

# Air Canada Customer Review Analysis

INSY 669: Text Analytics

## Group 5:

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# Introduction to the business: Air Canada

## Air Canada Overview



Founded in 1937,  
Largest Domestic and  
International airline in  
Canada

Provides services in  
more than 200 airports  
on 6 different  
continents

Air Canada hubs:  
Toronto, Vancouver,  
Montreal, Calgary

Mission & Vision:  
Connecting Canada and  
the world through  
passion and innovation

What insights can we get from  
customers feedback to improve  
flights services?

### Air Canada Customer Reviews

Food & Beverages



Inflight Entertainment



Seat Comfort



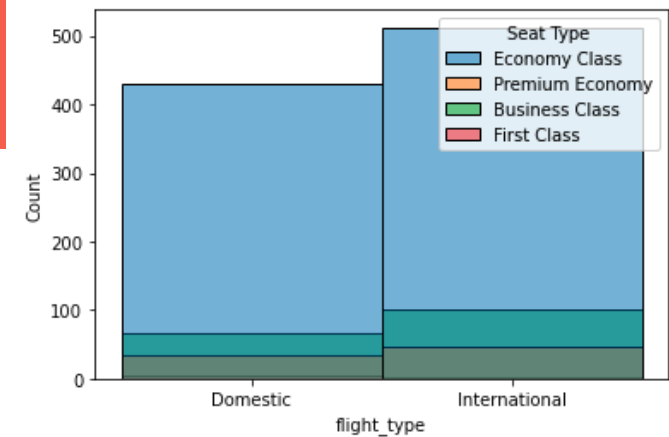
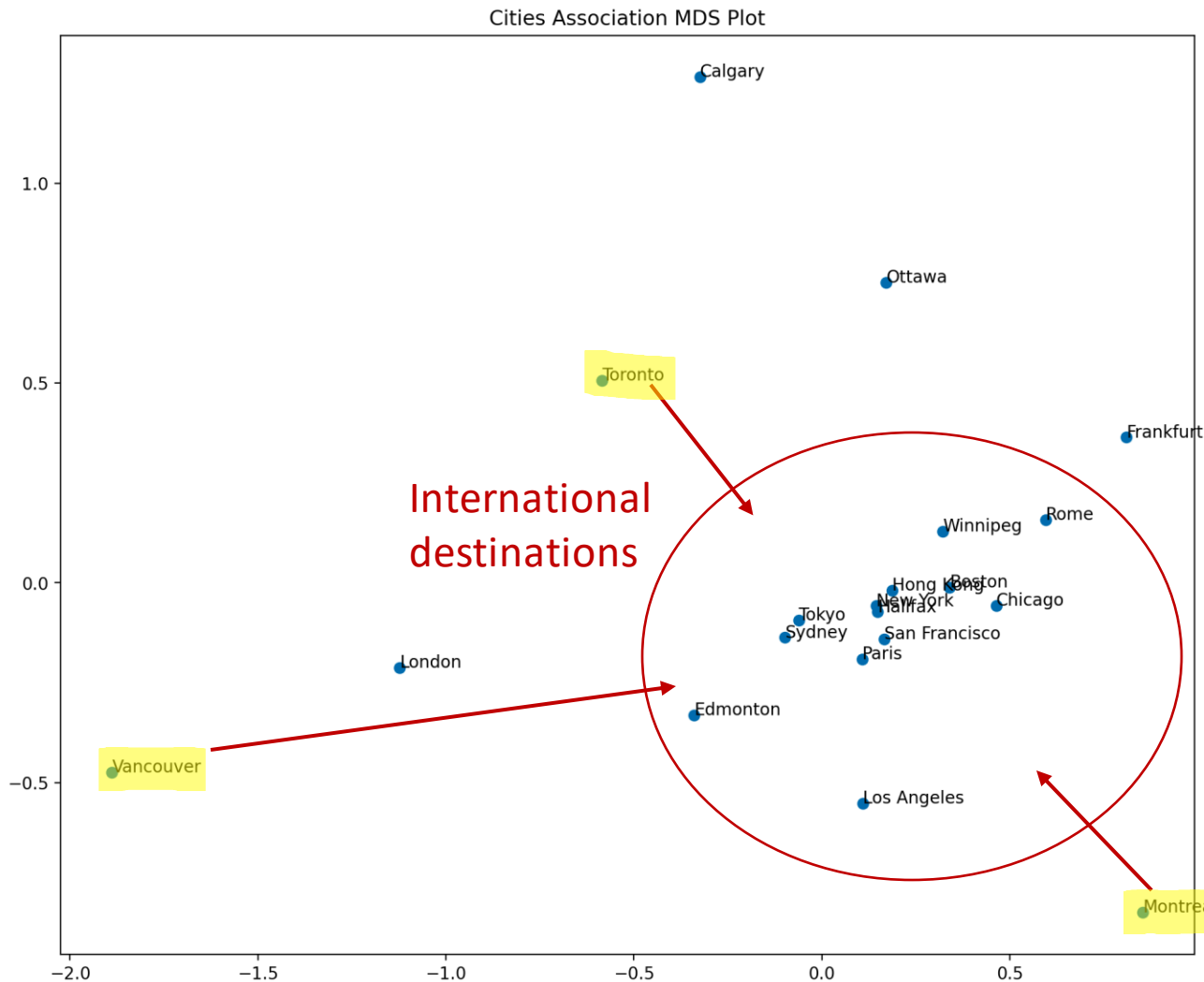
Staff Service



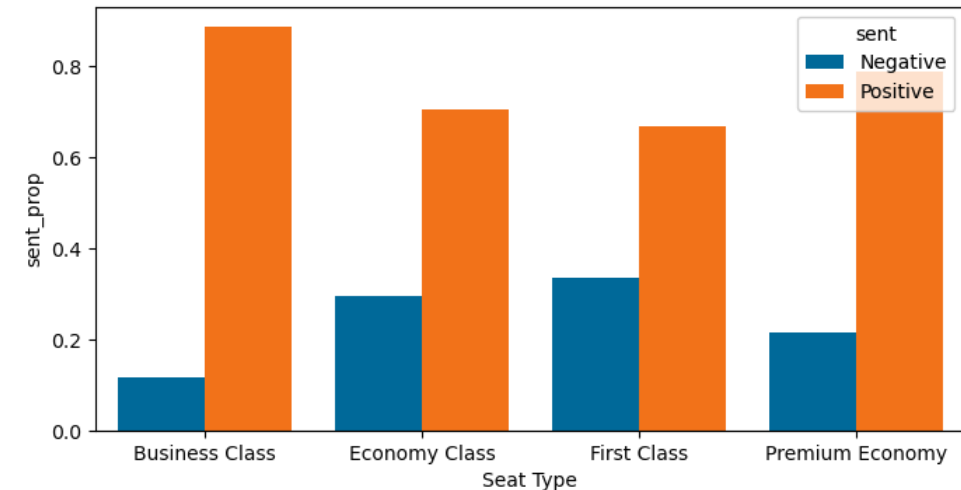
Value for Money



# Route: Lift, MDS and Sentiments



- Top 20 mentioned cities in reviews
- Mix of domestic and international flights
- International routes are more diverse while domestic routes are more saturated
- People are more unsatisfied about direct flights



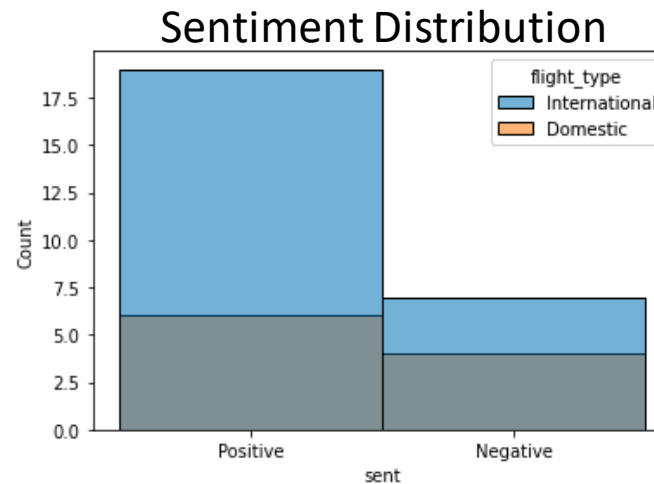
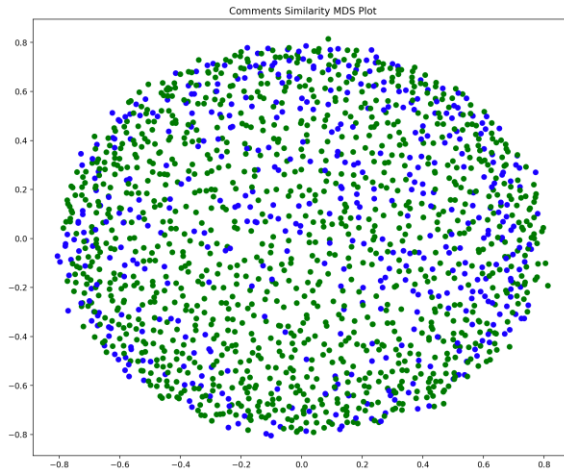
\*Appendix 1,2

# Review Cosine Similarity

- There is no clear identification between positive and negative sentiment based on cosine similarity.
- This might be caused by reviews are concentrated on a few topics; customers reflect to it either in a positive or negative way. (e.g. service, delay)
- This might also be caused by MDS not being the best way visualizing cosine similarity here.

Based on cosine similarity  $> 0.15$ , we find the most similar comments from all reviews and find their characteristics.

City	Counts
Toronto	20
Vancouver	8
Montreal	6
Edmonton	3
Las Vegas	2



## Top 5 mentioned keywords

Customer Service

Line

Hour

Luggage

Time

# Topic Modeling – Review Titles

## Word cloud of Reviews' Titles



## Topics

```
[ (0,
  '0.023*"crew" + 0.018*"cabin" + 0.018*"hours" + 0.015*"good" + '
  '0.012*"disappointed" + 0.011*"friendly" + 0.010*"food" + 0.008*"delayed" + '
  '0.008*"luggage" + 0.008*"get"'),
  (1,
    '0.039*"experience" + 0.025*"good" + 0.021*"staff" + 0.013*"attendants" + '
    '0.011*"pleasant" + 0.011*"seats" + 0.010*"luggage" + 0.010*"comfortable" + '
    '0.009*"never" + 0.009*"overall"'),
    (2,
      '0.026*"delayed" + 0.018*"seat" + 0.018*"cancelled" + 0.014*"airline" + '
      '0.014*"uncomfortable" + 0.013*"time" + 0.010*"flights" + 0.010*"hour" + '
      '0.010*"extremely" + 0.010*"helpful"'),
      (3,
        '0.026*"worst" + 0.020*"experience" + 0.018*"terrible" + 0.018*"airline" + '
        '0.016*"staff" + 0.016*"excellent" + 0.015*"food" + 0.013*"class" + '
        '0.011*"poor" + 0.011*"good"') ]
```

# Sentiment Analysis

Reviews (Avg. Ratings)		Reviews (Sentiment assgn)		Combining Reviews & Title	
Top Positive	Top Negative	Top Positive	Top Negative	Top Positive	Top Negative
Seat	Hour	Seat	Hour	Seat	Hour
Service	Seat	Service	Seat	Service	Service
Good	Time	Time	Service	Time	Seat
Time	Service	Hour	Time	Hour	Time
Food	Plane	Good	Plane	Good	Customer
Crew	Told	Food	Staff	Food	Plane
AC	Customer	Plane	Customer	Plane	Staff
Staff	Day	AC	Airport	Staff	Food
Cabin	Airport	Staff	Food	AC	Airport
Class	Staff	Crew	Passenger	Crew	Passenger

# Insights from Analysis

## Services provided

- Services: Economy/Premium options, Onboard meals, In-flight Entertainment, Wi-fi, Duty free outlets, Lounges and Concierge services, credit cards, preferred seats and new/advanced fleets (Boeing, Airbus, Embraer, De Havilland)
- Highly professional crews/ground staff
- Serves majority of domestic routes compared with international routes

## Insights from reviews

- Positive reviews showed customer satisfaction on seats, services (on board/ground), cabins and time.
- Negative reviews were mainly on delay/cancellations which led to poor services (inflight/off-flight)
- Overall, inflight services (food, wi-fi, entertainment systems and seat comfort) were good.
- However, on punctuality, staff service and on value for money there seems to be need for improvement

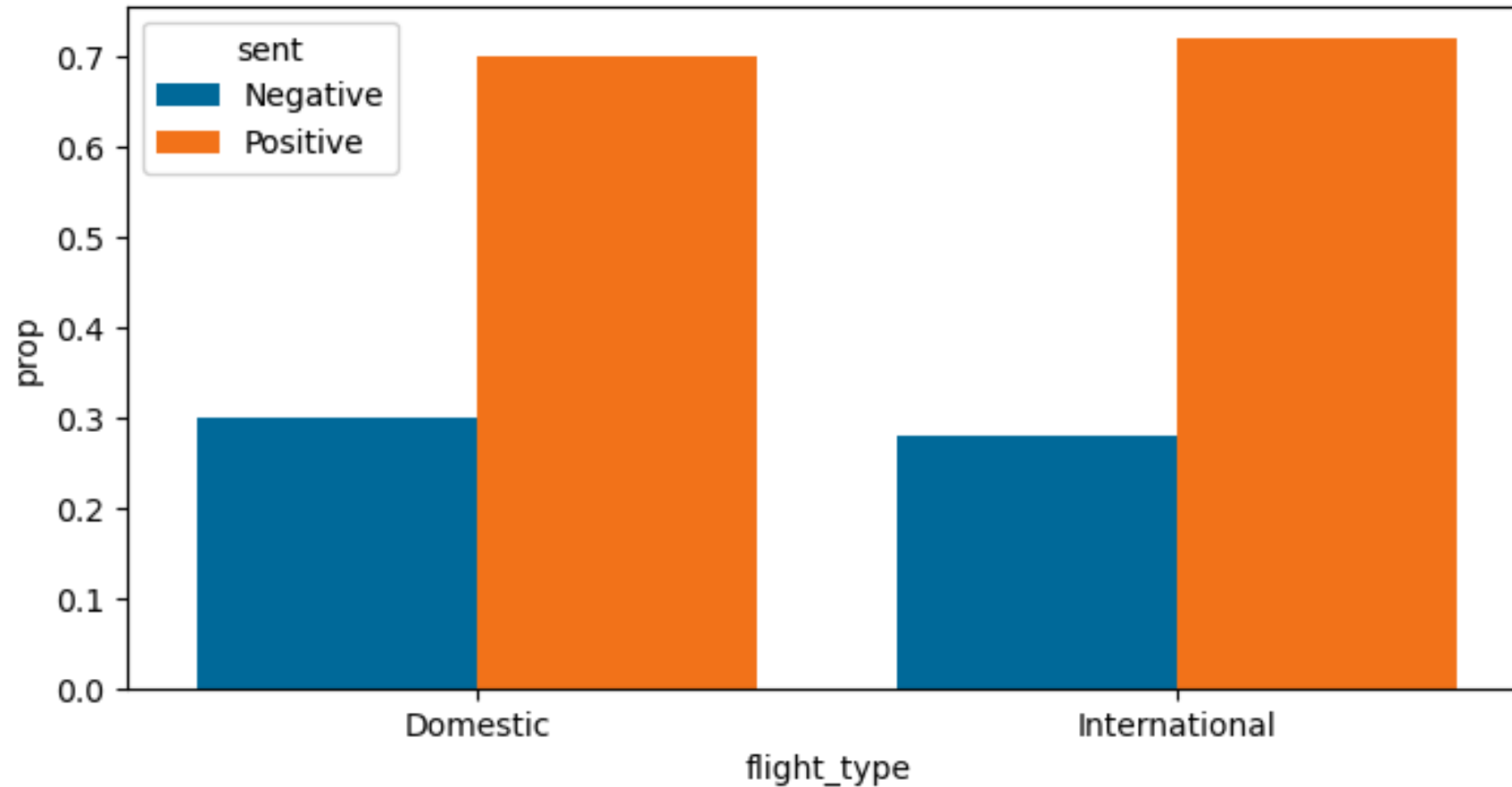
## Recommendations

- Pricing can be made competitive especially for economy/business class category to improve occupancy
- Seats in economy/premium eco can be improved for long-haul flights for better comfort
- Route specific food option can make economy/premium segment more satisfactory and give an edge over competitors
- Punctuality and low cancellation should be the focus (have buffer time and less contact points during flight to maintain on time performance)

# Thank you!



# Appendix 1: Sentiment Distribution under Domestic and International



## Appendix 2: Transfer/Direct flight Sentiment Impact

Flight	Sentiment	Counts	Proportion
Direct flight	+	359	0.29
	-	876	0.71
Transferred flight	+	108	0.26
	-	305	0.73

# Appendix 3: Positive and Negative Reviews Breakup

Seat Type	Reviews on Value For Money	Good raters	Positive reviews (%)	Negative reviews (%)
Business Class	262	170	65	35
Economy Class	1286	504	39	61
First Class	13	8	62	38
Premium Economy	83	45	54	46

Seat Type	Reviews on Seat Comfort	Good raters	Positive reviews (%)	Negative reviews (%)
Business Class	258	198	77	23
Economy Class	1226	600	49	51
First Class	13	11	85	15
Premium Economy	80	50	63	38

Seat Type	Reviews on Ground Service	Good raters	Positive reviews (%)	Negative reviews (%)
Business Class	170	118	69	20
Economy Class	910	332	36	39
First Class	7	4	57	36
Premium Economy	78	48	62	25

Seat Type	Reviews on Cabin Staff Service	Good raters	Positive reviews (%)	Negative reviews (%)
Business Class	258	209	81	19
Economy Class	1216	638	52	48
First Class	13	10	77	23
Premium Economy	80	46	57	43

Seat Type	Reviews on Food & Beverages	Good raters	Positive reviews (%)	Negative reviews (%)
Business Class	248	174	70	30
Economy Class	1003	406	40	60
First Class	12	8	67	33
Premium Economy	76	42	55	45

Seat Type	Reviews on Inflight Entertainment	Good raters	Positive reviews (%)	Negative reviews (%)
Business Class	240	192	80	20
Economy Class	951	581	61	39
First Class	11	7	64	36
Premium Economy	73	55	75	25