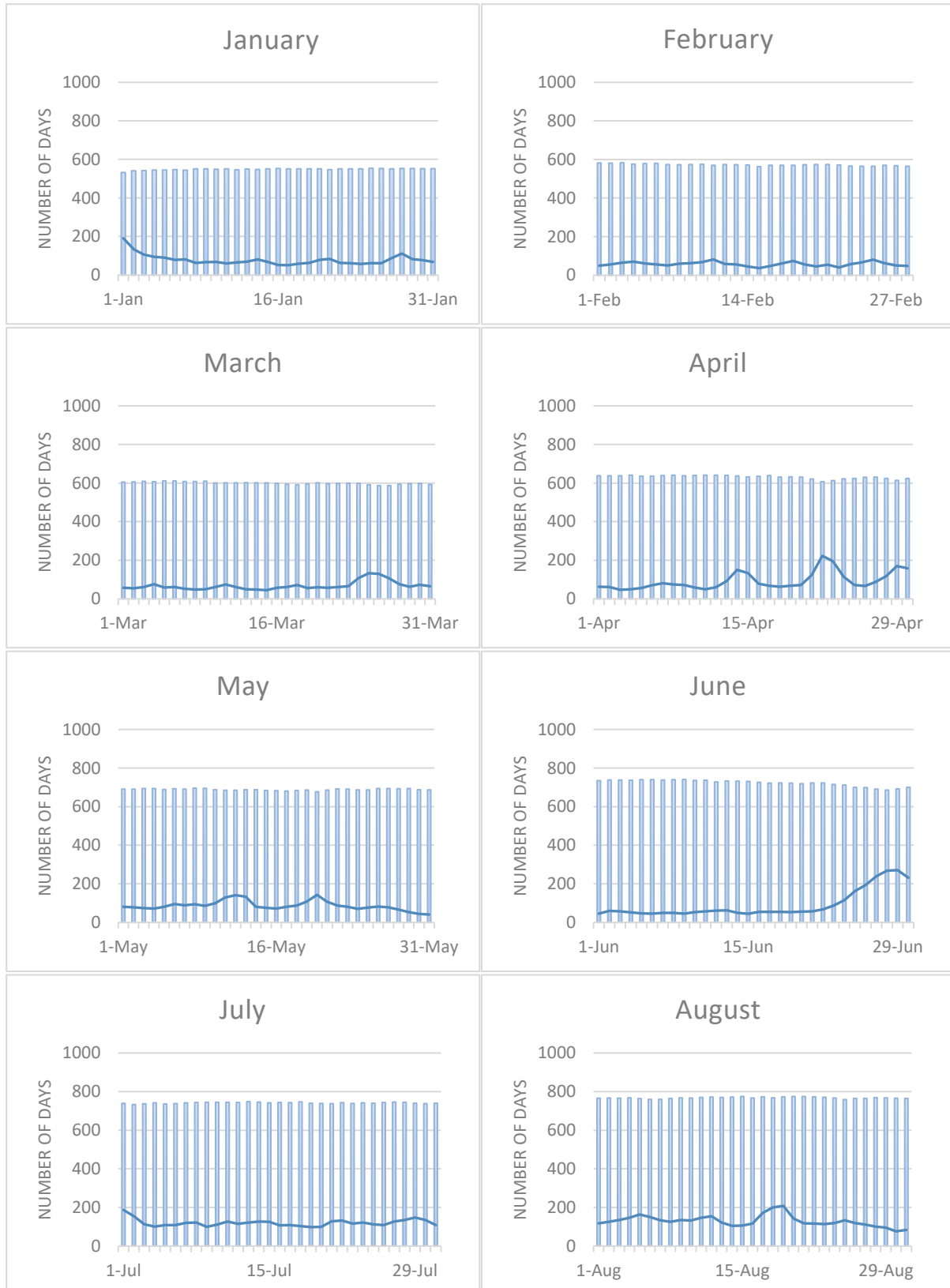


Figure 5. Airbnb Accommodation Occupational Chart in Yogyakarta 2017
 Source: AirDNA

A comparison of the daily reservation status is used to convey the level of accommodation occupancy. The graphic presentation of the number of daily status for all accommodations in Figure 6 shows that the total number of days available for reservation has a far larger proportion compared to the number of days reserved and blocked. The number of days available continuously increases from January to December. This was due to the number of accommodations which continued to increase in the middle of the year. The numbers of blocked days and reserved days have the same trend each month. The number of days reserved from all accommodations for one year is 36,857 days, while the number of days blocked is 35,539 days. The graph shows that the total number of rooms being rented every day is still far from the total rooms available for rent. Accommodation occupancy rates are still lower due to the considerable distance between the graph lines of the number of days available and the number of days reserved, which is also evident as a similar condition for the number of days blocked. The almost overlapping graph lines show that the availability of rooms to be rented by the accommodation is still low.

The availability of accommodation for reservation depends on the daily status determined by the owner of the accommodation. The number of Airbnb accommodations in Yogyakarta has been increasing over the years, which will significantly increase the number of available accommodations for reservation.

Although the number of houses or accommodations that can be reserved from the beginning of 2017 until the end of the year has been continuously increasing, it will also be greatly influenced by the daily status. If the number of available accommodations is high, but during a certain period of time they are unavailable to be reserved, then the availability will not necessarily correspond to the number of existing accommodations.



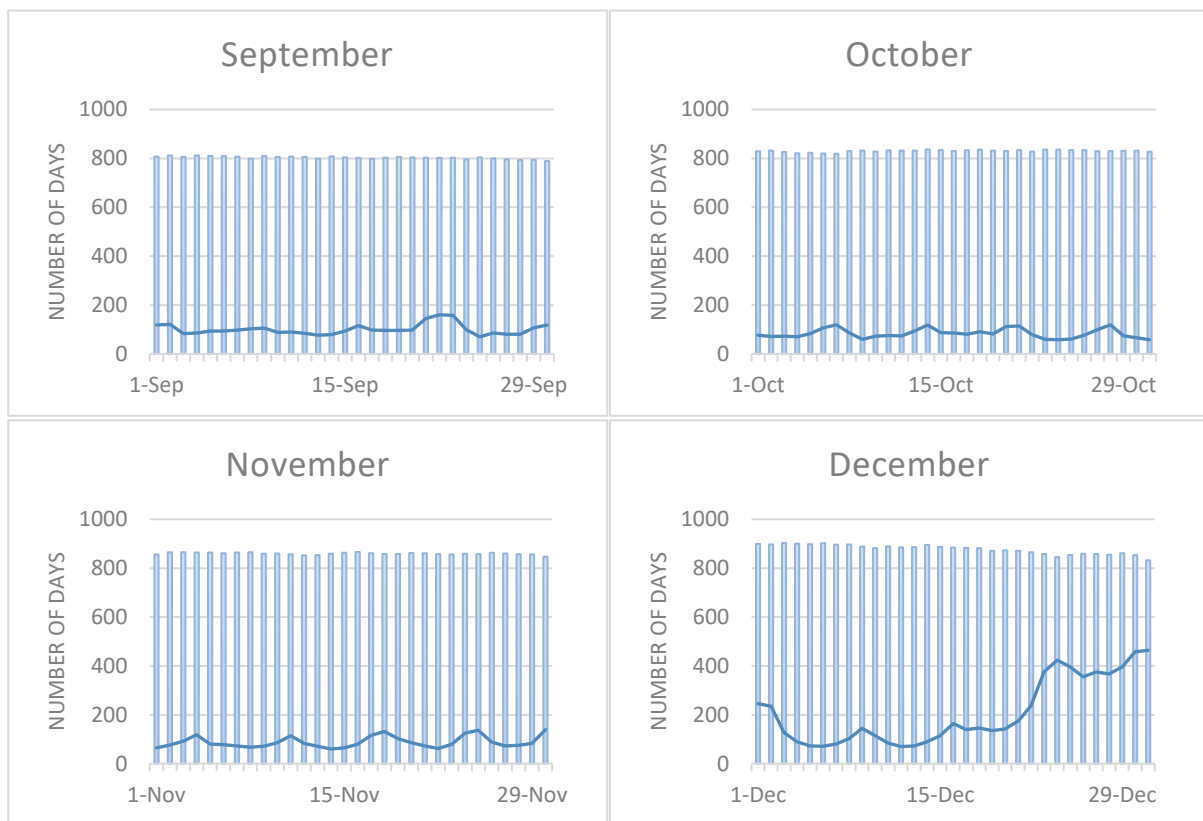


Figure 6. Airbnb Occupational Graph in Yogyakarta 2017
 Source: AirDNA

The comparison between the number of reserved days and the availability of days is very distinct, where the amount of rooms available is starkly larger compared to the number of days reserved. Only at the end of December did the number of reservations reach a value of more than half of the available accommodations. Reservations in other months have yet to attain the same number in December. Airbnb accommodation occupancy rates tend to be low with very high availability. Accommodation with status available for rent every day is always high and increases alongside the number of accommodations, despite the number of tourists visiting Yogyakarta growing on a yearly basis. The unfamiliarity of Airbnb by tourists, especially in Indonesia, can minimize the optimal use of Airbnb as a place to stay. Tourists still choose conventional hotels as an option for them to stay. At the beginning of this research, it was discussed that the payment method using credit cards in Indonesia was less popular than debit cards and cash. Airbnb uses a credit card payment method, although conventionally, payments can be made using cash or a debit card outside the system. The low number of credit card users is an obstacle for tourists to make transactions through Airbnb, in contrast to foreign tourists, who mostly use credit cards as a payment medium. Most domestic tourists need a credit card as a medium for payment.

The Contribution of House Renting Activities on the Circular Economy

The demand for tourist accommodation in Yogyakarta has a significant impact on accommodation availability. Permits for the construction of hotels as an accommodation are still increasing despite experiencing various rejections from various parties. Hotels with multi-story buildings will impact the surrounding area, settlements, protected areas, and groundwater availability, especially in dense urban areas.

Airbnb has contributed to providing tourist accommodation in the forms of renting an entire house, part of a house, or shared rooms similar to a hostel. In addition, various types of properties are also an option for tourists. Furthermore, the platform provides various other services, such as the availability of

amenities, workspace, user reviews, and accommodation selection support features to help users find suitable accommodation (Ert et al., 2016; Zervas et al., 2020).

Airbnb is an accommodation company that does not own a property. This company uses the concept of a sharing economy that utilizes assets belonging to an individual or community to be leased back. This company does not develop properties in Yogyakarta, but utilizes existing buildings for rent using a built platform.

Airbnb accommodations are different from starred hotels. These accommodations are similar to a non-star hotel, homestay, or villa, which attracts the market or target consumers that are very different from star hotels. Surveys that have been previously conducted to provide an overview of people's motivation to contribute to the sharing economy show that economic motivation is the primary preference compared to social and economic motivation (Böcker & Meelen, 2017). The user also owns the motivation compared to the provider. From its history, sharing economy platforms that enter Indonesia can offer lower prices than conventional platforms. Other sources state that the sharing economy is not a significant initiative but a culture that will continue to develop alongside technological developments (Light & Miskelly, 2015).

User preferences that differentiate between Airbnb accommodation users (based on sharing economy) and other accommodations are the interactions generated by accommodation owners. Analysis of content reviews by users of Airbnb accommodation in previous research in Yogyakarta (Musthofa, 2019) shows that the benefits gained are hospitality and interaction. Ikkala and Lampinen (2015) explain what motivates individuals to monetize network hospitality. Financial and social are the main reasons accommodation providers monetize network hospitality. The platform's flexibility is also why providers can select guests and control rental volumes in achieving the desired hospitality.

House rental in Yogyakarta has contributed to the provision of tourist accommodation. Even though from an occupancy perspective, it cannot optimally become an option for tourists, the potential is enormous. Renting home accommodations using the Airbnb platform has utilized home assets that may not function optimally. This activity can increase the supply of accommodation in Yogyakarta without having to build a specific building. The use of already available assets is very much in line with circular economy principles (Aldieri et al., 2021; Sposato et al., 2017), which seek to use assets that have been produced rationally. Various economic platforms are very likely to involve many participants, and this activity may also spill over to the economy (Bonciu & Bâlgăr, 2016), supposing this accommodation can meet the extensive needs of tourists. In that case, it is possible to impact the sustainability narrative (Palgan et al., 2016), even though it will have various impacts on the conventional hotel industry and urban spatial planning.

Conclusion

Renting accommodation through the Airbnb platform has enormous potential in Yogyakarta to meet the needs of tourists. The sharing economy concept is very much in line with the circular economy, which utilizes unused houses rented out in entirety or partially. Although the occupancy rate of this type of accommodation still needs to be improved, in terms of availability, the number of rooms provided is abundant. This amount will undoubtedly contribute to meeting the accommodation needs in Yogyakarta without having to build specific buildings for tourist accommodations.

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