**CASA0013: Foundations of Spatial Data Science**

**Executive Briefing of** **Impact of Airbnb on London's Tourism Economy**

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**Word Count:**

1. **Executive summary** 200-300 words
2. **Background** 300-400 words

Tourism can be regarded as an effective approach to promote national economic growth due to the positive impact on the overall economy (Comerio and Strozzi, 2019). Supply and demand of tourism dictate the existing prices in the tourism economy market (Zekan, Önder and Gunter, 2019). Various tourist consumers constitute the tourism demand groups, while a large range of stakeholders at the tourist destination are involved as tourism supply, including catering industry, accommodation sector and culture infrastructure (Zekan, Önder and Gunter, 2019). It is noticed that not only between the consumer side and stakeholder side, but also among the stakeholders are correlated, which all affect the success of consumption behavior.

Airbnb as an emerging accommodation option based on sharing economy, it is gradually overturing traditional hotel and hospitality industry (Boon, Spruit and Frenken, 2019). Such platform offers supplies and services at economical and appropriate prices through online platform, which could be more attractive to price-sensitive tourists, young people and families (Zekan, Önder and Gunter, 2019). With the rapid rising number of active platform users, new business pattern and industry structure have led to regulatory system gaps and legal grey area (Boon, Spruit and Frenken, 2019). The healthy development could be achieved when it is embraced not only by consumers, but also by other participants in the ecosystem, regulators and the whole society (Kenney *et al.*, 2019).

Long before Airbnb was established, legislation had been conducted by the Greater London Council in 1973 that short-term lets less than 90 days was prohibited for the purpose of balancing the lack of affordable housing with the demand for tourism (Ferreri and Sanyal, 2018). However, since Airbnb first stepped into the London market in 2012, the explosive growth created massive potential economy for tourism, government released the short-term rental regulation to a maximum of 90 days a year (Ferreri and Sanyal, 2018). Guttentag (2019) reviewed literature that Airbnb had no disruption on hospitality revenues within several areas and could be a supply of tradition accommodation, additionally high-quality Airbnb listings could increase attractiveness and competitiveness of travel destination (Zekan, Önder and Gunter, 2019). Researchers suggested that Canadian tourism sector maintained a positive perspective and encouraged industry innovation (Guttentag, 2019). In addition, more and more people nowadays tend to explore new places outside popular tourist destination, where sharing platform stimulate such situation (Stors, 2020). It is possible to increase the consumption of less popular areas, resulting in the promotion of the local tourism economy.

Therefore, the purpose of this data-driving analysis is to provide the positive evidence of Airbnb on London's tourism economy for the mayor of the Greater London Authority. It could be assumed that under the condition that a certain percentage of a tourist's money is spent locally, tourism revenues will boost the economy of the less tourist-oriented areas.

1. **Data Analysis** 400-500 words

To research the assumption, Python language is used to manipulate and visualize the data. Firstly, London borough boundary data (Data.london.gov.uk., 2020) and Middle Layer Super Output Area (MSOA) data ( Geoportal.statistics.gov.uk., 2011) were used to plot the London borough boundary map with MSOA layers (as shown in Figure 1). The plot was aimed at demonstrating subsequent distribution of culture infrastructure, Airbnb listings and hotel listings.

Icon, map

Description automatically generated

Figure 1 London boundary map

Then culture infrastructure data (Data.london.gov.uk., 2019) was applied for plotting the possible places that traveler might tend to visit, including museums, theatres, libraries etc., Figure 2 exhibited the distribution of these venues. It could be noticed that the places were mainly distributed in inner London, the closer to central London, the higher the density, and east inner side was slightly higher than west inner side. It revealed that areas with well-developed tourism economy were concentrated in central London, while industries within the surrounding areas need to be cultivated.

A map of the world

Description automatically generated with medium confidence

Figure 2 Culture infrastructure distribution map

Subsequently, the Airbnb data (Inside Airbnb., 2021) was used to map the Airbnb listings as shown in Figure 3, the same pattern could be observed as Figure 2, the Inner London occupied most of the listings, and the density reduced in the outer boroughs. It could also be deduced combining the Figure 2 that the large number of tourists are concentrated within these areas since there are more tourism venues located, and people tend to choose convenient housing for transportation.

Map

Description automatically generated

Figure 3 Airbnb listings distribution map

On the other hand, price was also a crucial factor affecting tourists' decision making. Figure 4 exhibited the distribution map of median price of Airbnb listings, while Figure 5 illustrated the median price for each borough. It could be observed from Figure 4 that the boroughs with highest prices were distributed in the east of inner London, the potential reason might be observed from Figure 2 that east side had more sites than west side.

In order to select one borough for further investigation, Figure 2 to 5 were combined together to investigate, and Camden was decided since the borough was close to central London and had the relatively low price comparing to other central boroughs, people might tend to choose this area as their residence. Besides, Figure 2 showed that there was density difference of the infrastructure between south and north of the borough, which might lead to quantity variance of living places.

Map

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Figure 4 Map of median price of Airbnb listings

Chart

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Figure 5 Bar chart of median price for each borough

(nomis - official labour market statistics., 2021)

Chart

Description automatically generated

Figure 6 Distribution of median price and listings in Camden

Chart

Description automatically generated

Figure 7 Quantitative distribution of hotel in Camden

1. **Conclusion** 300-400 words

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• Executive summary (summary of your briefing creating a summary of each of the

sections below, 200-300 words)

• Background (problem framing, 300-400 words)

• Data Analysis (description of the analysis, approach and results, 400-500 words)

• Conclusion (what was learned, limitations and what are your recommendations, 300-400 words)

• References (use the standard APA/Harvard-style referencing, does not count towards

word count)