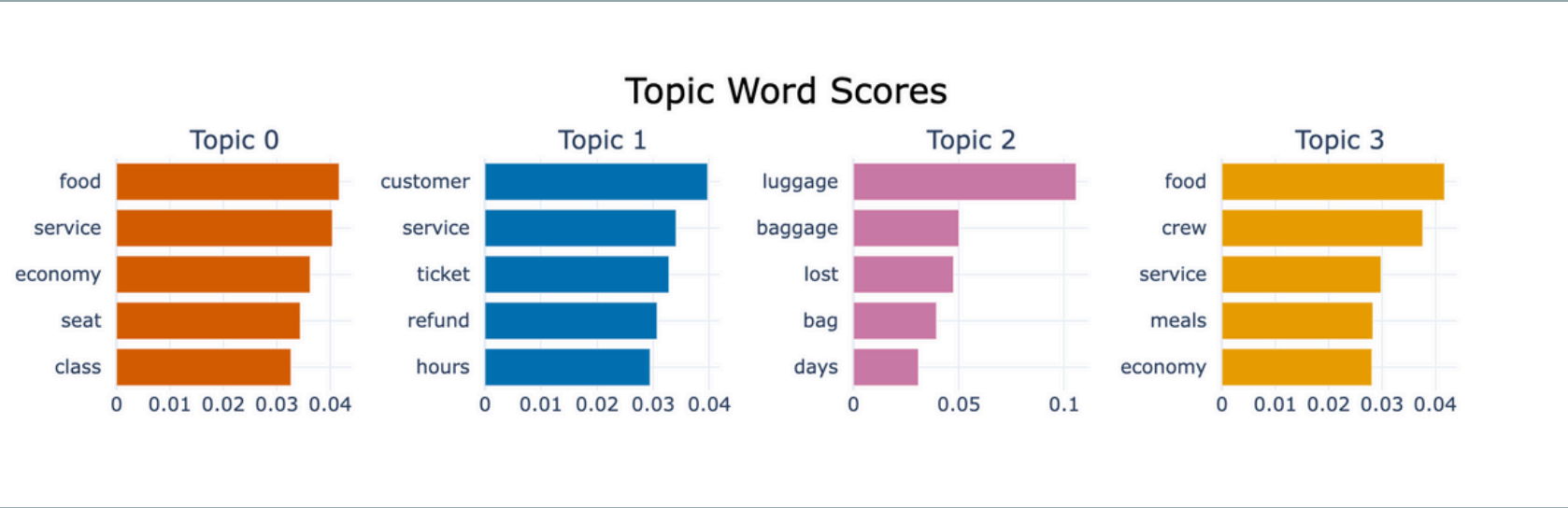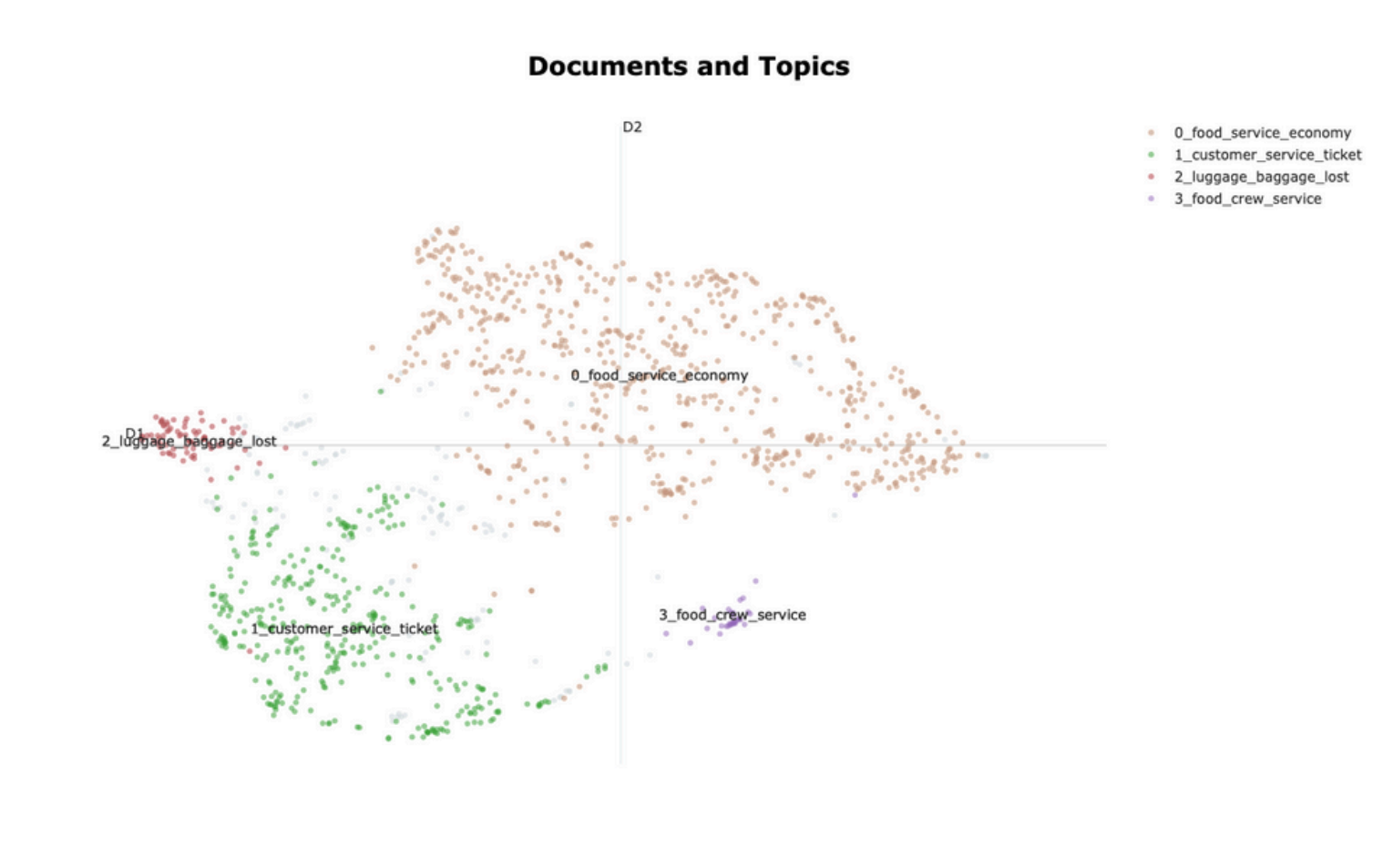# Singapore Airlines Customer Review Analysis

# Understanding Customer Sentiment using BERTopic

- BERTopic captures word meaning and order, making it especially effective for analyzing nuanced customer reviews. In this analysis, BERTopic enabled us to detect the most frequently discussed service areas and track how sentiment around each topic evolves over time

- Based on our model, customer reviews were clustered into **four main** themes using contextual embeddings. Each topic was identified by examining the **top-ranked keywords** (word scores) within its cluster. These keywords represent the most distinctive terms, allowing us to extrapolate descriptive titles for each topic.

Documents and Topics

- 0_food_service_economy
- 1_customer_service_ticket
- 2_luggage_baggage_lost
- 3_food_crew_service

Topic Word Scores

Topic 0	Topic 1	Topic 2	Topic 3
food	customer	luggage	food
service	service	baggage	crew
economy	ticket	lost	service
seat	refund	bag	meals
class	hours	days	economy

How Sentiment Changed Over Time

1 The analysis identified key topics that experienced the largest surge in negative sentiment post-2021

2 **Crew & Meal Quality** and **Inflight Experience & Economy Class Service** showed the most significant deterioration, with negative reviews increasing by over **270%** and **240%** respectively

3 **Volume-weighted metrics** – such as severity index & impact score – are essential to accurately prioritise which topics have the greatest overall effect on customer perception
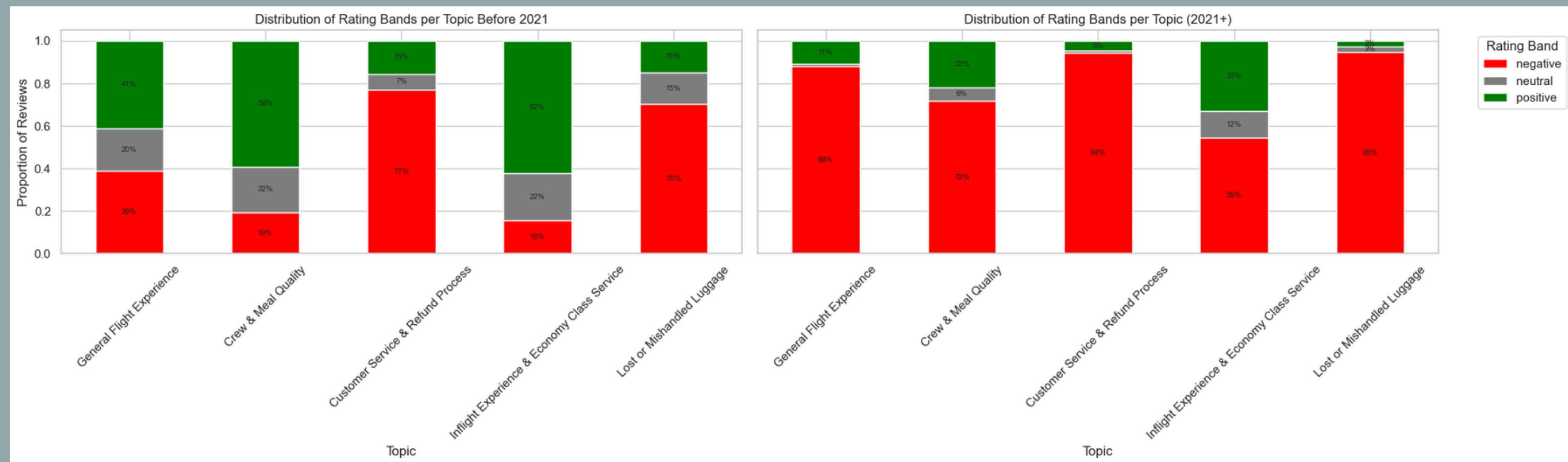
Prioritized Recommendations

1 **Overhaul Customer Service & Refund Process**

- Impact Score: **1.01**
- Drivers: Highest volume (28%), lowest rating (1.35), most helpful votes (1215)
- Reccomendation: Redesign refund workflows, add automation, and improve escalation handling.

2 **Reinvest in Inflight Economy Experience**

- Impact Score: **0.41** (second highest)
- Drivers: High helpful votes (1983), rising negative sentiment, poor comfort ratings
- Reccomendation: Upgrade seat ergonomics, IFE systems, and improve space efficiency.

3 **Improve General Flight Experience Touchpoints**

- These are outliers that could not be grouped into a cluster
- **D**rivers: Broadest volume (54%), mixed sentiment
- Delegate a team to analyse and distinguish them into subcategories manually and optimize high-friction points

What This Means for Singapore Airlines

Singapore Airlines' negative sentiment post-2021 is concentrated in a few critical areas – particularly **Customer Service & Refunds and Inflight Experience for Economy Class**. These topics pose a direct threat to SIA's premium brand positioning. These two areas alone account for over 80% of total review volume, and are associated with the lowest customer satisfaction scores (average ratings of 1.35 and 3.19, respectively).

- **Refund-related frustrations,** which generated 334 negative reviews and 861 helpful votes, risk alienating high-value customers in times of disruption (e.g., cancellations, schedule changes). Poor responsiveness here can severely damage perceptions of accountability and care.

- T**he comfort gap in Economy Class**, mentioned in 375 negative reviews and flagged by over 1,200 helpful votes, undermines SIA's competitiveness on long-haul routes, especially against rising regional competitors who offer newer fleet configurations and better perceived value.

Rank	Topic Label	Avg Rating	Review Share	Neg. Reviews	Helpful Votes	Severity Index	Impact Score
1	Customer Service & Refund Process	1.35	27.9%	334	861	0.204	**1.03**
2	Inflight Economy Experience	3.19	54.3%	375	1295	0.197	**0.40**
3	General Flight Experience	1.84	9.4%	105	260	0.059	-0.24
4	Lost or Mishandled Luggage	1.29	5.9%	71	167	0.044	-0.25
5	Crew & Meal Quality	2.59	2.5%	23	69	0.012	-0.93

Table 1: Summary of Topic Impact Scores (with Negative Review Counts)