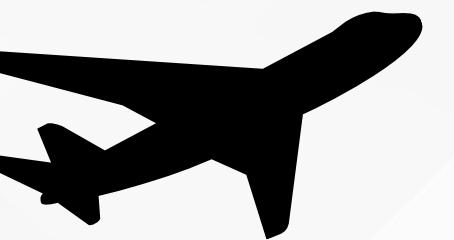


# UNITED AIRLINES

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Fly the Friendly Skies

# INTRODUCTION

United Airlines highly prioritizes customer input regarding its Food & Beverage (F&B) services as part of its drive for worldwide recognition.

Recognizing the substantial impact of F&B on customer contentment and allegiance, the airline aims to evaluate its present F&B performance.

Despite progress made via collaborations, pre-booking, and stock projections, enhancement opportunities remain. F&B satisfaction, gauged by NPS scores, heavily relies on ratings from 0-5, with 4 or 5 denoting satisfactory performance.

**Note:** We have put the link of our code in the last slide.

UNITED  
AIRLINES

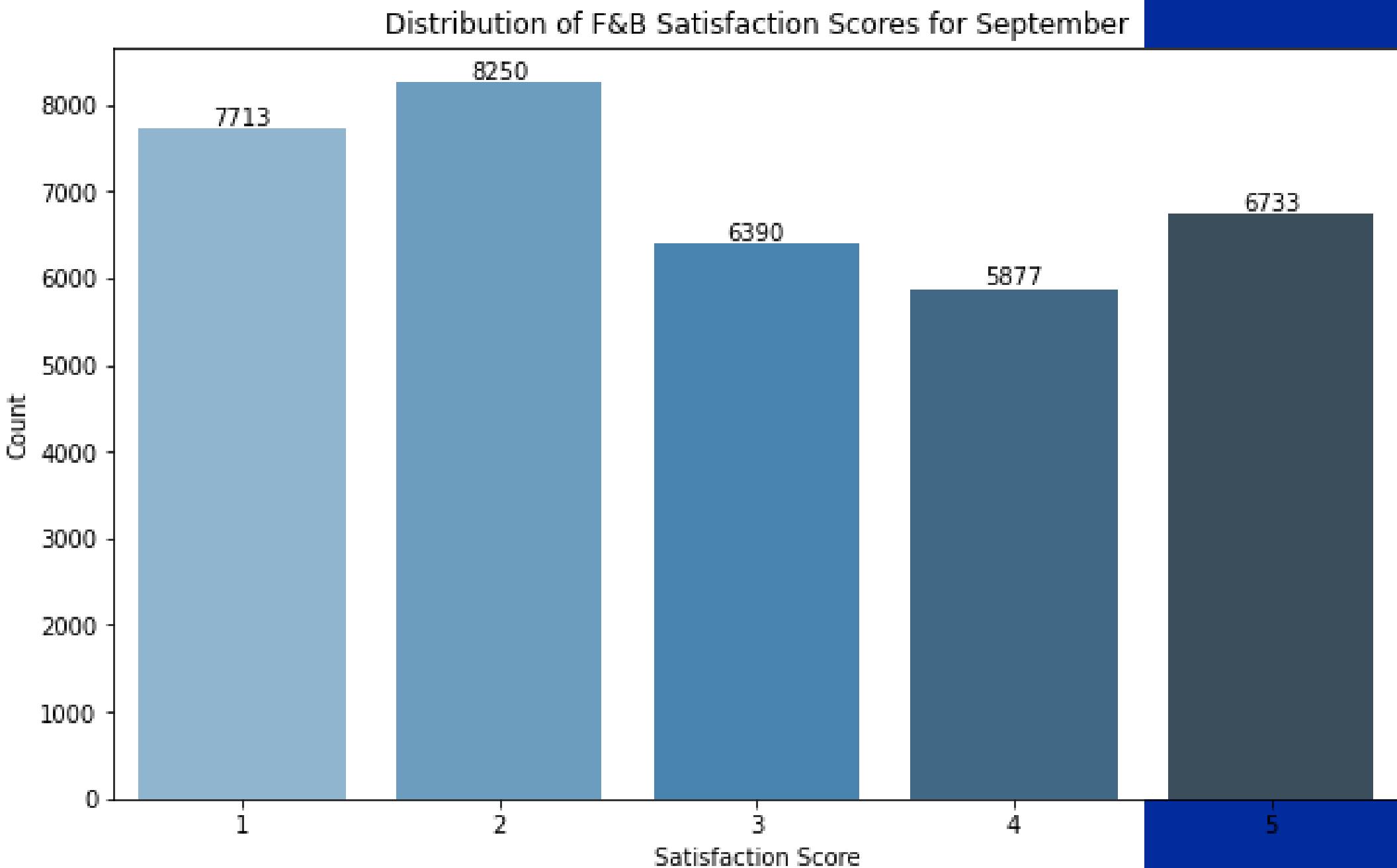


# ROOT CAUSE ANALYSIS

With our goal in mind, we'll analyze September's score distribution and pinpoint key drivers influencing F&B satisfaction.

First, let's examine the September score distribution.

The distribution of F&B satisfaction scores for September indicates that a majority of the passengers are satisfied (scores of 4 and 5). However, there is still a significant number of passengers who have given lower scores (1, 2, and 3).



To identify the key drivers of satisfaction, let's investigate a few potential factors:

**Haul type** (e.g., Short, Medium, Long)

**Cabin type** (e.g., Economy, Business)

**Flight type** (e.g., Domestic, International)

**Hub-Spoke model** (e.g., Hub departure, Spoke departure)

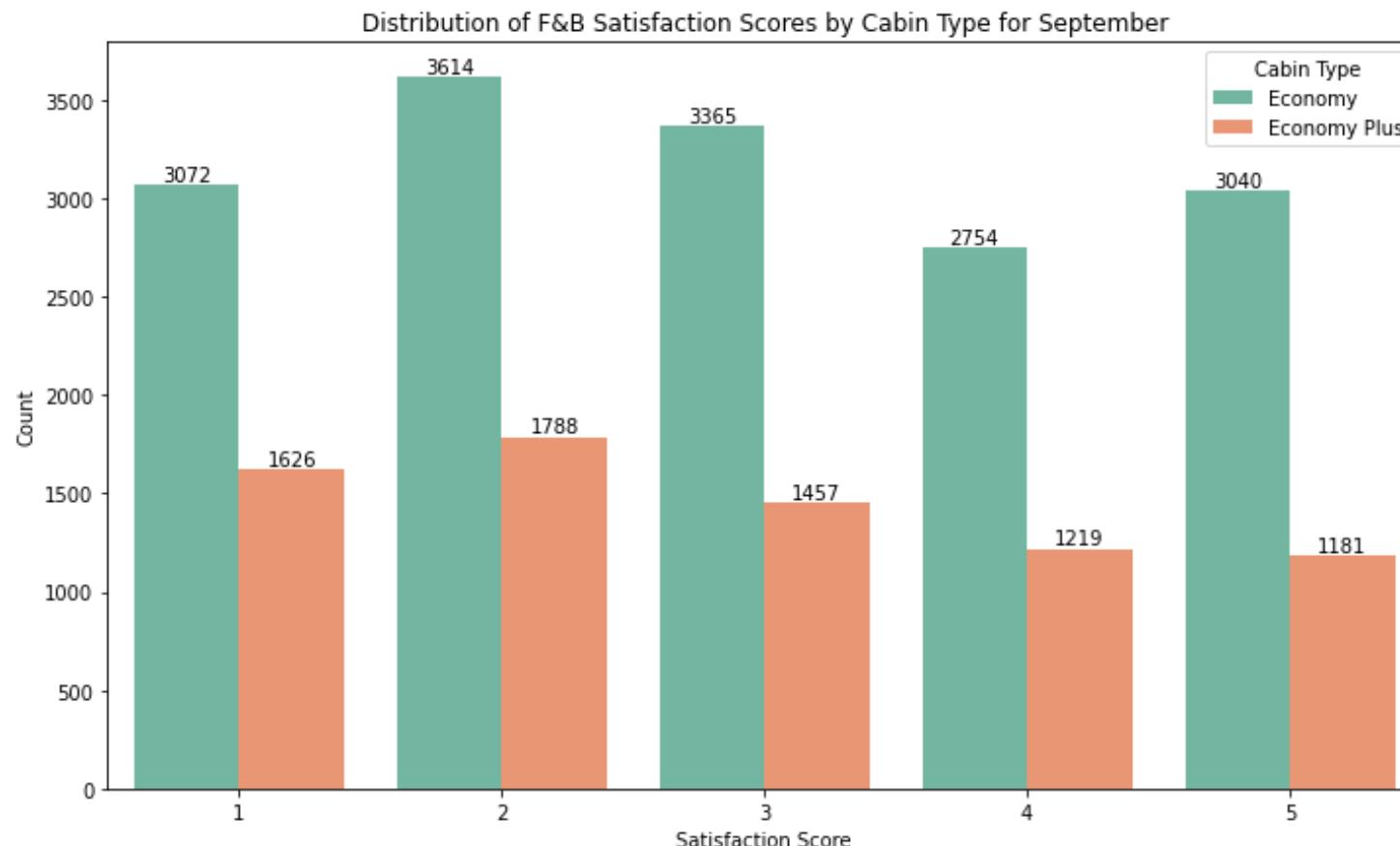
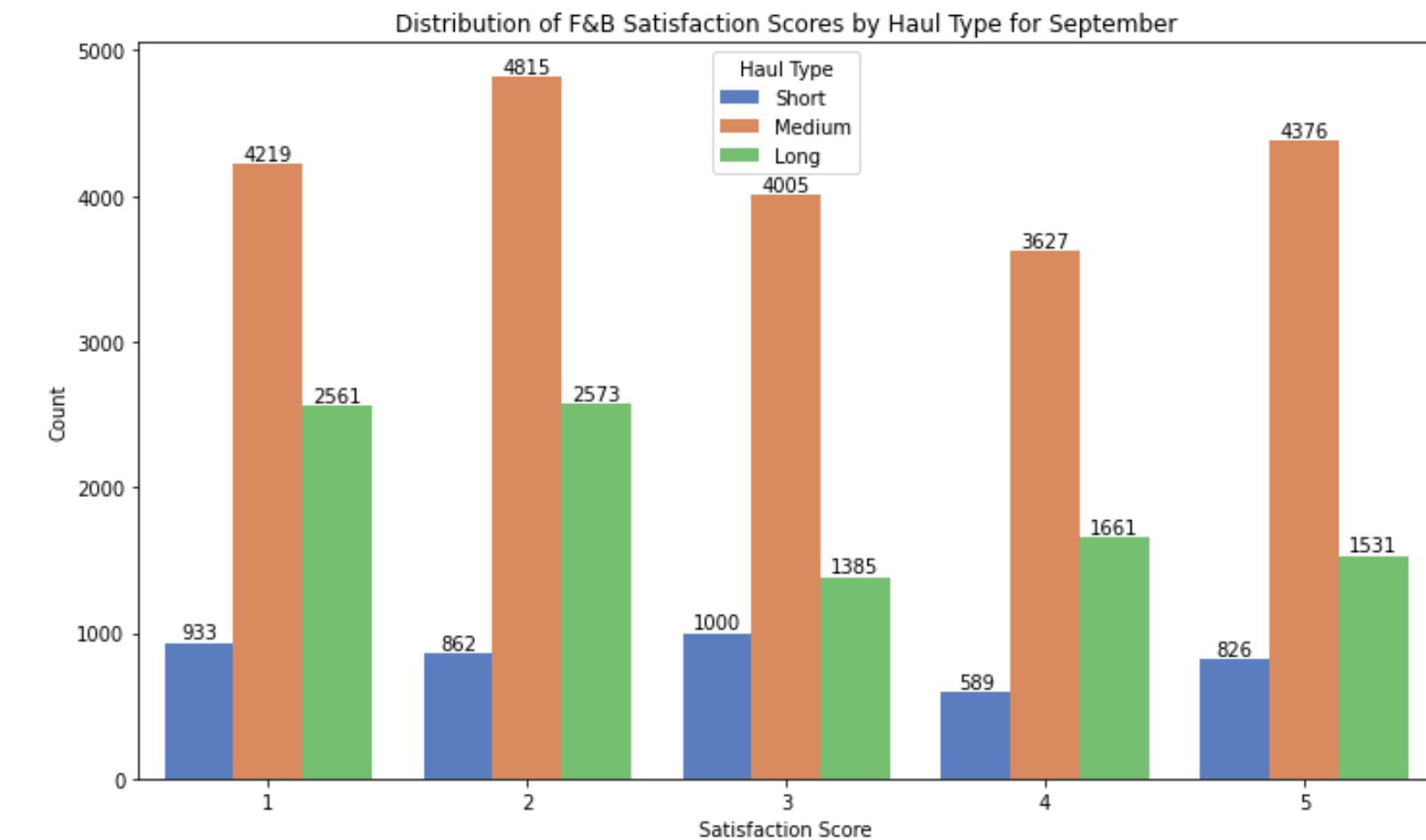
# Haul type

We'll start by examining the distribution of scores based on the haul type.

The distribution of F&B satisfaction scores by haul type indicates the following:

1. Short haul flights: These flights have a considerable number of passengers who are dissatisfied (scores of 1, 2, and 3).
2. Medium and Long haul flights: The majority of passengers on these flights appear to be satisfied with the F&B service, with scores predominantly being 4 and 5.

From this, we can infer that passengers on short haul flights are relatively less satisfied with the F&B service compared to those on medium and long haul flights.



# Cabin type

The distribution of F&B satisfaction scores by cabin type suggests:

1. Economy: A significant number of passengers in Economy class have given lower scores (1, 2, and 3).
2. Business/First: The majority of passengers in Business or First class seem to be satisfied, with scores predominantly being 4 and 5.

From this, we can deduce that passengers in Economy class are relatively less satisfied with the F&B service compared to those in Business or First class.



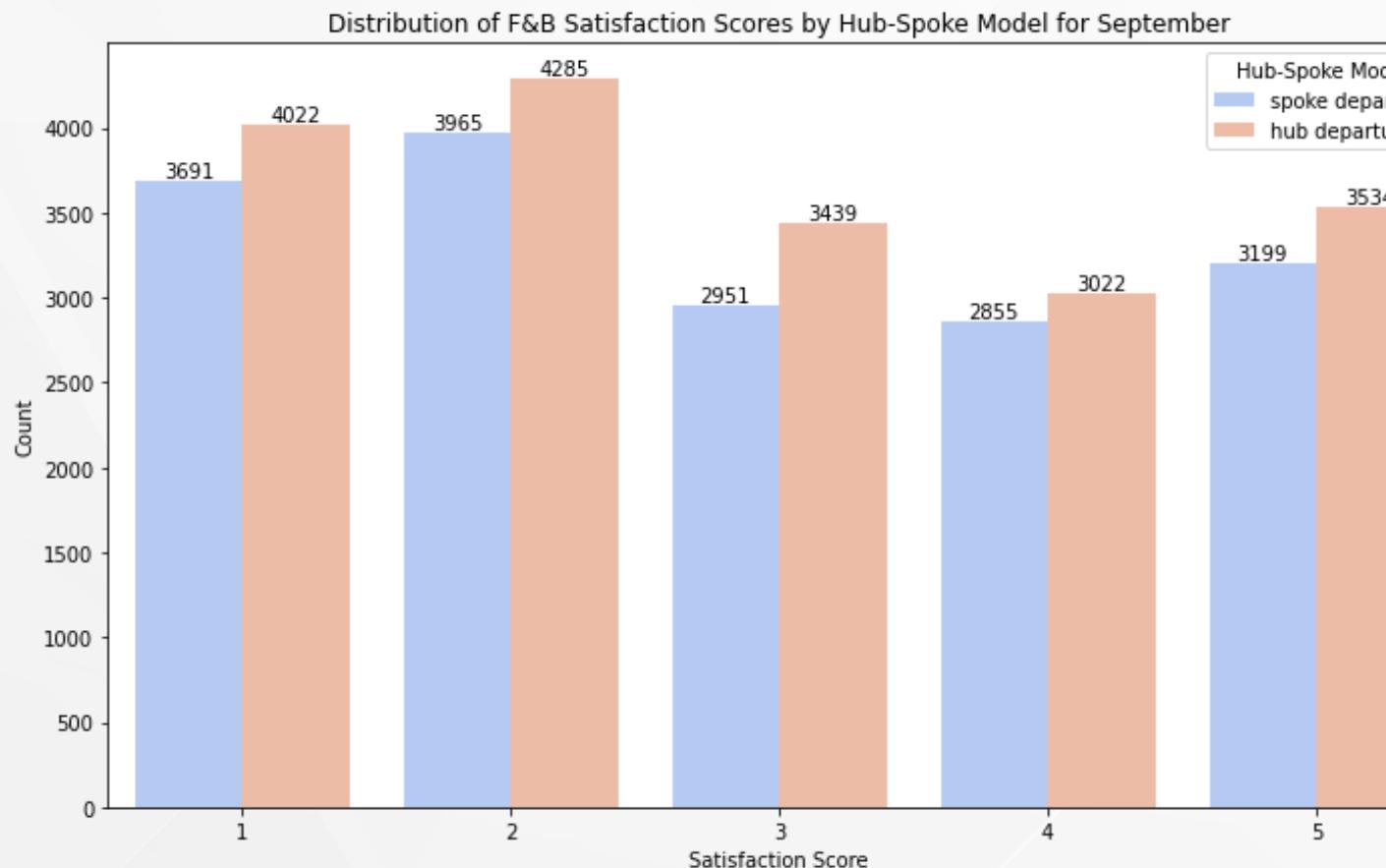
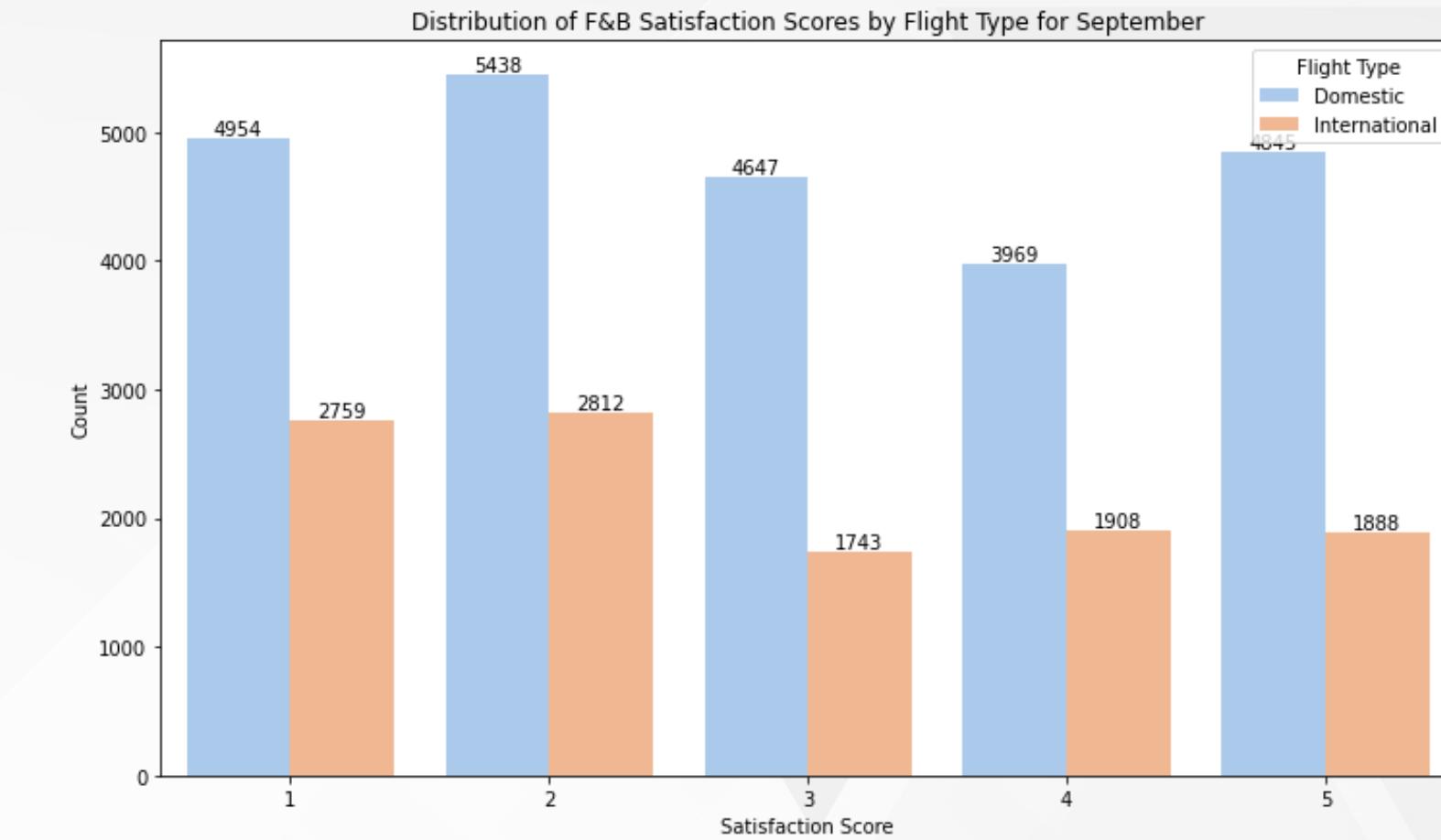
# Flight type

Let's further explore the distribution of scores based on the flight type (Domestic vs. International) and then by the Hub-Spoke model.

The distribution of F&B satisfaction scores by flight type shows:

1. Domestic Flights: The majority of scores come from domestic flights, and there's a significant number of passengers who have given lower scores (1, 2, and 3).
2. International Flights: The distribution suggests a more even spread of satisfaction levels, but the majority of passengers appear to be satisfied, with scores being 4 and 5.

From this, we can infer that passengers on domestic flights might have different expectations or experiences with the F&B service compared to those on international flights.



## Hub-Spoke Model

Lastly, let's check the distribution of scores based on the Hub-Spoke model.

The distribution of F&B satisfaction scores by the Hub-Spoke model reveals:

1. Hub Departure: The majority of passengers departing from hubs seem to be satisfied, with scores predominantly being 4 and 5. However, there is still a noticeable count of passengers who are dissatisfied.
2. Spoke Departure: Passengers departing from spokes display a more even distribution of satisfaction levels. There's a significant number of passengers who have given lower scores (1, 2, and 3).

From this, we can deduce that passengers departing from hubs might have a better F&B experience compared to those departing from spokes.

# SURVEY TRENDS: F&B CUSTOMER DISSATISFACTION

Let's dive into the customer comments to identify major themes and sentiments related to F&B. We'll first load the dataset Survey data \_Customer comments.csv and then perform a preliminary review of its content.

The dataset Survey data \_Customer comments.csv provides verbatim feedback from passengers about their flight experience, including comments specific to F&B.

To identify the major themes related to F&B, we'll perform a text analysis on the verbatim\_text column. We'll utilize Natural Language Processing (NLP) techniques to extract common themes and sentiments from the comments.

The steps involved are:

1. Preprocess the text data (e.g., lowercasing, removing punctuation and stopwords).
2. Tokenize the text data.
3. Analyze the frequency of words to identify common themes.



From the processed comments, the most common words/themes related to F&B complaints and feedback include:

1. Food (1294 mentions)
2. Snack (744 mentions)
3. Meal (631 mentions)
4. Options (474 mentions)
5. Snacks (455 mentions)
6. Better (425 mentions)
7. Chicken (377 mentions)
8. Class (353 mentions), likely referring to the cabin class and its association with the food provided.
9. Served (340 mentions)
10. Offer (328 mentions)

# COMMENT ANALYSIS: EXTRACTING KEY INSIGHTS



## Food quality or variety

From these comments, we can observe various sentiments:

- Some passengers appreciate the food and drink offerings, especially on longer or international flights.
- There are concerns about the quality and variety of food choices.
- The length of the flight seems to influence passengers' expectations regarding food service.
- Some passengers have specific needs or preferences, such as baby food options or vegetarian meals.



## Snacks Feedback

From these comments, we can draw the following insights:

- Some passengers appreciate the snacks, especially when they are complimentary.
- There's a recurrent theme about the size or portion of the snacks, with several passengers wishing for bigger or more generous portions.
- The type of snack (e.g., fruit) and quantity (e.g., more pieces) are areas of feedback.
- The duration of the flight influences passengers' expectations regarding snack offerings.

# STORY & RECOMMENDATIONS

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Setting the Stage: United Airlines is on a mission to enhance its customer experience, particularly in the realm of Food & Beverage (F&B) services. As we journey through the vast dataset of passenger feedback and operational metrics, we unveil patterns that tell a compelling tale.

## **The Satisfaction Spectrum**

Upon examining the F&B satisfaction scores, we notice a broad spectrum of sentiments. While many passengers express contentment, a significant portion conveys their dissatisfaction.

The data reveals that Economy passengers, those on short-haul flights, and those on domestic routes often report a lower satisfaction level.

## **The Voice of the People**

Delving into the realm of passenger comments, we uncover their wishes, their woes, and their wonder.

There's a longing for better food quality and variety, a desire for more substantial snack portions, and a yearning for an enhanced meal experience that matches the flight's duration.



# INITIAL RECOMMENDATION

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1. Enhance Economy Class Offerings: Given the lower satisfaction scores among Economy passengers, consider revamping the meal and snack options in this class. Introduce diverse menus and healthier alternatives.
2. Special Focus on Short-Haul & Domestic Flights: Recognizing that short-haul and domestic flights have a higher incidence of dissatisfaction, introduce snack boxes or small meal options that cater to these specific journeys.
3. Feedback Loop: Introduce a robust feedback mechanism on flights, allowing passengers to provide real-time feedback on their F&B experience. This will help in immediate redressal and continuous improvement.
4. Inventory Management: While our direct correlation analysis was inconclusive, maintaining an optimized inventory ensures that every passenger's choice is catered to, enhancing satisfaction.

# FUTURE DEEP-DIVES

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1. Detailed Inventory Analysis: Explore a potential link between inventory outages (especially in Business/First Class) and customer dissatisfaction.
2. Segmented Feedback Analysis: Deep dive into feedback from frequent flyers and loyalty program members to understand their specific needs and preferences.
3. Cultural & Regional Preferences: Analyze feedback based on the flight's origin and destination to cater to regional food preferences and enhance passenger experience.
4. Vendor & Supplier Analysis: Review the performance metrics of various F&B vendors and suppliers to ensure consistent quality and service.



**This is the link for the pdf which includes the full code for the given problem statement.**

**[https://drive.google.com/file/d/1CJd8KUDoe1UQqobgZH-qCeji3SNs6WC /view?usp=sharing](https://drive.google.com/file/d/1CJd8KUDoe1UQqobgZH-qCeji3SNs6WC/view?usp=sharing)**