

BRITISH AIRWAYS CUSTOMER REVIEWS ANALYSIS

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Business Problem

British Airways' Commercial and Customer Experience teams have observed a decline in online customer recommendation rates, along with inconsistent satisfaction levels across routes, cabin class, and traveler segments.

The objective of this analysis is to identify the key drivers of customer recommendation and value-for-money perception, and to determine where targeted service and experience investments would have the greatest impact on brand perception and customer loyalty.

The business objectives are:

- Increase overall customer recommendation rate
- Improve value-for-money perception
- Identify high-risk customer segments with elevated dissatisfaction
- Detect service quality gaps by cabin class, route, and traveler type

Key Business Questions

1. Which service dimensions most strongly differentiate recommended vs. not recommended trips?
2. How do ratings vary by traveler type and seat class?
3. Are business travelers dissatisfied for different reasons than leisure travelers?
4. Which routes or regions consistently underperform?
5. Is "value for money" more critical than absolute service quality?

Dataset Overview

The dataset includes the following variables:

- BS Reviews
 - Header: review title.
 - Author: reviewer's name.
 - Date
 - Place: country.
 - Content: written review.
 - Aircraft: plane model.
 - Traveller Type: business, family leisure, couple leisure, or solo leisure.
 - Seat Type: business class, economy class, premium class, or first class.
 - Route: origin and destination.
 - Date Flown
 - Recommended: yes/no.
 - Trip Verified: verified/not verified.
 - Rating: 1 to 10.
 - Seat Comfort: rating -1 to 5.
 - Cabin Staff Service: rating -1 to 5.
 - Food and Beverages: rating -1 to 5.
 - Ground Service: rating -1 to 5.
 - Value for Money: rating 1 to 5.
 - Entertainment: rating -1 to 5.
- Countries
 - Country
 - Code: country code
 - Continent
 - Region

ANALYSIS AND FINDINGS

The dataset covers 1,320 customer reviews collected between March 2016 and September 2023. Customer reviews include flight details and limited personal information, a general service Rating, individual scores for specific service dimensions (Cabin Staff Service, Seat Comfort, Food & Beverages, Entertainment, Ground Service, and Value for Money), a written review describing the experience, and an indication of whether the airline is recommended or not.

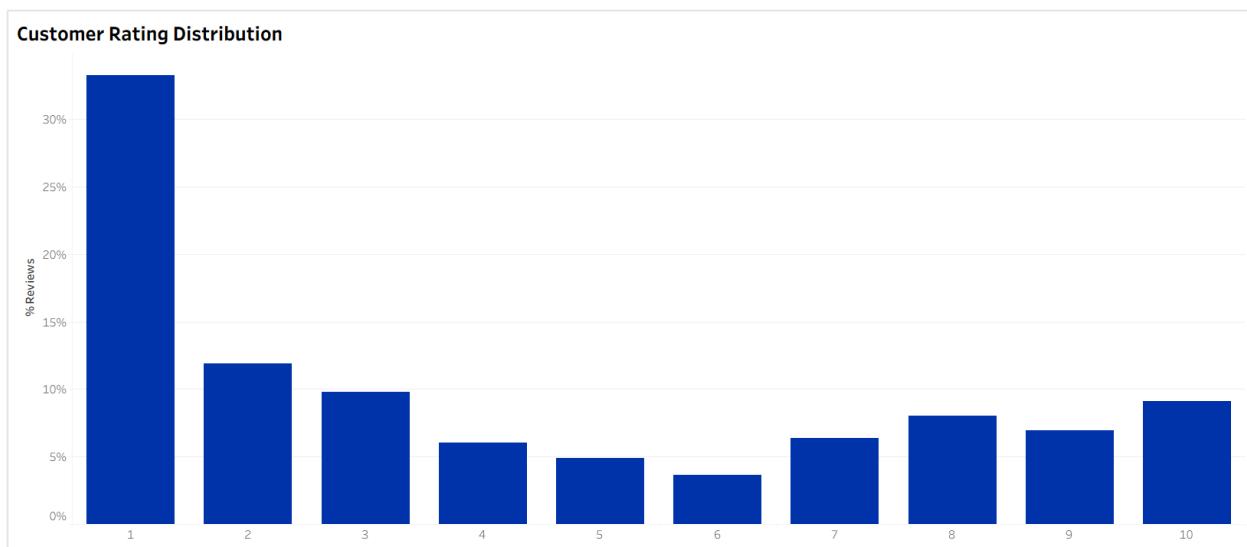
Both verified and non-verified reviews are included to reflect overall public brand perception.

The volume of reviews collected varies considerably across the years covered by the dataset. The distribution is as follows: 2016 (14%), 2017 (30%), 2018 (17%), 2019 (17%), 2020 (4%), 2021 (3%), 2022 (8%), and 2023 (7%).

Despite this imbalance, segmenting the data by year reveals no meaningful variation in the category-level satisfaction scores. The only notable change is observed in the overall Rating, which has declined by approximately two points over the past three years. This suggests that, aside from this downward trend in overall perception, reviews from different years can generally be considered representative of the broader customer experience.

The average overall Rating across all reviews is 4.2 on a scale from 1 to 10. The Customer Rating Distribution chart illustrates how these scores are distributed and reveals a strong concentration at the lowest end of the scale: 34% of all reviews rated the service as 1, significantly exceeding the share of any other rating level.

Overall, the distribution suggests a polarized perception of service quality. A majority of reviews (55%) rated the service 3 or below, indicating a predominantly negative experience, while 21% of reviews fall within the mid-range (ratings between 4 and 7), suggesting limited neutral evaluations, and 24% of reviews awarded high scores of 7 or above, reflecting strong satisfaction in a smaller segment.



Category-level satisfaction scores range from -1 to 5 and are interpreted as follows:

- -1 → Very Dissatisfied
- 1 → Dissatisfied
- 2 → Slightly Dissatisfied
- 3 → Satisfied
- 4 → Very Satisfied
- 5 → Extremely Satisfied

The table below shows that, on average, customers report satisfaction with Cabin Staff Service, Ground Service, and Value for Money, while expressing slight dissatisfaction with Food & Beverages quality, and dissatisfaction with the Entertainment offerings.

Average Ratings of All Reviews

Avg. Rating	4.2
Avg. Cabin Staff Service	3.3
Avg. Seat Comfort	2.9
Avg. Food Beverages	2.4
Avg. Entertainment	1.4
Avg. Ground Service	3.0
Avg. Value For Money	2.8

The analysis deepens by segmenting customer reviews into two primary groups: reviews that recommend the company and reviews that do not recommend the company. By comparing satisfaction levels and key flight characteristics across these groups, the analysis aims to identify the factors that differentiate positive from negative customer experiences and to highlight areas where targeted improvements could most effectively increase customer recommendation.

The average overall Rating among customers who recommend the airline is 4.1, compared to 4.2 among those who do not recommend it. In addition, the distribution of Rating scores is very similar across both groups. This minimal difference suggests that overall satisfaction levels are generally low regardless of recommendation status, indicating that the decision to recommend the airline is not necessarily driven by high overall satisfaction but may instead be influenced by other factors.

Reviews Recommending the Company

Reviews that recommend the airline represent 43% of the total. On average, these customers report being very satisfied with Cabin Staff Service, Seat Comfort, Ground Service, and Value for Money, satisfied with the quality of Food & Beverages, while Entertainment emerges as the weakest dimension, with an average score indicating slight dissatisfaction with the offerings.

Average Ratings of Reviews Recommending the Company

Avg. Rating	4.1
Avg. Cabin Staff Service	4.4
Avg. Seat Comfort	3.9
Avg. Food Beverages	3.5
Avg. Entertainment	2.0
Avg. Ground Service	4.0
Avg. Value For Money	4.0

These average satisfaction levels remain largely stable from 2016 to 2023, suggesting no significant long-term trend in the customer experience. The main exception is 2021, which shows a noticeable decline across overall ratings and service attributes, likely reflecting disruptions caused by the COVID-19 pandemic.

When the analysis is further segmented by Aircraft, Seat Type, Traveller Type, and Continent, no meaningful variation in average scores is observed. This indicates a relatively homogeneous experience among recommending customers, with limited evidence of segment-specific differences.

The only dimensions showing some variability are the overall Rating, which in a few cases drops to 2.7 and, more rarely, rises to 5, and Entertainment, which fluctuates from very dissatisfied to extremely satisfied. While the average entertainment score is low (2.0), its wide range, from -1 to 5, points to highly inconsistent experiences. Given the strong performance across core service categories, this suggests that positive service interactions do not fully offset weaknesses in the onboard experience.

Reviews Not Recommending the Company

Reviews that do not recommend the airline account for 57% of the total. On average, customers in this group assign an overall Rating of 4.2 on a scale from 1 to 10. They report being slightly dissatisfied with Cabin Staff Service, Seat Comfort, and Ground Service, and dissatisfied with the quality of Food & Beverages, Entertainment offerings, and Value for Money.

Entertainment is the lowest-rated category in this group, mirroring the pattern observed among recommending customers, which reinforces its identification as a systemic weakness in the airline's service offering.

Average Ratings of Reviews Not Recommending the Company

Avg. Rating	4.2
Avg. Cabin Staff Service	2.4
Avg. Seat Comfort	2.1
Avg. Food Beverages	1.5
Avg. Entertainment	1.0
Avg. Ground Service	2.3
Avg. Value For Money	1.8

As with the recommending group, average satisfaction scores among non-recommending customers remain largely stable when segmented by Year, Continent, Aircraft, Traveller Type, and Seat Type. Even when combining variables, such as analyzing profiles like ‘business travelers in first class’, the results continue to show a consistent perception of service quality. This indicates that dissatisfaction is not concentrated within specific customer segments, but rather reflects a broadly shared experience among non-recommending customers.

Sentiment Analysis

This analysis would be incomplete without considering the written reviews, which provide qualitative context that numeric ratings alone cannot capture. To make these unstructured reviews analyzable within a data framework, a sentiment analysis was conducted using Python, applying natural language processing techniques to classify customer opinions and identify the predominant sentiment expressed in each review.

To capture both concise emotional cues and detailed customer feedback, the sentiment analysis was performed on a combined text field including the review title and the full written content.

The analysis categorizes each written review into one of three sentiment classes: Positive, Neutral or Negative, to simplify interpretation and support comparison with the quantitative satisfaction metrics. The following section presents the resulting sentiment distribution and explores how textual sentiment aligns with customer recommendation behavior and rating patterns.

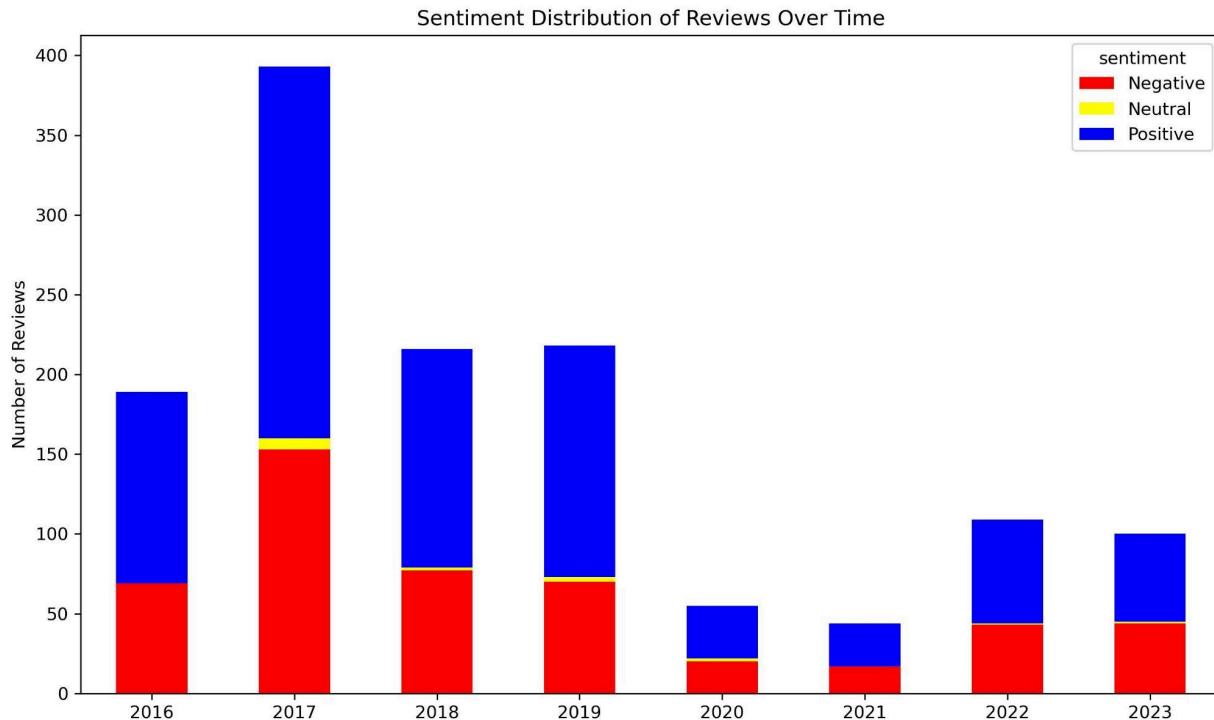
Results: Overall, 62% of reviews are positive, 1% are neutral, and 37% are negative.

- Non-recommending reviews (no)
 - Negative 60.2%
 - Positive 37.9%
 - Neutral 1.9%
- Recommending reviews (yes)
 - Positive 92.7%
 - Negative 6.9%
 - Neutral 0.3%

The sentiment analysis strongly aligns with customer recommendation behavior. Among non-recommending reviews, 60% express negative sentiment, while only 38% are positive, which supports the earlier finding that recommendation is not driven by high overall satisfaction alone. In contrast, 93% of recommending reviews exhibit positive sentiment, with fewer than 7% classified as negative.

This contrast highlights a clear emotional divide between the two groups that is not fully captured by numeric ratings alone, suggesting that written feedback provides critical context for understanding customer dissatisfaction.

The sentiment distribution over time shows that positive reviews remain dominant across all years analyzed. However, a relative increase in negative sentiment can be observed in the most recent years, aligning with the previously identified decline in rating scores. Although the total number of reviews in recent years is lower, the shift in sentiment suggests emerging areas of dissatisfaction that may impact customer recommendation if not addressed.



Keywords Analysis

A keyword-based aspect analysis was also conducted using Python to gain a deeper understanding of the areas and aspects driving negative customer perceptions.

Given the objective of identifying improvement opportunities, the analysis focuses on negative, neutral, and positive reviews in which customers do not recommend the airline.

The following words were excluded from the analysis because they add noise rather than insight: one, would, get, even, could, passenger.

Not Recommended + Negative Sentiment

Top meaningful keywords:

- Service
- Seat / Seats
- Food
- Crew / Staff
- Poor
- Time / Hours
- Business / Economy / First / Club

Customers expressing negative sentiment and not recommending the airline consistently reference fundamental aspects of the flight experience, including seating comfort, food quality, cabin service, and time-related issues, indicating a broad service failure rather than isolated problems.

Not Recommended + Neutral Sentiment

Top meaningful keywords:

- Served
- Meal
- Drinks
- Return
- Good

Neutral-sentiment customers who do not recommend the airline tend to focus on execution details such as meal service and onboard offerings, suggesting that while expectations were partially met, the experience lacked differentiation or perceived value.

Not Recommended + Positive Sentiment

Top meaningful keywords:

- Service
- Seat
- Crew
- Food
- Lounge
- Boarding
- Business / First / Economy
- Good

Even among customers expressing positive sentiment, non-recommendation is driven by shortcomings in process-related touchpoints such as boarding, lounge experience, and perceived value across cabin classes. This suggests that satisfactory service alone is insufficient to generate advocacy when operational and structural expectations are not fully met.

Data limitations

The dataset does not include a unique and reliable customer identifier. The author field is inconsistently formatted. For example, generic labels such as “1 review” and truncated names like “D Cory”, making it impossible to determine whether multiple reviews were submitted by the same individual. As a result, a single customer may be represented multiple times in the

dataset. For the purposes of this analysis, each review is treated as an independent observation, and insights are interpreted with this limitation in mind.

The number of reviews collected varies substantially throughout the period covered by the dataset, with certain years contributing a significantly higher volume of reviews than others. This imbalance may skew year-over-year comparisons, as trends observed in specific periods could be disproportionately influenced by years with higher review activity. As evidenced in the sentiment analysis over time, fluctuations in sentiment may therefore reflect changes in review volume rather than true shifts in customer perception. For this reason, temporal trends should be interpreted with caution, and year-level insights are considered indicative rather than conclusive.

The dataset does not include customer demographic attributes such as age, gender, or income, which limits the ability to perform demographic-based segmentation. However, in the airline industry, customer satisfaction and recommendation behavior are primarily driven by trip-related and service experience factors rather than demographic characteristics. As a result, this analysis focuses on behavioral and flight-specific segments, such as Traveler Type, Cabin Class, and Route, which are more directly linked to operational performance and customer perception. While demographic data could support more personalized marketing strategies, its absence does not materially affect the core insights or conclusions of this study.

MARKETING RECOMMENDATIONS

Based on the quantitative ratings, sentiment analysis, and keyword findings, the following strategic actions are recommended to improve customer perception and increase airline recommendation:

Standardize and Upgrade the Onboard Experience

Focus on entertainment and food quality. Entertainment consistently emerges as the weakest and most inconsistent service dimension across both recommending and non-recommending customers. Improving the reliability, content quality, and availability of onboard entertainment, along with modest enhancements to food and beverage offerings, would address a recurring source of dissatisfaction that currently undermines otherwise positive service experiences.

Reduce Process Friction at Key Customer Touchpoints

Focus on the boarding and ground experience. Keyword analysis shows that even customers with positive sentiment cite boarding procedures, lounge access, and time-related issues as reasons for not recommending the airline. Streamlining these operational touchpoints and improving communication during delays or transitions can significantly improve perceived professionalism and reduce negative emotional impact.

Align Value-for-Money Perception with Cabin Class Expectations

Non-recommendation spans all cabin classes, including premium segments, suggesting that customers do not consistently perceive the experience as commensurate with the price paid. Clearer differentiation between cabin classes and targeted enhancements in premium services could help close this expectation gap and strengthen advocacy among higher-value customers.

Shift Marketing Messaging from Service Reliability to Experience Consistency

While cabin staff and core service elements perform relatively well, the data shows that strong service alone does not drive recommendation. Marketing communications should emphasize a more holistic and consistent end-to-end travel experience, reinforcing improvements in onboard comfort, entertainment, and operational reliability to better align brand promise with actual customer experience.

Improve Review Data Collection and Consistency

Standardize the review collection process across all customer touchpoints and actively encourage feedback through light incentives, such as loyalty points or post-flight prompts. A more consistent and balanced volume of reviews over time will reduce data skew, improve insight reliability, and enable more accurate monitoring of customer perception and recommendation drivers.