



# **TravelTide**

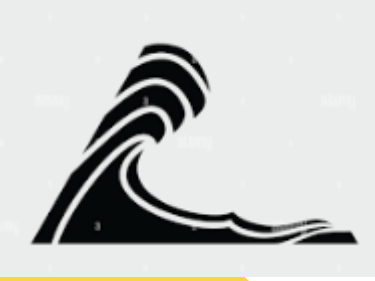
# **Customer Segmentation**

*An analysis by Lukas Rommel*

# Structure

---

1. Introduction/Background
2. Segmentation Methodology
3. Key Findings
4. Recommendations



# 1. Introduction/Background

---

- Booking startup TravelTide is a hot new player in the online travel industry (by customer feedback and industry analysis)
- **Weak point:** underdeveloped customer experience, therefore **poor customer retention**
- **Solution:** To keep more customers a **reward system** shall be applied
- Perks we can offer:
  - Free meal
  - Free checked bag
  - No Cancellation Fee
  - Exclusive Discounts
  - 1 Night free hotel with flight

## 2. Segmentation Methodology



- Who are the interesting users?



Users who had more then **6 Session** after **04.01.2023**  
(RECENT AND ACTIVE)



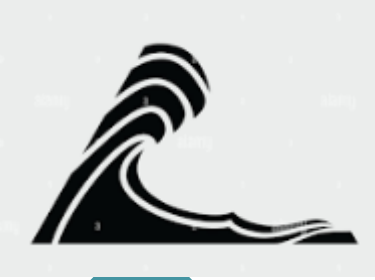
**24062 Users** in our database

To better understand users and apply perks we need to segment the users further!

## 2. Segmentation Methodology

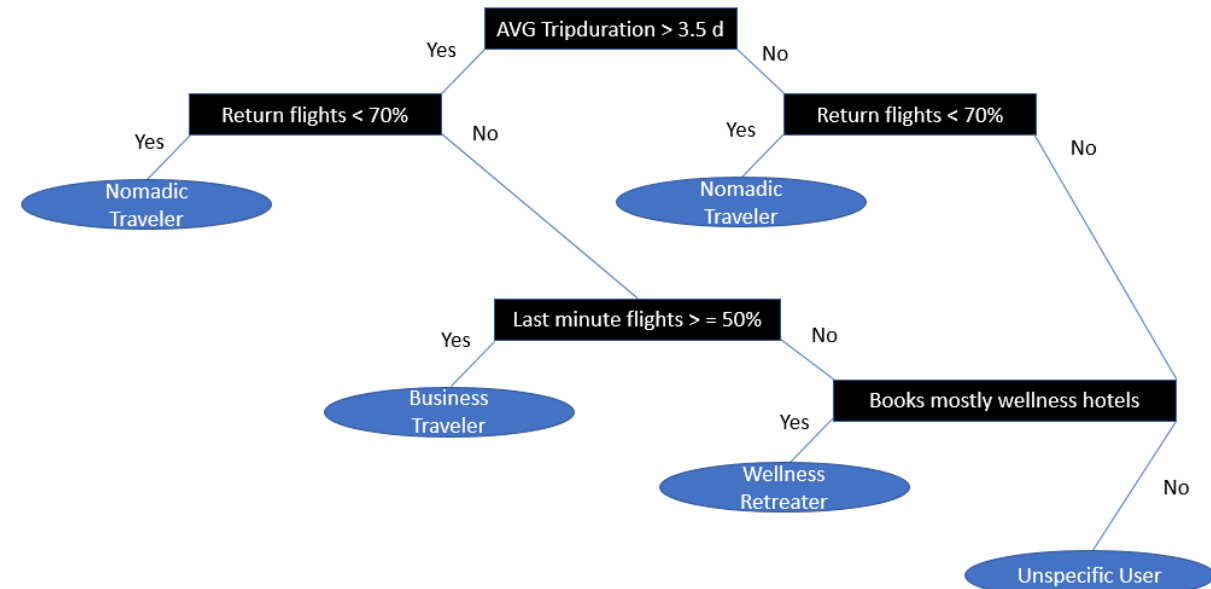
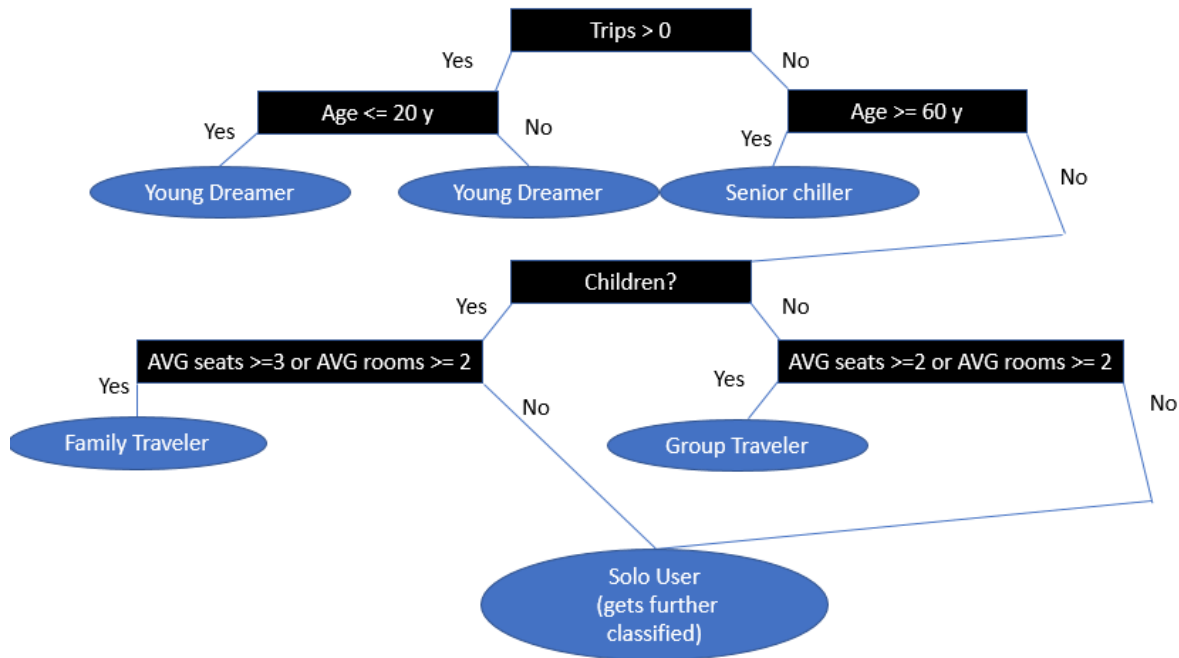
---

- **Decision Tree (Psychological theory approach)**
- **Machine Learning Approach (KMeans)**



# 2. Segmentation Methodology

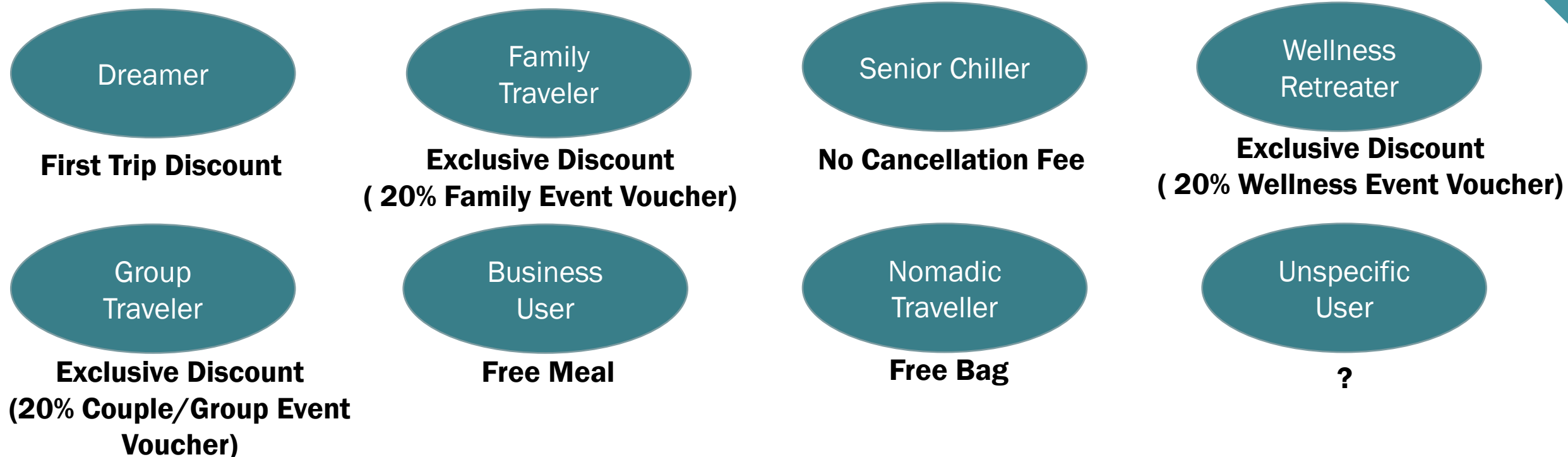
## 2.1 Decision Tree (Psychological theory approach)



Further Classification

## 2. Segmentation Methodology

### 2.1 Decision Tree (Psychological theory approach)





## 2. Segmentation Methodology

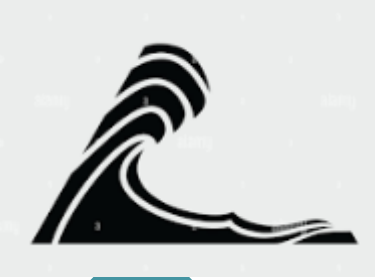
- **Machine Learning Approach (KMeans)**
- **Finds the mathematically correct segmentation based on certain metrics**
- **Metrics :**

**Has children, Age, Total sessions, Total cancellations, Total trips, Total flights booked, Total hotels booked, Total spent on flights, Total spent on hotels , Avg seats , Avg rooms , Conversion rate, Spending per trip, Percent return flights, Percent last minute trips**

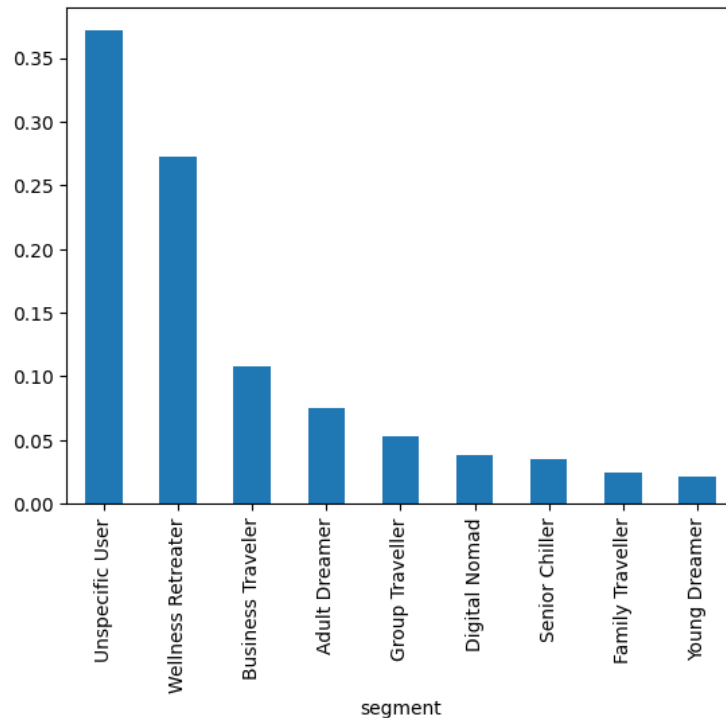
- **Segments need to be interpreted afterwards!**



# 3. Key Findings



## 3.1 Decision Tree (Psychological theory approach)

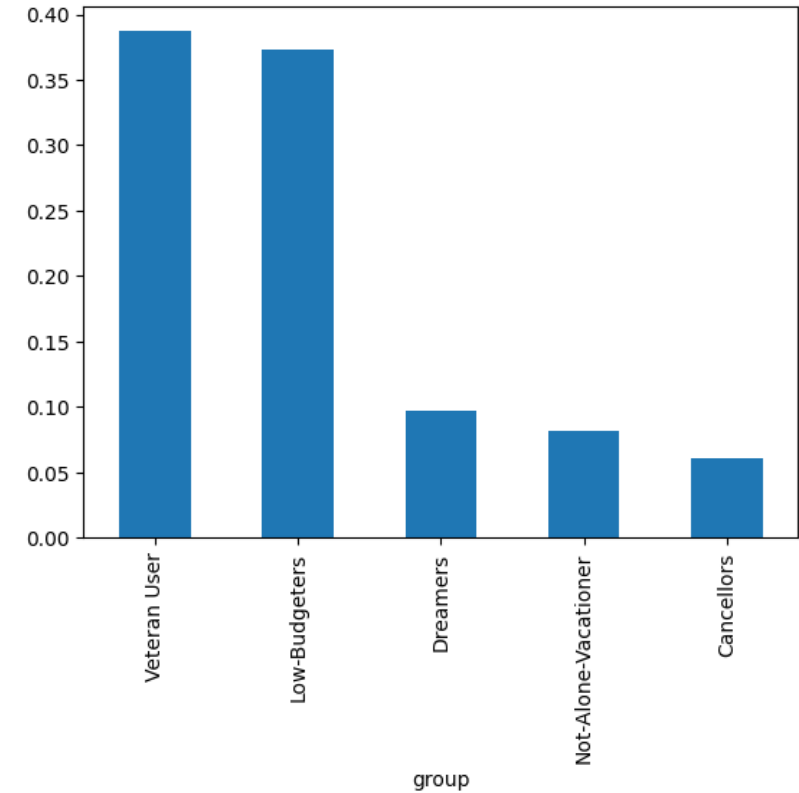
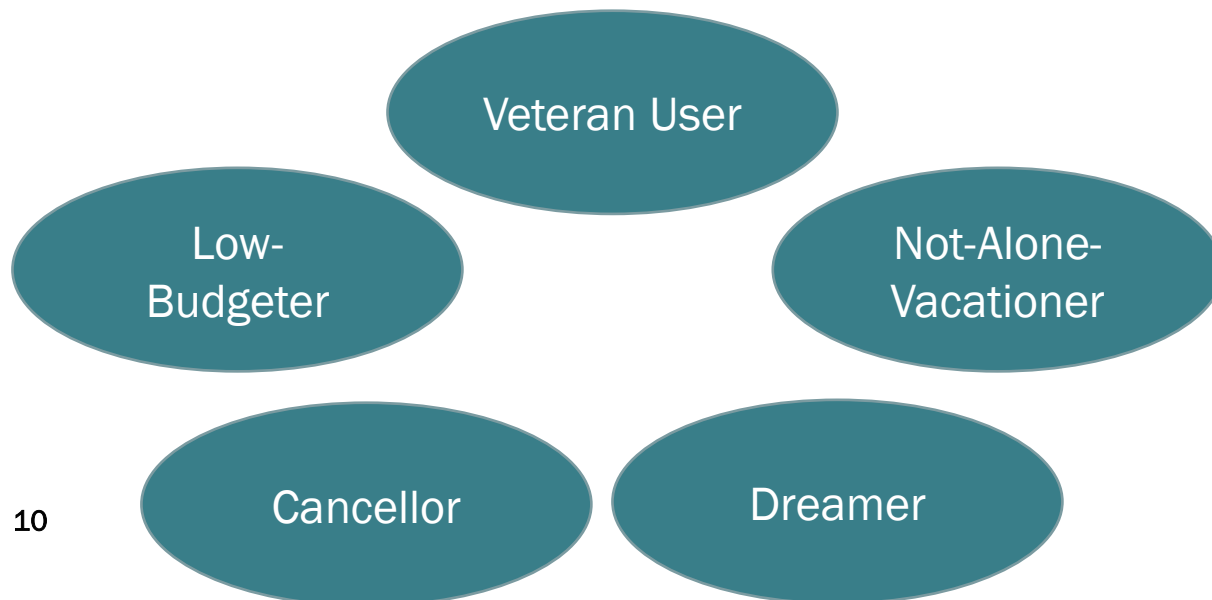


- **37% of users are unspecific**
- **Due to very strict segmentation**
- **ML approach will supplement this approach**

# 3. Key Findings

## 3.1 Machine Learning Approach (KMeans)

- Segments Found:



# 3. Key Findings

## The Low-Budgeter



- Books mostly just flight or hotel
- Travels alone
- Low spending per trip
- Low spending on flight and hotel



| Median       | C | T | nF | nH | \$F   | \$H    | S | R | CR % | \$T   | %RF | %LM  |
|--------------|---|---|----|----|-------|--------|---|---|------|-------|-----|------|
| Overall      | 0 | 2 | 2  | 2  | 713.7 | 1156.0 | 1 | 1 | 28.5 | 822.0 | 100 | 50.0 |
| Low-Budgeter | 0 | 2 | 1  | 1  | 435.5 | 720.0  | 1 | 1 | 28.5 | 767.2 | 100 | 50.0 |

**Perk: 5% Trip Discount**

C – Total Cancellations  
 T – Total Trips  
 nF – Number of Flights  
 nH – Number of Hotels  
 \$F – Spending on Flights  
 \$H – Spending on Hotels  
 S – Seats  
 R – Rooms  
 CR% – Conversion Rate in %  
 \$T – Spending per Trip  
 %RF – Percent of Return Flights  
 %LM – Percent of Last Minute Flights

# 3. Key Findings



- Hotel orientated
- Almost always travels with 2 or more persons
- VERY high spending per trip
- High spending on flight and hotel



## The Not-Alone-Vacationer

| Median               | C | T | nF | nH | \$F    | \$H    | S | R | CR % | \$T    | %RF | %LM  |
|----------------------|---|---|----|----|--------|--------|---|---|------|--------|-----|------|
| Overall              | 0 | 2 | 2  | 2  | 713.7  | 1156.0 | 1 | 1 | 28.5 | 822.0  | 100 | 50.0 |
| Not-Alone-Vacationer | 0 | 2 | 1  | 2  | 1109.2 | 2652.0 | 2 | 2 | 28.5 | 2214.7 | 100 | 33.3 |

**Perk: Free Bag**

C – Total Cancellations  
 T – Total Trips  
 nF – Number of Flights  
 nH – Number of Hotels  
 \$F – Spending on Flights  
 \$H – Spending on Hotels  
 S – Seats  
 R – Rooms  
 CR% – Conversion Rate in %  
 \$T – Spending per Trip  
 %RF – Percent of Return Flights  
 %LM – Percent of Last Minute Flights

# 3. Key Findings

## The Veteran User



- High number of trips
- High number of flights and hotels
- High spending on flight and hotel
- Doubled conversion rate
- High spending per trip



| Median       | C | T | nF | nH | \$F    | \$H    | S | R | CR % | \$T   | %RF | %LM  |
|--------------|---|---|----|----|--------|--------|---|---|------|-------|-----|------|
| Overall      | 0 | 2 | 2  | 2  | 713.7  | 1156.0 | 1 | 1 | 28.5 | 822.0 | 100 | 50.0 |
| Veteran User | 0 | 4 | 3  | 3  | 1267.8 | 1923.5 | 1 | 1 | 50.0 | 895.0 | 100 | 50.0 |

**Perk: Free Flight and Hotel Night on the 5th trip**

C – Total Cancellations  
T – Total Trips  
nF – Number of Flights  
nH – Number of Hotels  
\$F – Spending on Flights  
\$H – Spending on Hotels  
S – Seats  
R – Rooms  
CR% – Conversion Rate in %  
\$T – Spending per Trip  
%RF – Percent of Return Flights  
%LM – Percent of Last Minute Flights

# 3. Key Findings

## The Cancellers



- Very similar to the standard overall User
- Cancels half of the trips



| Median  | C | T | nF | nH | \$F   | \$H    | S | R | CR % | \$T   | %RF | %LM  |
|---------|---|---|----|----|-------|--------|---|---|------|-------|-----|------|
| Overall | 0 | 2 | 2  | 2  | 713.7 | 1156.0 | 1 | 1 | 28.5 | 822.0 | 100 | 50.0 |
| Group   | 1 | 2 | 2  | 2  | 601.2 | 979.2  | 1 | 1 | 28.5 | 844.0 | 100 | 50.0 |

Perk: No Cancellation Fee

C – Total Cancellations  
T – Total Trips  
nF – Number of Flights  
nH – Number of Hotels  
\$F – Spending on Flights  
\$H – Spending on Hotels  
S – Seats  
R – Rooms  
CR% – Conversion Rate in %  
\$T – Spending per Trip  
%RF – Percent of Return Flights  
%LM – Percent of Last Minute Flights

# 3. Key Findings

## The Dreamer

*Actually pre defined group,  
not included in the ML-  
Algorithm!*



**Never booked a trip**

**Perk: Exclusive Discount on first trip**



# 3. Key Findings



## 3.3 Cross Validation

| segment              | Adult Dreamer | Business Traveler | Digital Nomad | Family Traveller | Group Traveller | Senior Chiller | Unspecific User | Wellness Retreater | Young Dreamer |
|----------------------|---------------|-------------------|---------------|------------------|-----------------|----------------|-----------------|--------------------|---------------|
| group                |               |                   |               |                  |                 |                |                 |                    |               |
| Cancellers           | 0             | 198               | 57            | 39               | 75              | 58             | 624             | 420                | 0             |
| Dreamers             | 1811          | 0                 | 0             | 0                | 0               | 0              | 0               | 0                  | 523           |
| Low-Budgeters        | 0             | 1428              | 295           | 91               | 240             | 555            | 3769            | 2612               | 0             |
| Not-Alone-Vacationer | 0             | 5                 | 32            | 462              | 868             | 149            | 249             | 190                | 0             |
| Veteran User         | 0             | 970               | 532           | 10               | 92              | 81             | 4296            | 3331               | 0             |



# 4. Recommendations



| segment              | Adult Dreamer               | Business Traveler                                 | Digital Nomad                            | Family Traveller                                  | Group Traveller                                   | Senior Chiller                           | Unspecific User                          | Wellness Retreater                          | Young Dreamer               |
|----------------------|-----------------------------|---|--|---|---|--|--|---|-----------------------------|
| group                |                             |   |  |   |   |  |  |   |                             |
| Cancellers           |                             | No Cancellation Fee OR Free Meal                  | No Cancellation Fee or Free Bag          | 20% Family Event Discounts or No Cancellation Fee | 20% Group/Couple Event Discounts or No Cancell... | No Cancellation Fee                      | No Cancellation Fee                      | 20% Wellness Voucher or No Cancellation Fee |                             |
| Dreamers             | 20 % Discount on first trip |   |  |   |   |  |  |   | 30 % Discount on first trip |
| Low-Budgeters        |                             | 5% Trip Discount OR Free Meal                     | 5% Trip Discount or Free Bag             | 20% Family Event Discounts or 5% Trip Discount    | 20% Group/Couple Event Discounts or 5% Trip Di... | No Cancellation Fee or 5% Trip Discount  | 5% Trip Discount                         | 20% Wellness Voucher or 5% Trip Discount    |                             |
| Not-Alone-Vacationer |                             | Free Flight and Hotel Night (5th flight) OR Fr... | Free Flight and Hotel Night (5th flight) | Free Flight and Hotel Night (5th flight)          | Free Flight and Hotel Night (5th flight)          | Free Flight and Hotel Night (5th flight) | Free Flight and Hotel Night (5th flight) | Free Flight and Hotel Night (5th flight)    |                             |
| Veteran User         |                             | Free Bag OR Free Meal                             | Free Bag                                 | 20% Family Event Discounts or Free Bag            | 20% Group/Couple Event Discounts or Free Bag      | No Cancellation Fee or Free Bag          | Free Bag                                 | 20% Wellness Voucher or Free Bag            |                             |

# 4. Recommendations

## Summary

- **This was just a first approach on a limited data foundation!**
- **For the users, two different segments can be applied since there are two approaches which have different angles of view**
- **Users can get an offer based on one of these two**
- **To know which of the two works better in general – AB-testing should be applied in the future**
- **There are a lot of Veteran Users! Since A free flight with hotel is a pricy perk, it only should be applied on the 5<sup>th</sup> trip with us! (From a psychologists view: After 5 bookings and this kind of a perk, most customers will develop a routine and are emotionally bound to us. This perk also motivates users near 5 Bookings to keep booking and unconsciously strengthen the bond!)**

# **Thank you!**

