REPORT BY AMNA BIBI

Business Intelligence Case Study: FlyingWhale Airline

Background:

FlyingWhale Airline, a prominent (fictional) international airline, is seeking to enhance its business intelligence capabilities by analyzing Customer Flight Activity and Customer Loyalty History. The airline is committed to optimizing customer experience, understanding travel patterns, and maximizing the effectiveness of its loyalty programs.

DATASETS:

Customer Flight Activity:

• Loyalty Number: A unique identifier for each customer's loyalty account.

• Year and Month: Period details for analysis.

• Flights Booked: Number of flights booked by the member during the period.

• Flights with Companions: Number of flights booked with additional passengers.

• Total Flights: Combined total of Flights Booked and Flights with Companions.

• Distance: Flight distance traveled in kilometers during the period.

• Points Accumulated: Loyalty points earned in the period.

• Points Redeemed: Loyalty points redeemed during the period.

• Dollar Cost Points Redeemed: Dollar equivalent for points redeemed in Canadian Dollars (CDN).

2. Customer Loyalty History:

• Loyalty Number: A unique identifier for each customer's loyalty account.

• Demographics: Country, Province, City, Postal Code, Gender, Education, Salary, Marital Status.

• Loyalty Card: Current loyalty card status

• Customer Lifetime Value (CLV): Total invoice value for all flights ever booked by the member.

• Enrollment Details: Enrollment Type (Standard / 2018 Promotion), Enrollment Year, Enrollment

Month.

• Cancellation Details: Cancellation Year and Month if applicable

DATA CLEANING:

Both the datasets were cleaned and checked for errors then a new table was created for better

understanding namely Customer Loyalty Cancellation.

FlyingWhale Airline Business Intelligence Report:

Monthly and Yearly Flight Booking Patterns:

The analysis of monthly and yearly flight booking patterns reveals the following insights:
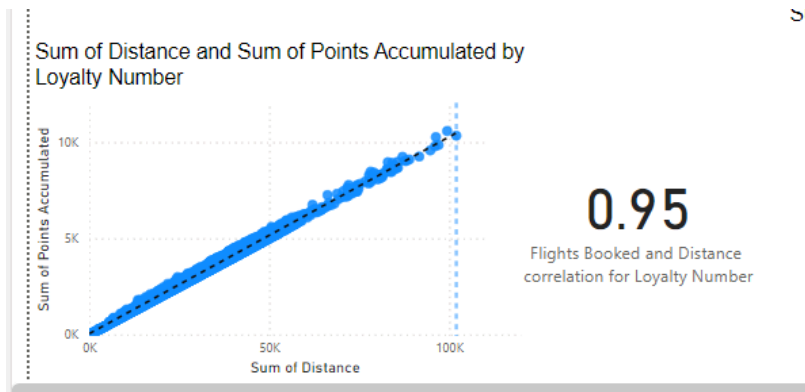
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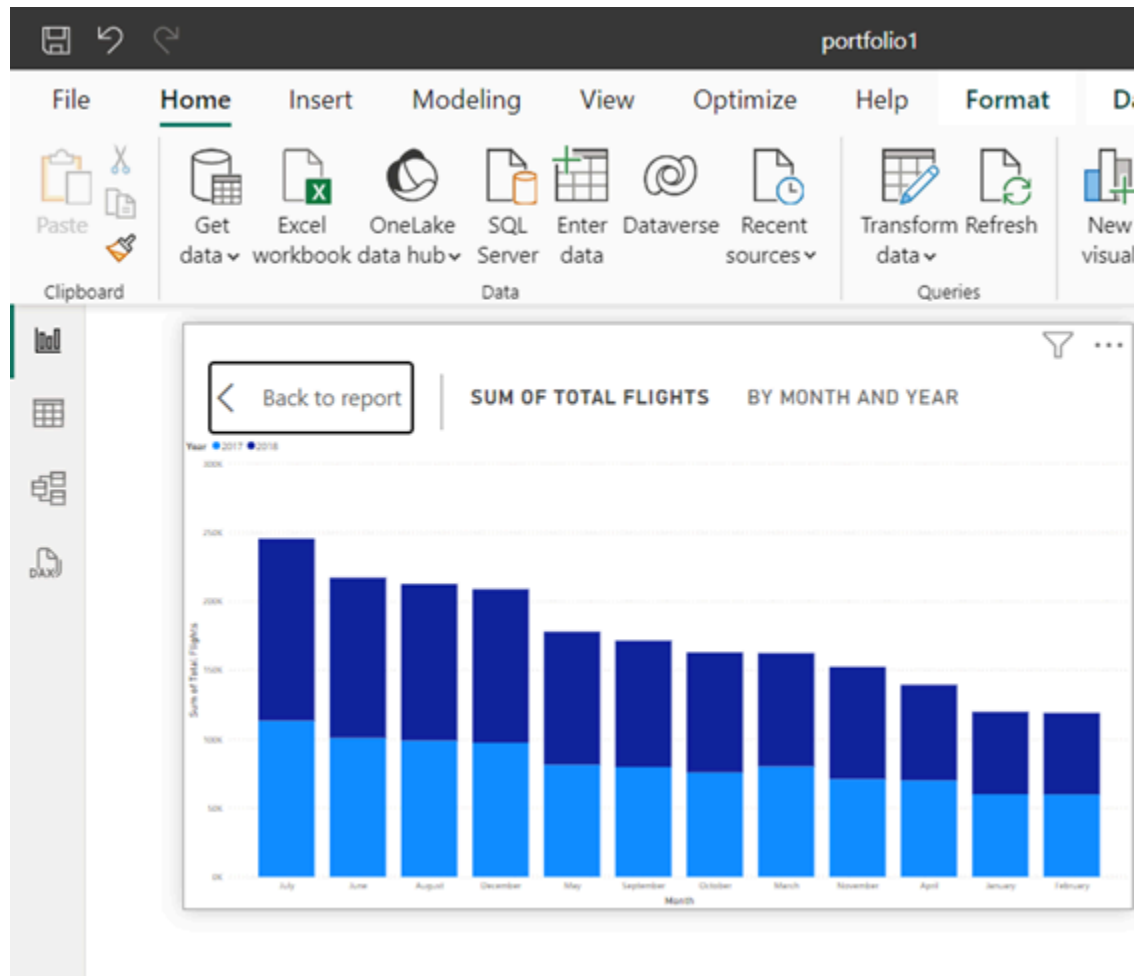
The busiest months for flight bookings are July and August while the least busy are February.

Correlation between Flight Distances and Loyalty Points Accumulated:

Sum of Distance and Sum of Points Accumulated by Loyalty Number

0.95

Flights Booked and Distance correlation for Loyalty Number

There is a positive correlation between flight distances and loyalty points accumulated. As the distance traveled increases, the loyalty points accumulated also increases.

**Impact of Companion Bookings on Loyalty Points Redeemed:**
Analysis reveals that there is a significant impact of companion bookings on loyalty points redeemed.
The number of companions where members are redeeming the most points is 3

Sum of Points Redeemed by Flights with Companions
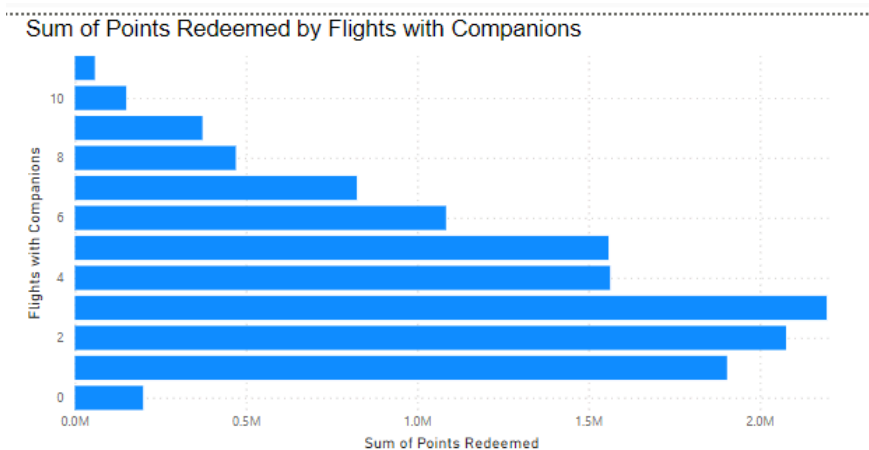
Sum of total flights by year:

Sum of Total Flights by Year

Year
- 2017
- 2018
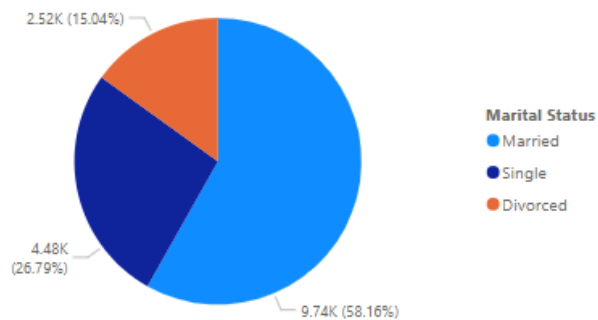
1M (47.3%)
1M (52.7%)
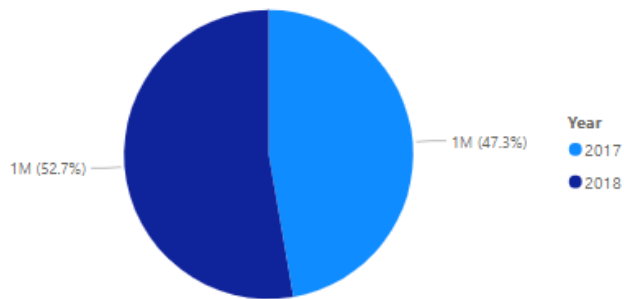
Loyalty Segmentation:

DEMOGRAPHICS & BEAHVIOUR ANALYSIS:

1. Marital Status:
Most of the loyalty members are married.

Count of Loyalty Card by Marital Status

2.52K (15.04%)

Marital Status
- Married
- Single
- Divorced

4.48K (26.79%)

9.74K (58.16%)

Gender:
Most of the loyalty members are male.

Loyalty Card	Gender	Sum of Total Flights
Star	Female	470058
Star	Male	479982
Nova	Female	357398
Nova	Male	348769
Aurora	Female	214469
Aurora	Male	217013
Total		**2087689**

Median Distance Traveled by Different Loyalty Card Tiers:

The visualization shows the median distance traveled by customers belonging to different loyalty card tiers, highlighting potential differences in travel behavior among tiers .
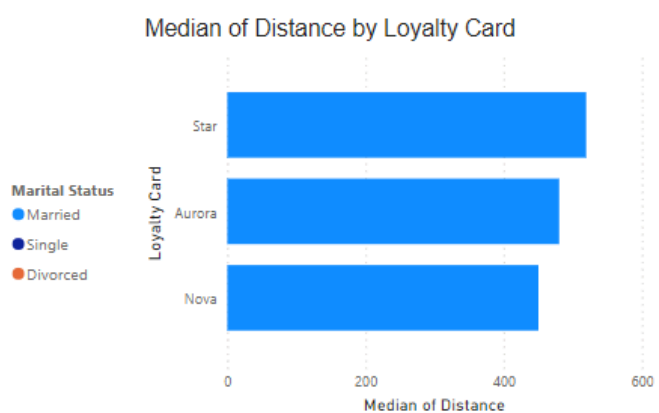
Average of clv by loyalty card:
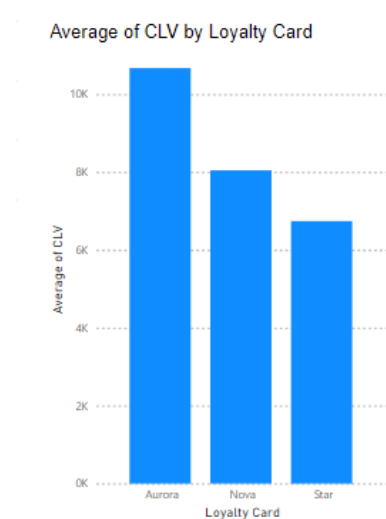
Loyalty card; Aurora has the highest average.

Enrollment and Cancellation Trends:

Reasons and Patterns behind Membership Cancellations:
A table "Customer Loyalty Cancellation" is provided for loyalty members that have cancelled, including information on enrollment duration.
Two new columns, "Enrollment Duration (Till Date)" and "Enrollment Duration (Till Date) Months," are added to track the duration of enrollment.

Insights on Membership Cancellations:

Average Duration of Enrollment by Province:
This visualization depicts marital status and education of members that cancel the most**.**
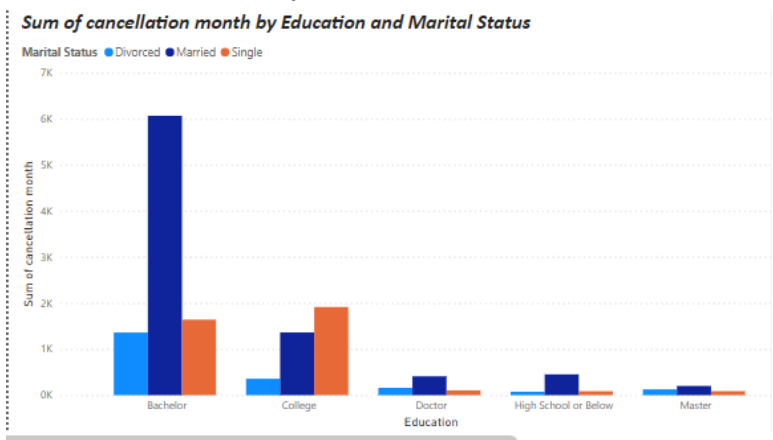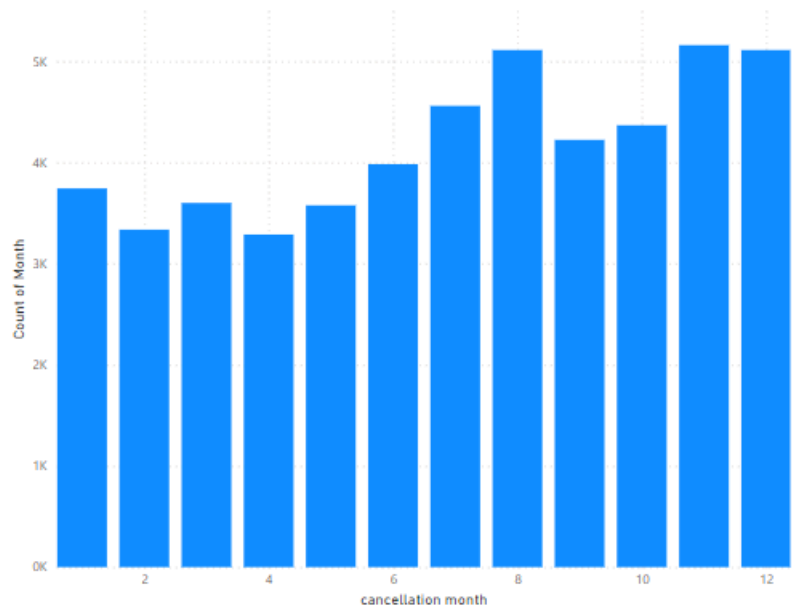

Members whose Education is Bachelor and marital status are married has the highest number of cancellation.
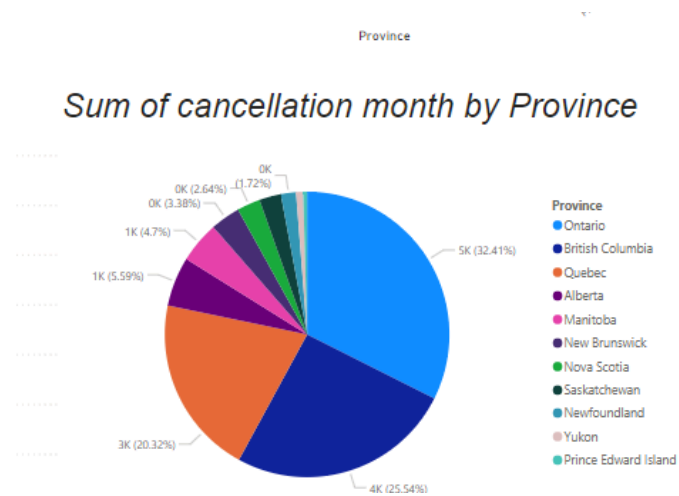
Popular Months for Cancellations:
Month 8 which means August is the most popular month with the highest number of cancellations.

Count of Month by cancellation month

sum of cancellation by province:
Ontario has the highest number of cancellation.

Province

Sum of cancellation month by Province

Province
● Ontario
● British Columbia
● Quebec
● Alberta
● Manitoba
● New Brunswick
● Nova Scotia
● Saskatchewan
● Newfoundland
● Yukon
● Prince Edward Island

Average of enrollment duration year by province:
Province new brunswick has highest Average of enrollment duration year

Average of enrollment duration year by Province
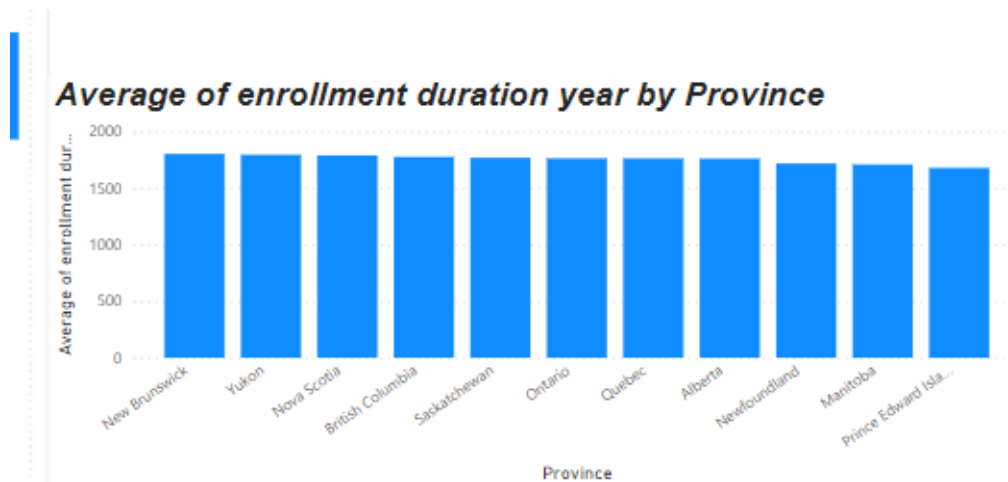
Recommendations for Improving Enrollment and Retention:

Partner with hotels, car rental agencies, and restaurants to offer special discounts exclusively for our loyalty program members. Enjoy savings on accommodations, transportation, and dining, making your travel experience even more rewarding.
Give VIP treatment to customer support lines just for loyalty members. Quickly solve any questions or issues, giving personalized help whenever customers need it.
Offer flexible membership options to accommodate changing travel needs and Preferences.

CONCLUSION:

The insights generated from the analysis of customer flight activity and loyalty history provide valuable information for FlyingWhale Airline to optimize its business intelligence capabilities, enhance customer experience, and maximize the effectiveness of its loyalty programs. By leveraging these insights, FlyingWhale Airline can make data-driven decisions to drive growth and improve customer satisfaction.