

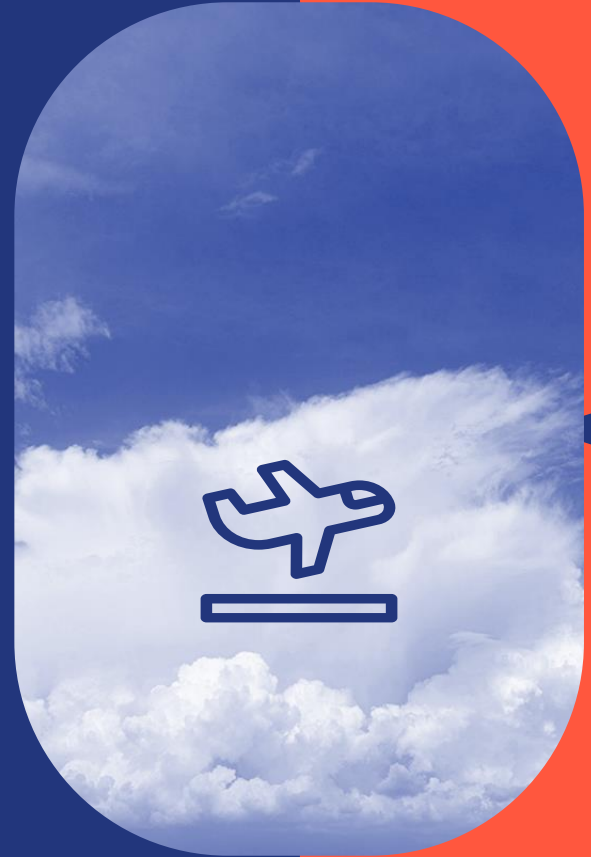


customer segmentation FOR XYZ AIRLINES

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BUSINESS PROBLEM

- XYZ Airline is directly rivaled by large national airline companies and **competitive pricing alone is not sufficient** to stay afloat.
- Not enough time or resources have been invested in validating and **developing customer profiles**.
- **Lack of customer knowledge** significantly hampers XYZ's digital marketing and advertising efforts.
- **Brand loyalty is low**, small proportion of customers have enrolled in the UFly Rewards Program.



WHY CLUSTERING

- Historical data on XYZ's customers can be harnessed to get a better understanding on the clientele.
- A better understanding of the customers will help XYZ refine its marketing and expansion strategies.
- Through clustering, we want to identify clear, distinguishable segments of customers and use their characteristics to provide insights and recommendations

BLUEPRINT



EDA

Conducting a detailed exploratory data analysis to understand the dataset

Preliminary FINDINGS

Deriving insights from the raw data using the initial EDA

CLUSTERING

Clustering the data to identify various customer segments

INSIGHTS

Deriving insights from the clusters

RECOMMENDATIONS

Providing recommendations based on insights and preliminary findings

DATA CLEANING



Data Filtering: Filtering for only relative data



Null values: “NA” values in will be replaced by 0 for int and ‘none’ for strings



Anomalies: Replacing anomalies in data like 15k entries having ages out of normal range with the mean



Modification of data types: Data types modified wherever required for eg. date columns



CLUSTERING APPROACHES



K-Means



Gaussian Mixture Model



K-Prototypes



K-Medoids

We preferred Gaussian Mixture Model because it is computationally efficient and captures most information among all clustering models.



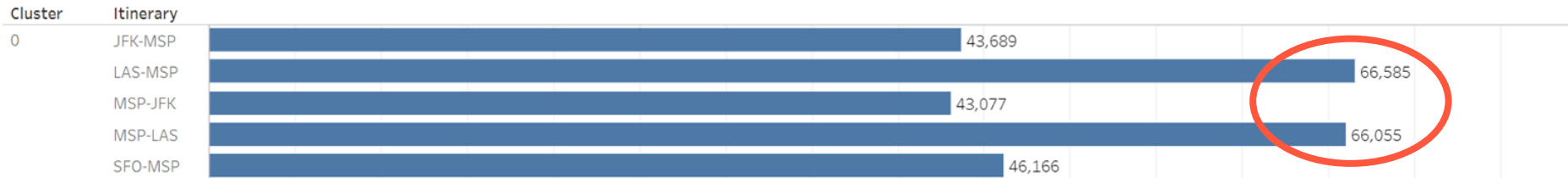
CLUSTERS



Cluster 0: Average Customers

Cohort size: 48%

- Book 2 months in advance on average
- 20% of them are members
- No multi city trips
- 50% of trips are from/to Vegas



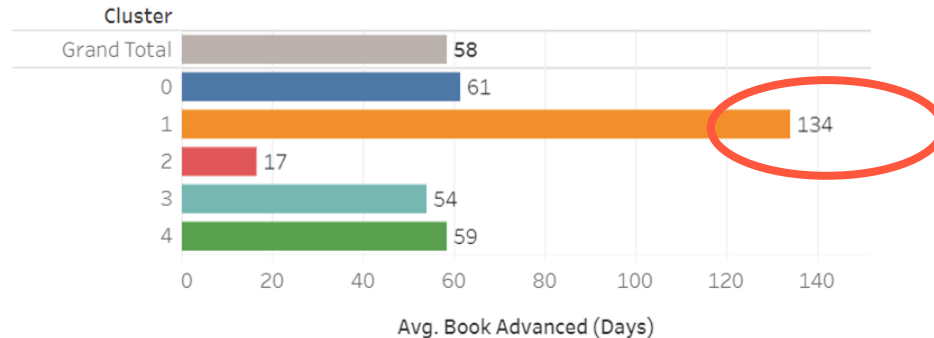
CLUSTERS



Cluster 1: Advance Bookers

Cohort size: 1%

- Book well in advance (4-5 months)
- Book through reservation booking
- Book the most tickets (62%) between July to December but to fly between Jan to March



The number of days the customers in Clusters booked tickets in advance. Cluster 1 has the maximum number of 134 days.

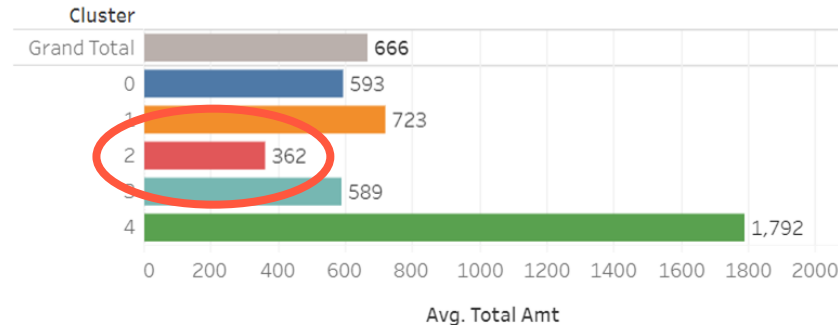
CLUSTERS



Cluster 2: Last-minute bookers:

Cohort size: 0.4%

- Book tickets spontaneously
- Book only at airports
- Per person expenditure is the lowest (\$362)



The average amount of dollars spent by a person in the cluster through the 2 years

CLUSTERS



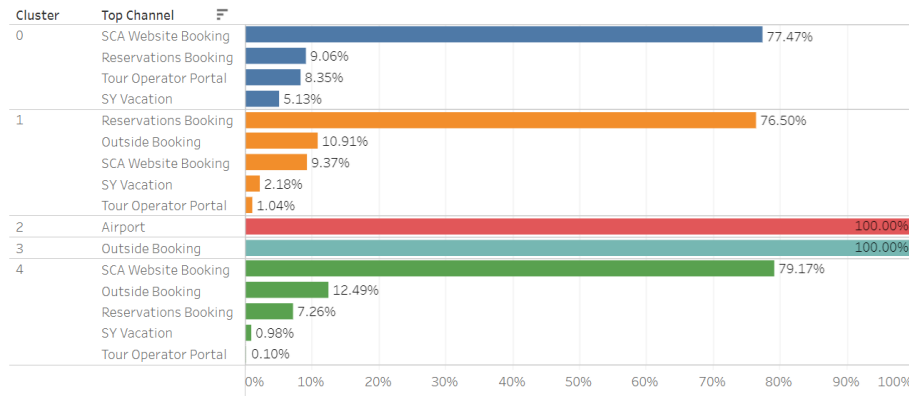
Cluster 3: Price Sensitive Bookers

Cohort size: 44.4%

- Mostly Non-members (93%)
- Book through external websites only



Top Channel by Cluster



All bookings in Cluster 3 are from external websites

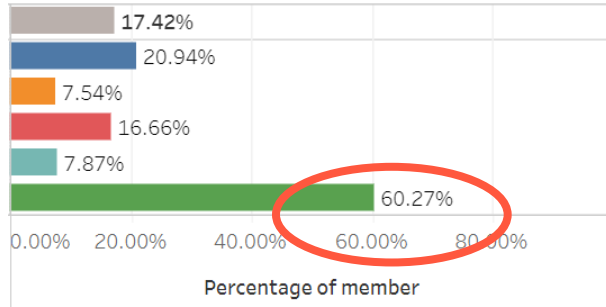
CLUSTERS



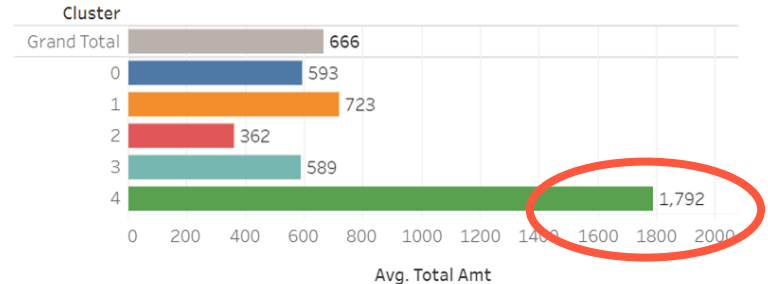
Cluster 4: Frequent travellers:

Cohort size: 6.2%

- Members & card holders
- Highest frequency of trips among all clusters
- Book only through SCA website
- Per person expenditure is the highest (~\$1800).



60% of customers in Cluster 4 are members

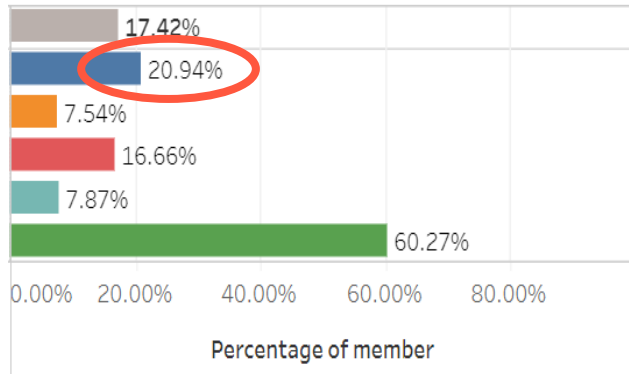
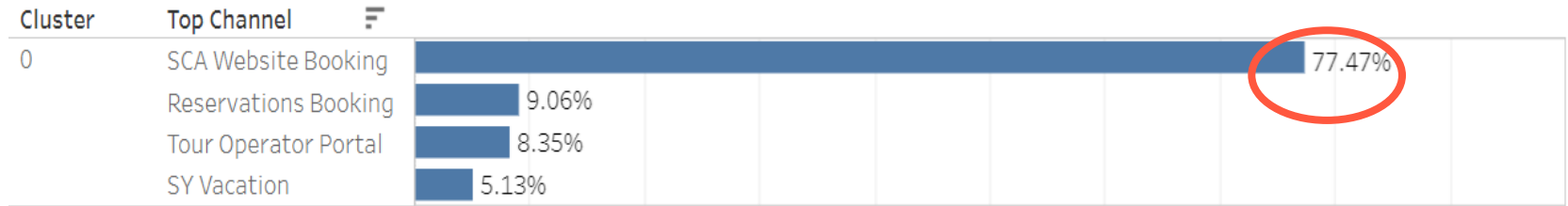


The average amount of dollars spent by a person in the cluster through the 2 years

RECOMMENDATIONS

Cluster 0: Average Customers

Top Channel by Cluster

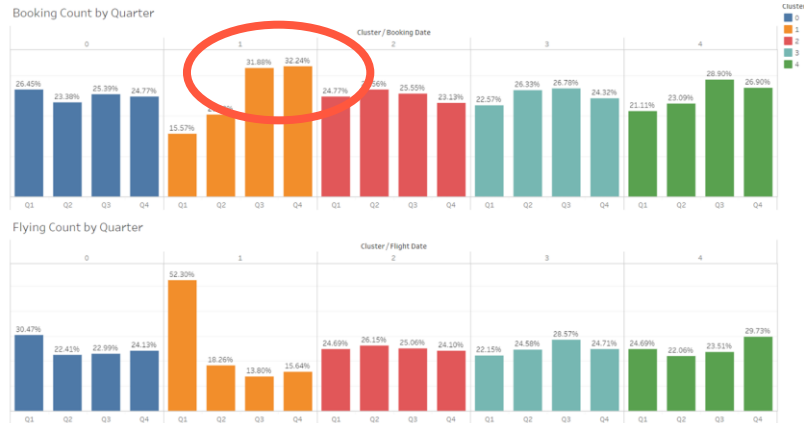


Since almost 80% of people book through XYZ website but just 20% of them are members, we can **incentivize converting to UFly Membership** by offering sign up discounts during checkout.

The XYZ website should have advertisement banners promoting its rewards programs.

RECOMMENDATIONS

Cluster 1: Advance Bookers

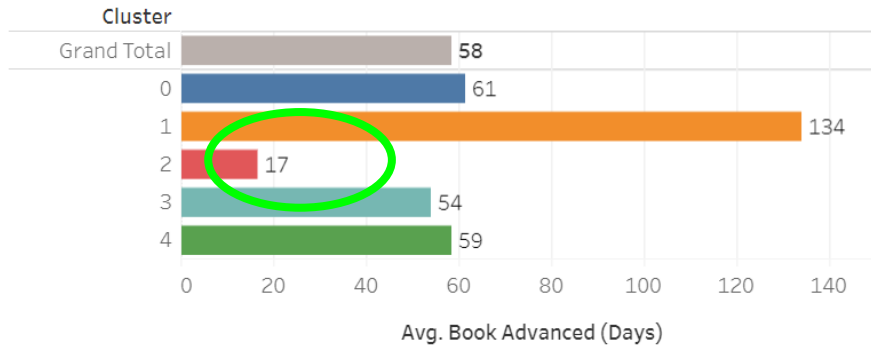


Create a **sense of urgency**, these customers like to research and a time constraint might drive their decision.

RECOMMENDATIONS

Cluster 2: Last-minute bookers:

Avg Book Advanced by Cluster

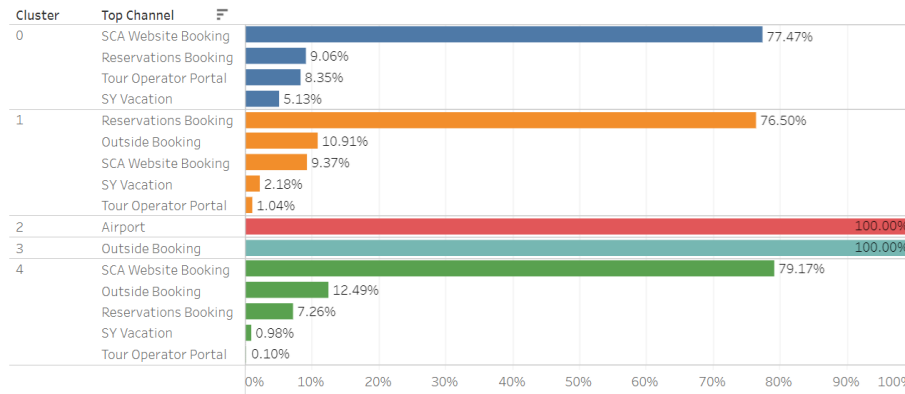


Due to time constraints of booking tickets at the airport these customers have low bargaining power. Prices at the airport can be **marked up and discounts should not be offered.**

RECOMMENDATIONS

Cluster 3: Price Sensitive Bookers

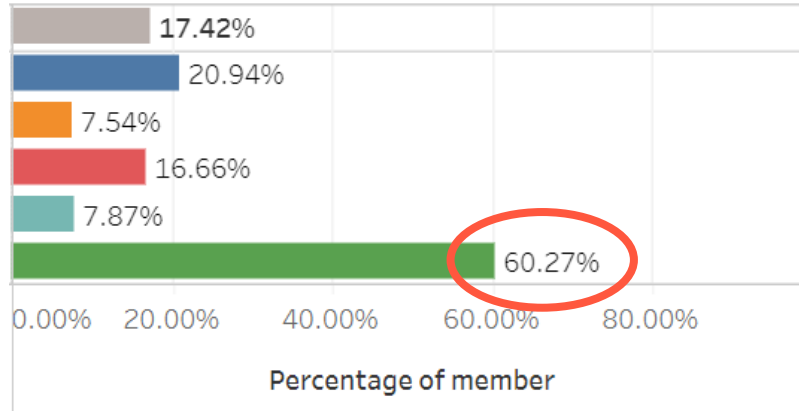
Top Channel by Cluster



These customers who book via external websites, should be **offered benefits upon enrolling in the UFly program**. They can be targeted through e-mail communication; benefits could involve receiving discounted rates in the long term.

RECOMMENDATIONS

Cluster 4: Frequent Flyers



Offer seat upgrades and rewards for frequently flying customers to increase overall satisfaction and cement their loyalty to XYZ Airlines.

Use their loyalty to increase reach by giving **referral bonuses** when they tell friends and family about XYZ.

GENERAL RECOMMENDATIONS

- Points received from booking via **SCA website should be higher** than if booked through external websites.
- The **sign up process** for the UFly rewards program should be **simplified**. Customers that book through external channels should be notified of the existence and benefits of the rewards program through emails.
- UFly Rewards program should have different **membership tiers**, customers in a higher tier should receive more points. This would encourage even price sensitive customers to stay loyal to SCA.
- Points can be **redeemed to get benefits** such as upgrades, free seat selection and move bookings.



THANK you