

Role of Data Analytics in Business

Airbnb Predictive Model

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1 Introduction

In recent years with existing competitive marketing environment, many successful companies use Data Analytics to predict their customers' behaviors and trends, which help them to enhance their performance by producing the products and providing the services that are the most in demands. This poster illustrates the importance of Data Analytics in growth of businesses by drawing on related literatures and creating a predictive model to forecast the demand of a property on Airbnb.

2 Big Data and Data Analytics

Big Data leads to larger data sample, then more accurate result and analysis, which leads to better decisions. The growth in amount of data brings up this question that how companies manage to deal with this amount of ever-increasing data, which is called Big Data and the answer is Big Data analytics.

3 Role of information in decision making

The role of data analytics has changed from a technique to a strategic weapon to target business goals by providing good insights (Citroen, 2011). Businesses use that insights to judge and make decisions, which leads the companies to reduce uncertain decisions.

4 Airbnb Predictive Model

Datasets from Airbnb have been downloaded, listings.csv, which are accessible by public and includes 15 variables. Each dataset includes the list of the properties of a city on Airbnb. Firstly, the datasets have been tested to identify if there is a significant relation between number of the reviews for each property with room-type, neighborhood and price at $\alpha = 0.05$ level of significance. Then a predictive model by using SAS Enterprise Workstation is created, based on regression analysis, to forecast the demand of a property.

The result of the model shows that there is at least one significant variable in each city that affects the demand of a property; this significant variable is different in each city based on the characteristic of the city. For example, location is more significant in Barcelona rather than price, but in other cities such as Amsterdam, price is more significant. In some cities such as Milan, travelers prefer an entire home, but in other cities such as Amsterdam, travelers prefer one private room. Also, the R Squared is low, which indicates that the performance of the model is not good.

Further research has been done to find out if another researcher could create a predictive model for Airbnb properties. Keating et al. (2018) could create a model to forecast the price of each property and the model performed well. In addition, Keating et al. tried to create a model to forecast the number of the reviews for each property, but it was not successful.

5 Results and Conclusion

However, there is at least one significant variable in each city that affects the demand of a property, nevertheless this significant variable is different in each city. The reason for trip can affect the demand of the property too. If travelers are tourists then the location of the property is more significant rather than other factors, because they prefer to stay close to tourist attraction locations. Some travelers prefer to experience life of the local people, then they prefer to stay in entire home rather than private rooms. Hence, one unique model can't be used to forecast the demand of a property in different cities.

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