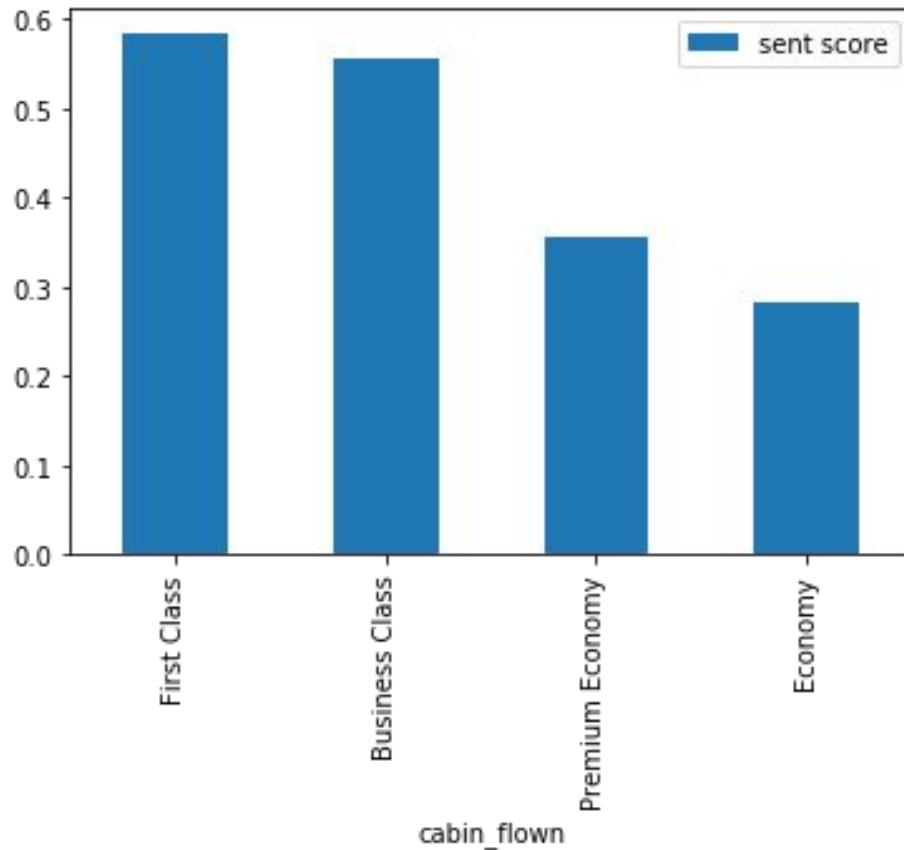# Airline Data

Matt Barrett, Reed Dalton, Dani Diehl, McKenna Karnes, Brett Scroggins

What Insights Can We Find?

- Do customers from different countries have different preferences?

- Do airlines advertise themselves in a way that is similar to what customers experience?

- What are the strengths and weaknesses of different airlines?
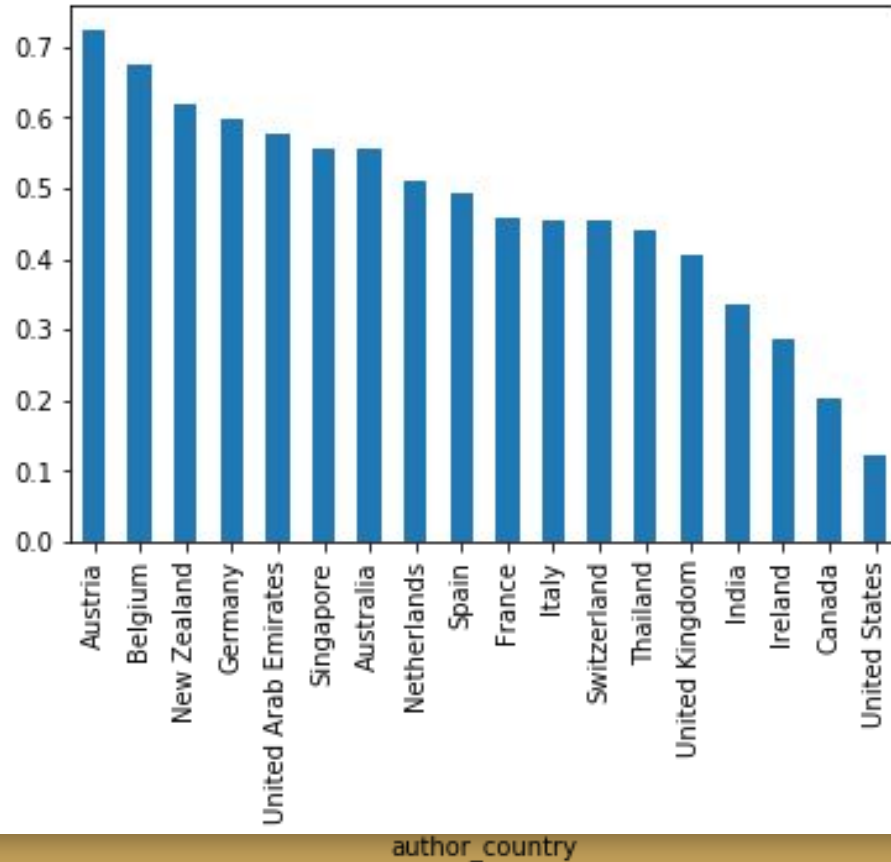
Overall Cabin-Class Sentiment

Do travellers of different nationalities place importance on the same attributes?

- US - Logistics & Scheduling

- UK - Seating

- Australia - Comfort & Entertainment

- Canada - Luggage & Entertainment (Movie)

- Germany - Service

Satisfaction Depending on Nationality

Sentiment of Attributes Depending on Nationality

imp_word_x	UK	US	AUS	CAN	GER
booking	0.042705	0.018695	0.049353	0.023869	0.060605
comfort	0.11789	0.099511	0.141733	0.082557	0.166928
entertainment	0.373935	0.338613	0.38608	0.301818	0.384072
price	0.175776	0.107457	0.201754	0.135232	0.223173
scheduling	-0.071676	-0.115529	-0.063679	-0.116665	-0.098437
service	0.165619	0.140571	0.203039	0.135141	0.199336

The top 10 airlines are…
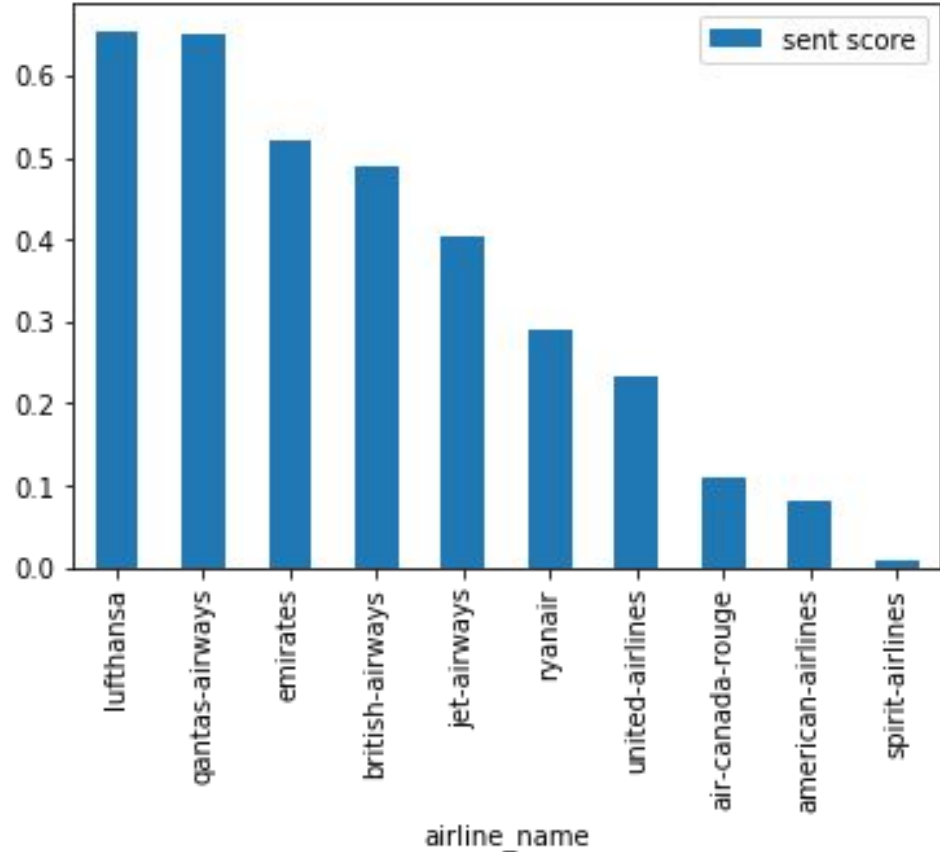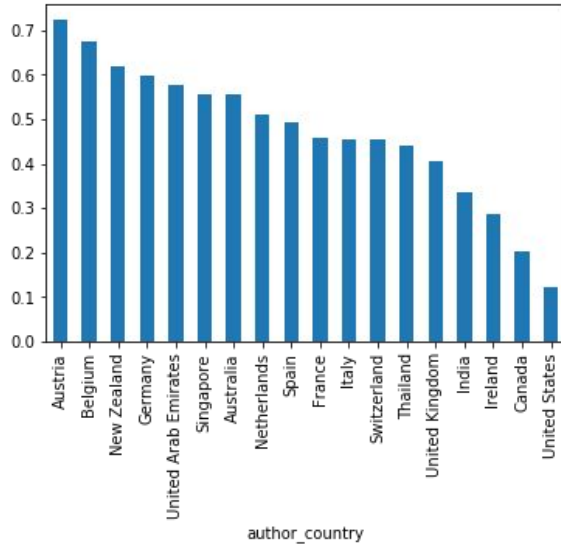
Which airline has the most positive average sentiment?

Importance of reviewer nationality:

Does what customers think of an airline align with the airlines values/mission statement?

Ryanair -

only airline to mention timeliness in their mission statement

United -

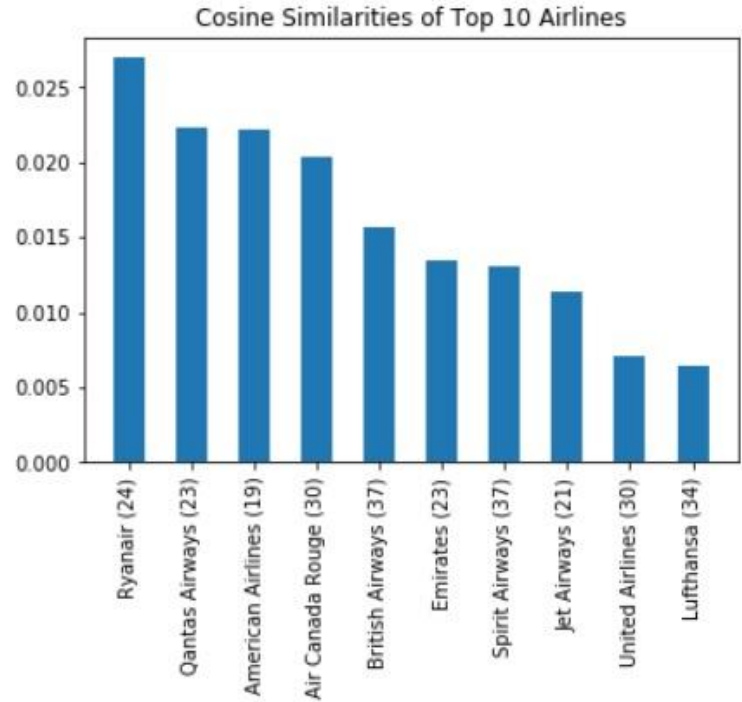textbook poor mission statement:

> *'Unite the world, connecting people'*
>
> *'Earn trust, delivering commitments'*

Lufthansa -

worst offender on 'growth' in mission statement:

> *'Shaping global aviation market'*

Cosine Similarities of Top 10 Airlines

What attributes do people associate most with certain airlines?

	spirit-airlines	british-airways	united-airlines	jet-airways	air-canada-rouge
scheduling	1.24754	0.95288	1.18881	0.995794	0.625821
service	0.618498	1.27062	0.913464	1.066	0.944382
booking	1.83222	0.690133	1.45187	0.85531	0.74474
price	1.87467	0.760104	0.804714	0.884935	1.23151
comfort	0.929197	1.06991	0.959788	0.989298	1.10649
entertainment	0.187921	0.939299	0.990139	1.16411	2.04587

Positive and Negative Attributes of Top 10 Airlines

imp_word	spirit_airlines	british_airways	united_airlines	jet_airways	air_canada-rouge
booking	0.001731	0.068498	0.028434	0.056738	0.034063
comfort	0.043336	0.106502	0.097942	0.136747	0.040302
entertainment	0.28334	0.351379	0.329599	0.361194	0.300053
price	0.030429	0.151552	0.087174	0.233008	0.054991
scheduling	-0.146201	-0.057141	-0.118122	-0.080094	-0.116526
service	-0.034472	0.172483	0.052434	0.162543	0.044372

How do the sentiment scores we calculated compare to the 'Overall Rating' that travellers provided?
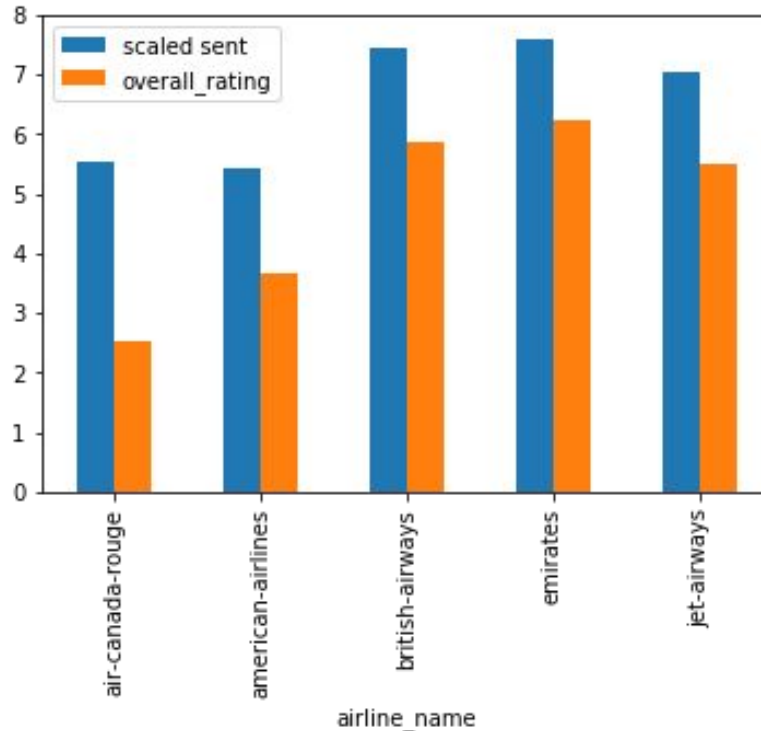
Industry-Wide Advice

- Alter advertisements based on which countries they are reaching by marketing to customers' wants

    - Australia: in-flight entertainment and service quality

    - UK: cabin space and seat comfort

    - Germany: affordable and efficient quality service

    - US and Canada: improvement in punctual service

- Higher cabin classes have higher sentiment

- Scheduling is an industry-wide issue

Business Advice

- **Spirit** - Price sentiment is not positive even though it is core value of Spirit

- **British Airways-** doing well compared to competition, customers perceive them similarly to their mission statement

- **Jet Airways** - performs well, but has room to improve the booking process

- **United Airlines** - opportunities to improve in Booking. Need to follow through with mission statement

- **Air Canada** - areas of growth in Price and Comfort as they had high lift scores, yet received neutral sentiment scores