**Conjoint Analysis Project**

**Marketing Analytics**

**MAR 6936**

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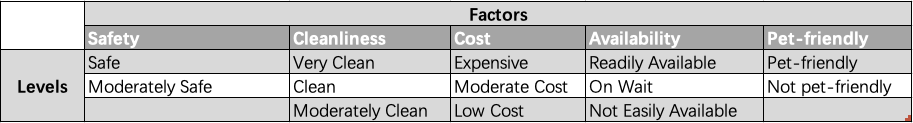
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**DESCRIPTION OF THE DATASET:**

Airbnb has gained tremendous popularity over the past few years. Travelers are increasingly choosing Airbnb over hotels for a variety of reasons, thus prompting us to choose Airbnb for our Conjoint Analysis project. Factors which we think that the travelers will take into consideration while selecting would be: **Safety, Cleanliness, Cost, Availability and Pet-friendliness.**

For **Safety**, we considered three levels: **Safe** and **Moderately Safe**. Considering travelers would not like to choose unsafe lodging, we chose not to add ‘**Unsafe**’ as a third level. Since the gamut for **Cleanliness** choices is very large, we chose three levels for this factor namely, **Very Clean, Clean** and **Moderately Clean**. Similarly, since budget considerations may vary from person to person, we considered three levels for **Cost** namely, **Expensive**, **Moderate Cost** and **Low Cost**. For **Availability**, we considered three levels, **Readily Available, On Wait** and **Not Easily Available.** The reason we chose **‘On Wait’** and **‘Not Easily Available’** is because some properties could be extremely popular with travelers, perhaps due to their locations and special services, and thus, may not be easily available. Additionally, some hosts require a lengthy background checks of travelers before approving the travelers’ stay. Finally, for **Pet-friendly** we chose two levels, **Pet-Friendly** and **Not Pet Friendly**. We chose this factor primarily because many travelers prefer to take their pets along and hotels are not commonly pet-friendly. So, it could be that a pet owner favors an Airbnb property to accommodate their furry animals. These factors and levels could generate a total of 108 profiles (2x3x3x3x2).



**Figure 1: Attributes and their chosen levels**

After using the Design for Conjoint Analysis feature in XLSTAT, we chose: **‘Designs for conjoint analysis (L12(2^(4) 3^(1) ) / Quarter factorial design’**  and generated **12 profiles** for the selected attributes. This design method eliminated **‘Low Cost’** and **‘Not Easily Available’** options from the list to get to the most optimally designed 12 profiles for our purpose of study. We are aiming to find as to which attributes are the most important to travelers and what combination of factors will be ranked the highest.



**Figure 2: Designs for conjoint analysis (L12(2^(4) 3^(1) ) / Quarter factorial design)**

Our target group consisted of a wide variety of undergraduate students at USF. Of the 120 respondents, 60% (72) were males and 40% (48) were females. The age range was between 18 and 40 with **Mean Age** of **28** and a **Median Age** of **24**. The respondents were extremely familiar with Airbnb and most of them claimed to have used it in the past two years. 100% of respondents had travelled in the past two years.

**RESULTS OF CONJOINT ANALYSIS:  
Utilities (Descriptive Statistics):**



**Table 1: Descriptive statistics of Utilities**

The above descriptive statistics indicate that travelers preferred **Safe** accommodations over **Moderately Safe**. **Very Clean** accommodations were the most preferred, followed by **Clean** while **Non-Clean** accommodations were not preferred. **Moderate Cost** was preferred in comparison to **Expensive**, indicating that Airbnb customers are price sensitive along with demanding high levels of Safety and Cleanliness. Travelers gave preference to properties that were **Readily Available** with no wait time. Respondents also were more likely to choose accommodations if they were **Pet-Friendly**. Preferred combinations:

1. Safe accommodation, Very Clean, Moderate Cost, Readily Available and Pet Friendly
2. Safe accommodation, Clean, Moderate Cost, Readily Available and Pet Friendly

**Importance of Attributes (Descriptive Statistics):**



**Table 2: Importance of Attributes**

The table above represents the importance of each attribute across the 120 respondents (Derived from the **Average Utilities** computation on the 120 respondents chosen). **Safety** has an importance/part worth of **33.1%** (Calculated as **Range of Safety values** across the 120 respondents / **Sum of the Range of (Safety, Cleanliness, Cost, Availability, Pet-friendly**) across the 120 respondents). On similar lines, **Cleanliness** is the second most important attribute with **24.43%**-part worth followed by **Availability, Cost** and **Pet Friendly** in that order and with respective **Attribute Importance/Part worth** values of **17.21%,** **16.84%** and **8.43%.**

**SENSITIVITY ANALYSIS USING MARKET GENERATION AND SIMULATION:**

**Scenario 1**



**Table 3: Simulated Market – 1**



**Table 4: Market Share – 1**

**In the above tables - 3** and **4**, the representation is of existing 3 products in the market, namely, **Product 1, Product 2** and **Product 3** and introduction of a new product namely, **Product 4** in the same market, amidst the competition. The results indicate that if the **Availability** attribute for the product being introduced, that is, Product 4 is, **‘On Wait’** along with it being **Safe, Clean, Moderate Cost** and **Pet-Friendly**, it will be able to capture a market share of **22.50%** based on the survey results from 120 respondents in question.

**The tables below – 5** and **6**, however, indicate that if the **Availability** attribute has value, **‘Readily Available’,** it will be able to capture a market share of **65%** with **Product 1** having the rest **35%** of the market share. **Product 2** and **Product 3** will be completely thrown out of the market (indicated by the **0%** market share in the simulation result!)

**Scenario 2**



**Table 5: Simulated Market - 2**



**Table 6: Market Share - 2**