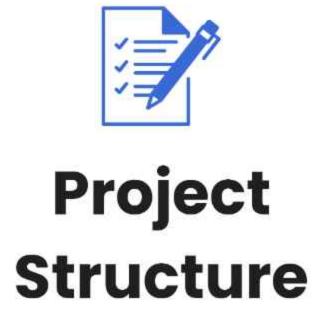
Team 0

Task



Problem Statement

Scraping and collecting customer feedback to review data from a third-party source. Also to analyze the data for any insights



Data Extraction

Data Processing

Common Words

Sentiment Analysis

Topic Modelling

Insights



Numpy Pandas

Requests BeautifulSoup

NLTK Spacy Gensim

Matplotlib Seaborn

Data Extraction

Data Extraction

B	Date	Title	Rating	Review	Aircraft	Type Of Traveller	Seat Type	Route	Date Flown	Seat Comfort	Cabin Staff Service	Food & Beverages	Inflight Entertainment	Ground Service	Value For Money	Recommended	Wifi & Connectivity	Verification
0	2024- 08-11	"customer service has been horrible"	3.0	I recently traveled with British Airways and h	A380	Family Leisure	Economy Class	Barcelona to Dallas via Heathrow	August 2024	3.0	4.0	4.0	4.0	2.0	3.0	no	NaN	✓ Trip Verified
1	2024- 08-09	"Not as much as an apology"	1.0	My family and I were booked to leave London fo	NaN	Family Leisure	Economy Class	London to Hong Kong	August 2024	1.0	NaN	NaN	NaN	1.0	1.0	no	NaN	✓ Trip Verified
2	2024- 08-08	"no one attending or caring"	2.0	We had to change from AA to BA for a flight to	NaN	Couple Leisure	Economy Class	Dallas to London	May 2024	2.0	2.0	2.0	2.0	2.0	2.0	no	2.0	Not Verified
3	2024- 08-08	"disappointed in British Airways"	2.0	After paying \$6500 for tickets for my family (Boeing 777	Family Leisure	Economy Class	London to Tampa	August 2024	1.0	1.0	1.0	4.0	3.0	1.0	no	3.0	✓ Trip Verified
4	2024- 08-07	easy and enjoyable flight"	8.0	An excellent flight on BA CityFlyer. The plane	Embraer 190	Couple Leisure	Economy Class	Dublin to London City	July 2024	4.0	4.0	3.0	NaN	4.0	4.0	yes	NaN	✓ Trip Verified

#	Column	Non-Null Count	Dtype
	1999		
8	Date	3838 non-null	object
1	Title	3838 non-null	object
2	Rating	3833 non-null	float64
3	Review	3838 non-null	object
4	Aircraft	2001 non-null	object
5	Type Of Traveller	3067 non-null	object
6	Seat Type	3836 non-null	object
7	Route	3063 non-null	object
8	Date Flown	3060 non-null	object
9	Seat Comfort	3715 non-null	float64
10	Cabin Staff Service	3701 non-null	float64
11	Food & Beverages	3420 non-null	float64
12	Inflight Entertainment	2623 non-null	float64
13	Ground Service	2989 non-null	float64
14	Value For Money	3837 non-null	float64
15	Recommended	3838 non-null	object
16	Wifi & Connectivity	660 non-null	float64
17	Verification	3838 non-null	object

memory usage: 539.8+ KB

Date	0
Title	θ
Rating	5
Review	ø
Aircraft	1837
Type Of Traveller	771
Seat Type	2
Route	775
Date Flown	778
Seat Comfort	123
Cabin Staff Service	137
Food & Beverages	418
Inflight Entertainment	1215
Ground Service	849
Value For Money	1
Recommended	ø
Wifi & Connectivity	3178
Verification	ø
dtype: int64	

['Family Leisure' 'Couple Leisure' 'Solo Leisure' 'Business' nan]
['Economy Class' 'Business Class' 'Premium Economy' 'First Class' nan]
['✓ Trip Verified' 'Not Verified' 'cNot Verified' 'Ϫ Not Verified'
'✓ Verified Review' 'Ϫ Unverified'
'We travelled economy from Manchester to Toronto via Heathrow The flig

Data Processing

Data Processing

Date	Title	Rating	Review	Aircraft	Type Of Traveller	Seat Type	Date Flown	Seat Comfort		Inflight Entertainment	Ground Service	Value For Money	Recommended	Wifi & Connectivity	Verification	From	То	TITLE	REVIEW
August 2024	"customer service has been horrible"	3.0	I recently traveled with British Airways and h	A380	Family Leisure	Economy Class	August 2024	3.0	***	4.0	2.0	3.0	no	0.0	Yes	Barcelona	Dallas via Heathrow	customer service horrible	I recently travel british airways mixed experi
August 2024	"Not as much as an apology"	1.0	My family and I were booked to leave London fo	No Data	Family Leisure	Economy Class	August 2024	1.0		0.0	1.0	1.0	no	0.0	Yes	London	Hong Kong	much apology	family I book leave london hong kong two augus
August 2024	"no one attending or caring"	2.0	We had to change from AA to BA for a flight to	No Data	Couple Leisure	Economy Class	May 2024	2.0		2.0	2.0	2.0	no	2.0	No	Dallas	London	one attend care	change aa ba flight london miss connection fli
August 2024	"disappointed in British Airways"	2.0	After paying \$6500 for tickets for my family (Boeing 777	Family Leisure	Economy Class	August 2024	1.0		4.0	3.0	1.0	no	3.0	Yes	London	Tampa	disappoint british airways	pay dollar six thousand five hundred ticket fa
August 2024	"easy and enjoyable flight"	8.0	An excellent flight on BA CityFlyer. The plane	Embraer 190	Couple Leisure	Economy Class	July 2024	4.0	***	0.0	4.0	4.0	yes	0.0	Yes	Dublin	London City	easy enjoyable flight	excellent flight ba cityflyer plane clean comf

Data Processing





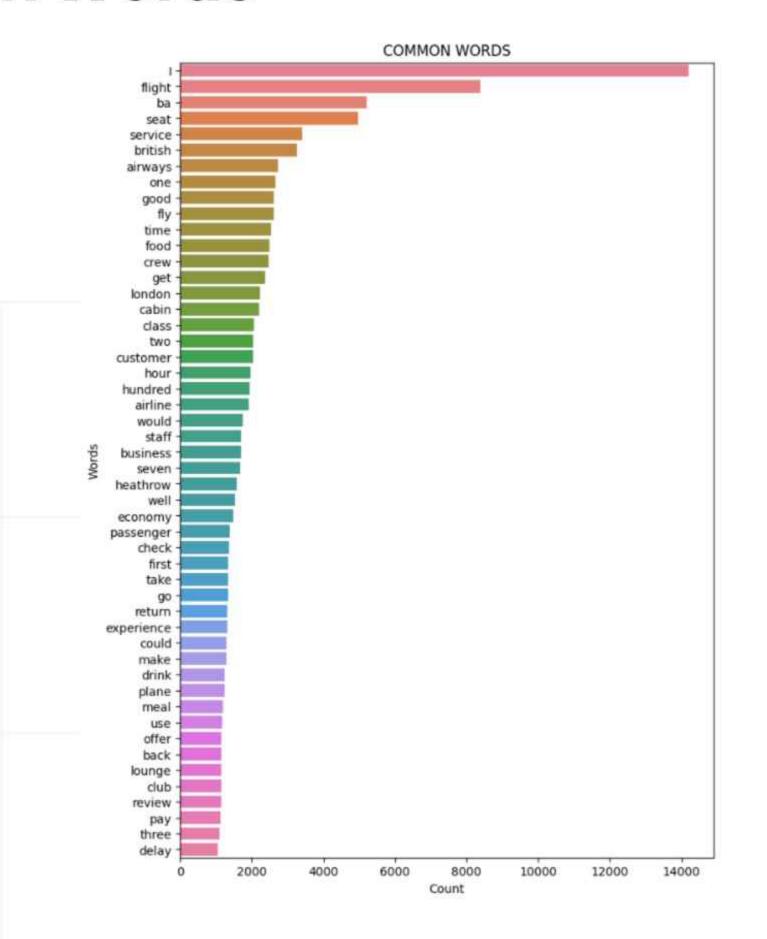
Common Words



Common Words

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 ('british', 1035),
 ('airways', 1008),
 ('review', 950),
 ('service', 315),
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 ('flight', 225),
 ('I', 187),
 ('experience', 166),
 ('crew', 164),
 ('airline', 155),
 ('seat', 147),
 ('good', 139),
 ('bad', 122),
 ('cabin', 96),
 ('fly', 94),
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 ('staff', 75),
 ('class', 67),
 ('never', 64),
 ('cost', 54),
 ('business', 52),
 ('well', 52),
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 ('flight', 8155),
 ('ba', 4959),
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 ('food', 2400),
 ('get', 2340),
 ('crew', 2303),
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 ('cabin', 2110),
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 ('would', 1727),
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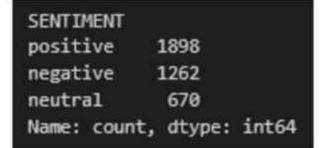


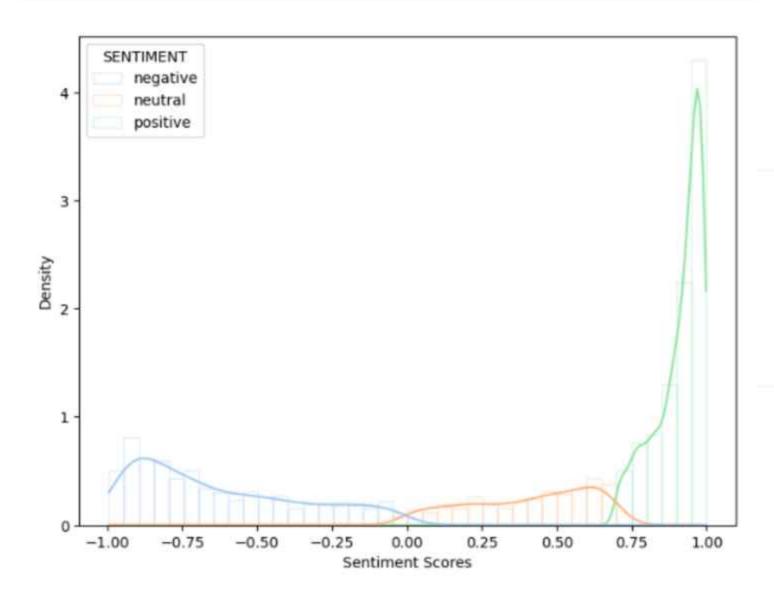
Sentiment Analysis

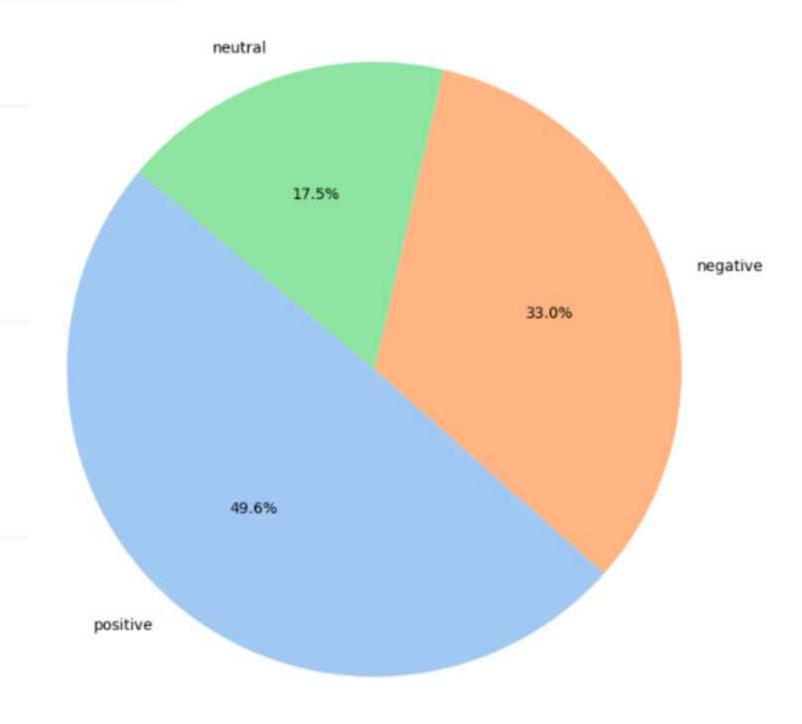


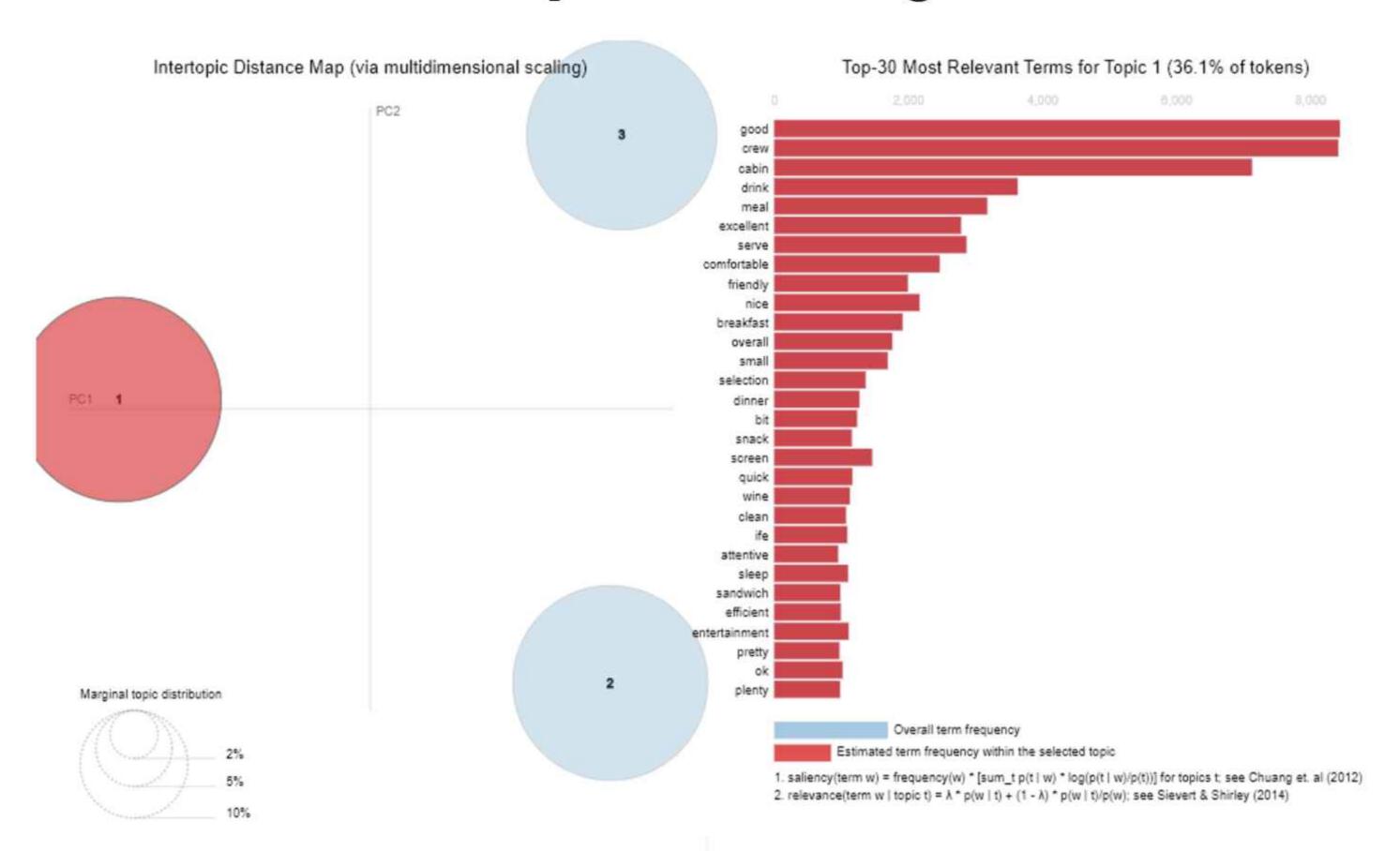
Sentiment Analysis

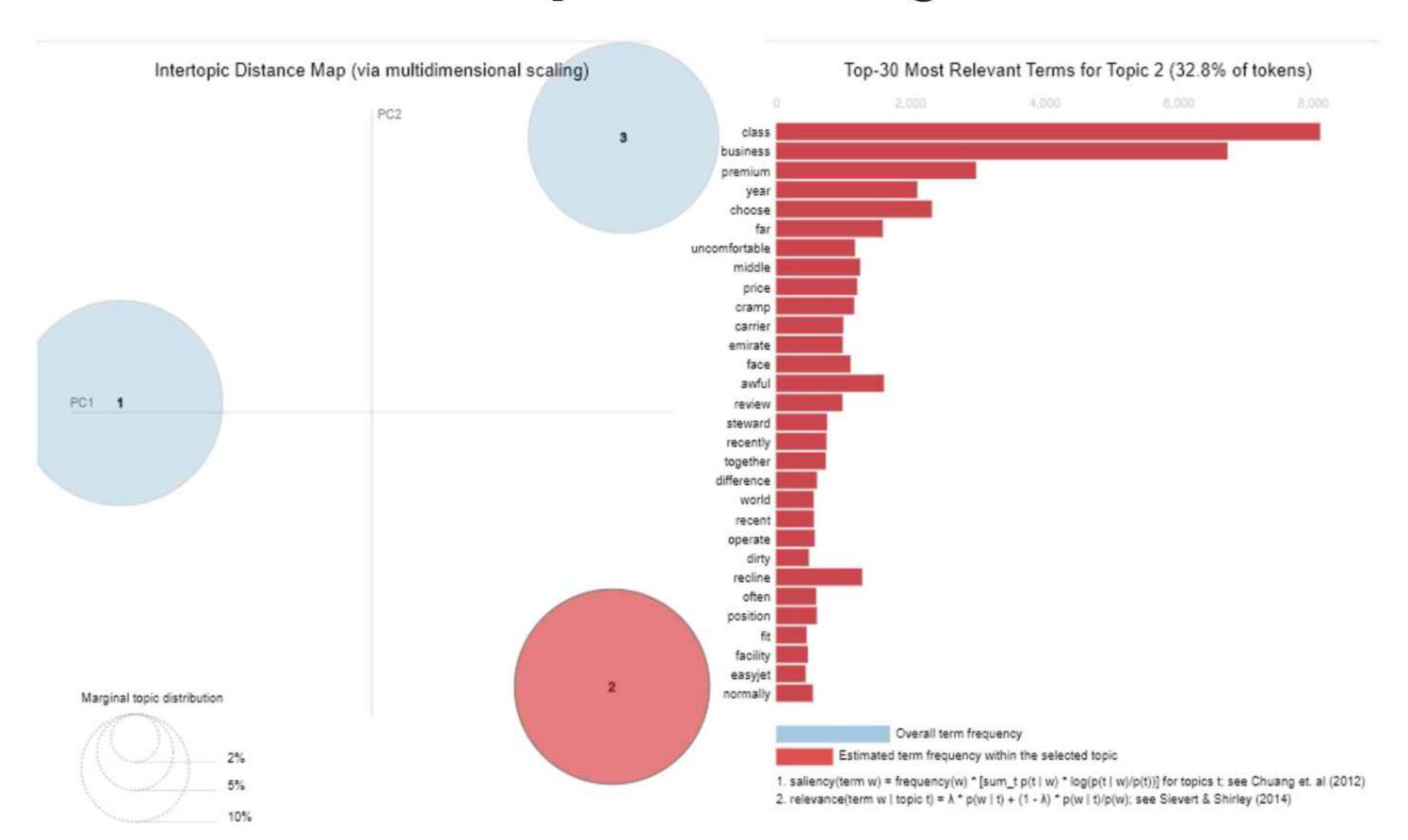
SENTIMENT	compound	pos	neu	neg	REVIEW	TITLE
negative	-0.8360	0.082	0.762	0.156	I recently travel british airways mixed experi	customer service horrible
negative	-0.8689	0.043	0.767	0.189	family I book leave london hong kong two augus	much apology
neutral	0.3709	0.196	0.649	0.155	change aa ba flight london miss connection fli	one attend care
positive	0.7506	0.195	0.661	0.144	pay dollar six thousand five hundred ticket fa	disappoint british airways
positive	0.9870	0.599	0.401	0.000	excellent flight ba cityflyer plane clean comf	easy enjoyable flight

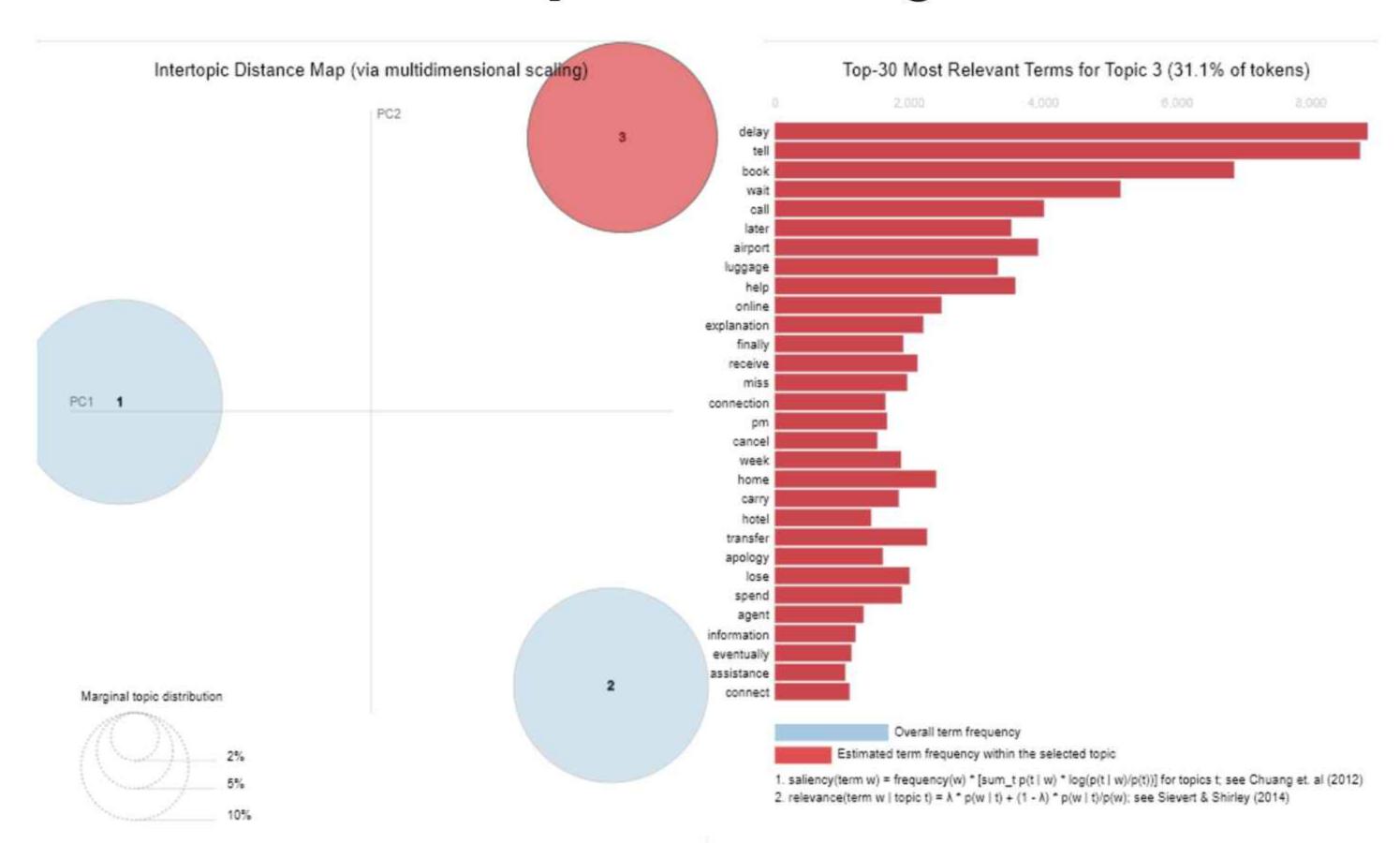














Food & Beverages

0.0

1.0

2.0

3.0

4.0

5.0

Wifi & Connectivity

0.0

1.0

2.0

3.0

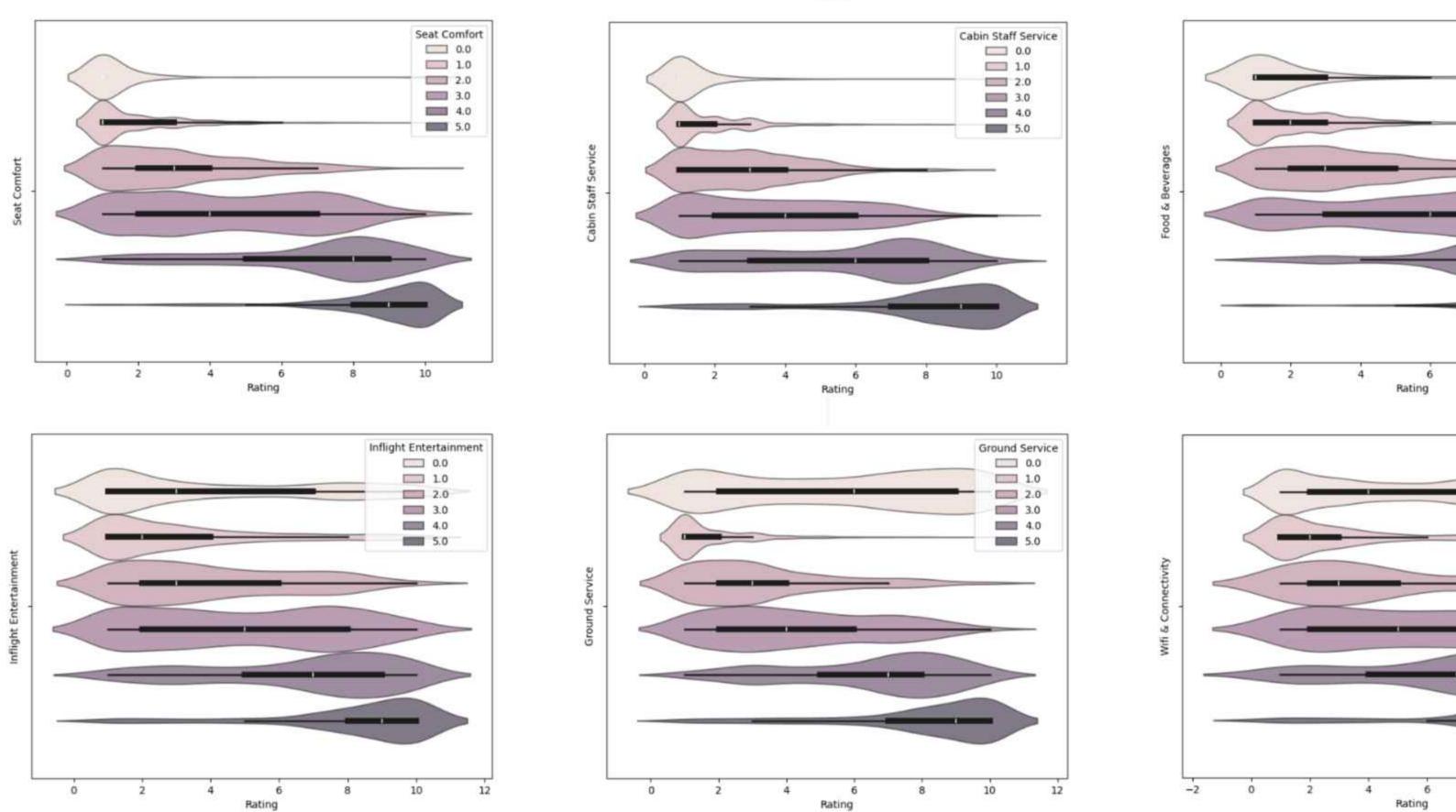
4.0

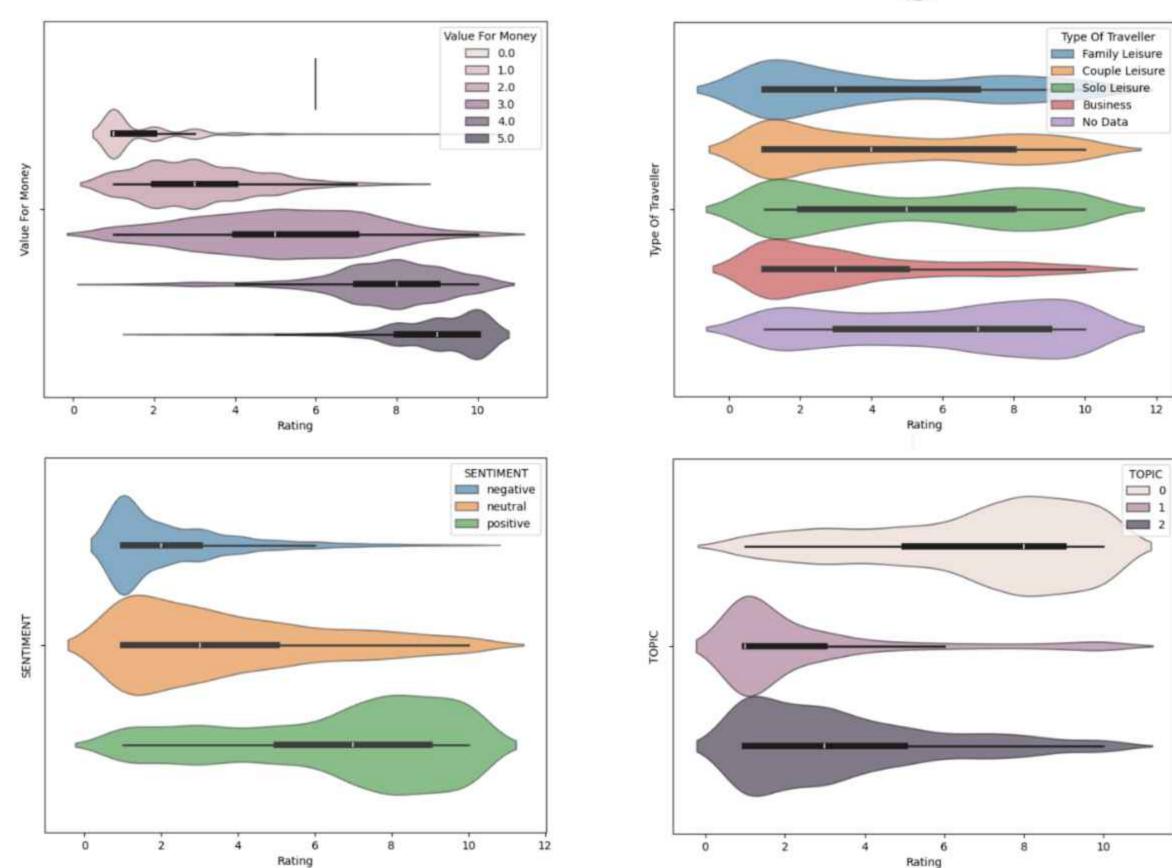
5.0

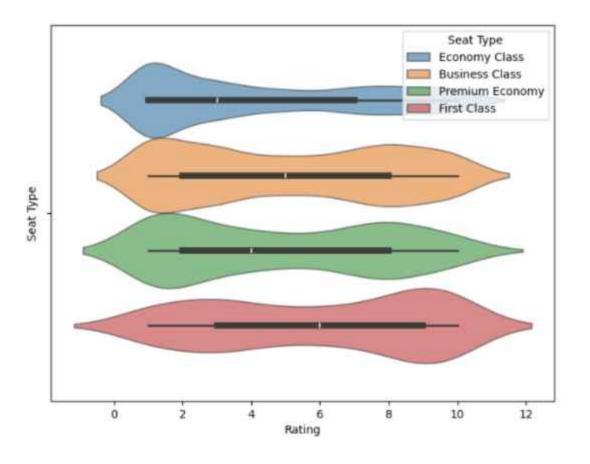
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12

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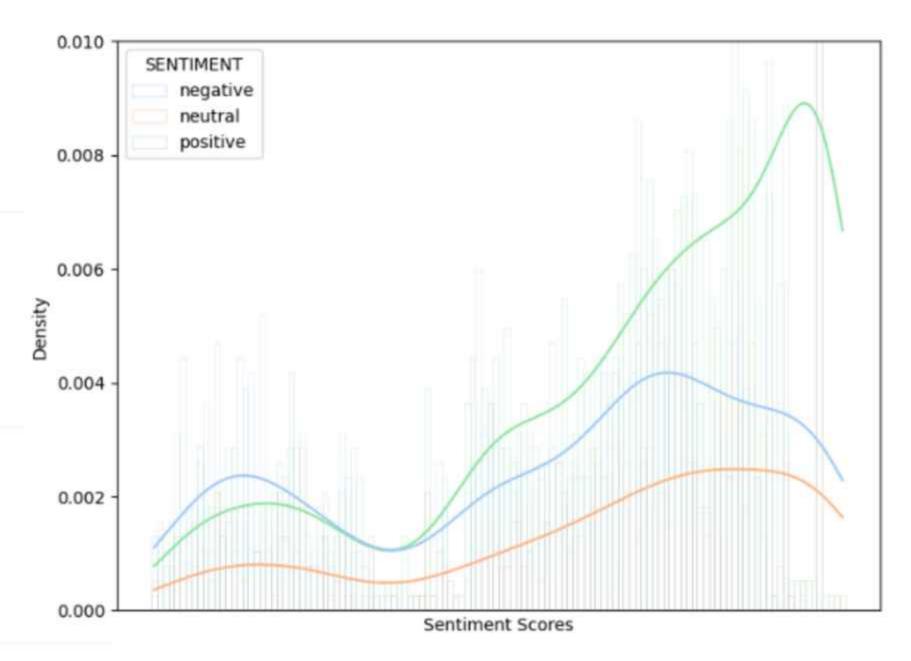






	Average_Rating	Frequency
Route		
KWI->EDI via LHR	10.000000	2
LCY->IOM	10.000000	2
London->Chennai	10.000000	3
TLV->LHR	9.500000	2
Belfast->San Francisco via London	9.500000	2
LHR->MAN	9.500000	2
Kuala Lumpur->London	9.333333	3
ORD->LHR	9.333333	3
Mumbai->London	9.000000	4
London Heathrow->Düsseldorf	9.000000	2
ZRH->LHR	8.666667	3
London->Calgary	8.500000	2
London Gatwick->Glasgow	8.500000	2
Bari->London Gatwick	8.500000	2
Munich->London	8.500000	2
Aberdeen->London Heathrow	8.500000	2
IAD->LHR	8.500000	2
London City->Edinburgh	8.500000	2
LHR->IAD	8.400000	5
Dublin->London Heathrow	8.333333	3

	Average_Rating	Frequency
Route		
Las Vegas->London	1.0	.2
Johannesburg->Heathrow	1.0	2
London->Aberdeen	1.0	3
Frankfurt->London City	1.0	2
London->Amman	1.0	2
London->Barcelona	1.0	. 5
London->Copenhagen	1.0	2
London->Denver	1.0	2
London->Faro	1.0	2
London->Lyon	1.0	3
Heraklion->Gatwick	1.0	2
London->Mauritius	1.0	2
London Heathrow->Stuttgart	1.0	2
London->Moscow	1.0	2
Heathrow->Marseille	1.0	2
MAN->LAS via LHR	1.0	2
London Heathrow->Berlin	1.0	2
Mykonos->London	1.0	2
Aberdeen->London	1.0	2
Pisa->London Heathrow	1.0	.3



Thank You