

Introduction:

Beat Bobby Flay is a cooking competition show that airs on the Food Network. In each episode, two contestants battle it out to face Bobby Flay in the second round. The first round consists of the two contestants cooking for 20 minutes against each other using an ingredient chosen by Flay. Two guests, often a celebrity chef and a friend of Flay, then determine who cooked the better dish and will face Flay in the second round.

In the second round, the winning contestant faces Bobby Flay with their own signature dish. The goal is to see if they can beat Bobby at his own game.

In this technical analysis, we delve into the data from Seasons 1-31 to answer 14 questions about the show. Our goal is to uncover trends and patterns in the data and provide insights into the inner workings of the show.

The 14 questions we will be answering in this analysis are:

1. What is Bobby Flay's win rate?
2. What season of Beat Bobby Flay had the most episodes?
3. Which season of Beat Bobby Flay had the least episodes?
4. What is the average number of episodes per season of Beat Bobby Flay?
5. What season of Beat Bobby Flay did Bobby win the most?
6. What season of Beat Bobby Flay did Bobby lose the most?
7. How many different Ingredients has Bobby asked his contestants to use in Round 1?
8. Did ingredients in round 1 ever repeat? If so, which ingredients and how many times?
9. Was there a dish Bobby was asked to make that he won more than once?
10. Was there a dish Bobby was asked to make that he lost more than once?
11. How many different judges have been on Beat Bobby Flay?
12. Which Judge(s) appear the most on Beat Bobby Flay?
13. Were there any Contestants that beat Bobby more than once?
14. Which Guest(s) were able to bring Contestants to the show that beat Bobby Flay the most?

Using a combination of data manipulation and statistical techniques, we will uncover interesting trends and patterns in the data and provide insights into these questions. From win rates and episode counts to ingredients and judges, this analysis will provide a comprehensive look at Beat Bobby Flay.

Executive Summary of Findings.

Beat Bobby Flay is a popular cooking competition show where contestants try to out-cook celebrity chef Bobby Flay. Over the first 396 episodes, Bobby has proven to be a formidable opponent with a win rate of 61.87%. However, some seasons have been more successful for him than others. In Season 31, he won an impressive 85.71% of the time, while in Season 24, his win rate was only 38.46%. The deviation between each season is ~17.99%

The show has varied in length over the years, with Season 25 having the most episodes at 17 and Seasons 7 and 1 each having only 7 episodes. On average, there are about 12.8 episodes per season. The data demonstrates a standard deviation of ~1.92%.

One of the unique features of Beat Bobby Flay is the use of different ingredients in Round 1. Over the course of the show, Bobby has asked his contestants to use a total of 378 different ingredients. Some ingredients have been used more than once, with an 18-way tie for the most repeated ingredient. Shiitake Mushrooms, Coconut, Oysters, Pancetta, Marcona Almonds, Corn, Brussels sprouts, Pork chops, Pomegranates, Duck breast, Cauliflower, Skirt steak, Swordfish, Fresh squid, Chorizo, Zucchini, New York strip steak and Hanger steak have all been used twice.

In terms of dishes that Bobby has been asked to make more than once, there is an 11-way tie for dishes that he has won more than once: pork chops and applesauce, burger, seafood paella, chicken adobo, French toast, chicken and waffles, ribs, crab cakes, shrimp and grits, Cuban sandwich and duck a l'orange. On the other hand, there is an 8-way tie for dishes that he has lost more than once: wonton soup, huevos rancheros, beef empanada, chicken and dumplings, matzo ball soup chicken parmesan falafel gnocchi pasta carbonara Tom kha kai.

The show has featured a lot of different judges over its run. Leah Cohen and Michael Psilakis have appeared on the show the most times at 21 each while Lourdes Castro Tricia Williams and Hugh Mangum have appeared 19 times.

In terms of contestants who have beaten Bobby more than once Alex Guarnaschelli stands out as she has won two times. Some guests have also been particularly successful at bringing contestants who can beat Bobby Flay. Sunny Anderson leads the pack with 13 contestants who have beaten Bobby followed by Anne Burrell with 11 Alex Guarnaschelli with 10 Michael Symon with 9 and Scott Conant with 8.

In conclusion, the data shows that "Beat Bobby Flay" is a dynamic cooking competition show with a high level of variability in terms of the number of episodes per season and Bobby's win rate. Despite this variability, Bobby has proven to be a formidable opponent. With a total of 356 different judges and several guests who have been particularly successful at bringing contestants who can beat Bobby Flay, the show continues to keep viewers on their toes.

Analysis of Data Collection and Processing

Introduction: Beat Bobby Flay is a popular cooking competition show where contestants try to out-cook celebrity chef Bobby Flay. In this technical analysis, we delve into the data from Seasons 1-31 to answer questions about the show to see just how good Bobby really is. Using a combination of data manipulation and statistical techniques, we seek to uncover interesting trends and patterns in the data to provide insights into the inner workings of the show. From win rates and episode counts to ingredients and judges, this analysis provides a comprehensive look at Beat Bobby Flay with an aim to provide a detailed description of the process and tools used to collect and analyze. Our goal is to provide a transparent and reproducible methodology that can be used by others to verify our results.

This analysis was done in Excel where we used a combination of Formulas, Pivot Tables, VLOOKUP and charts to answer and visualize the data.

Data Collection: We sourced our data from the [Wikipedia page for Beat Bobby Flay](#) . To collect the data, we used Python to scrape the information from the page. Here is the code we used to achieve this:

```
import pandas as pd
from bs4 import BeautifulSoup
import requests

url = 'https://en.wikipedia.org/wiki/Beat_Bobby_Flay#cite_note-1'
html = requests.get(url).text
soup = BeautifulSoup(html, 'html.parser')

tables = soup.find_all('table', {'class': 'wikitable'})

data = []
for table in tables:
    headers = [header.text.strip() for header in table.find_all('th')]
    if set(headers) & set(["No.", "#", "Title", "Original airdate", "Guest(s)", "Ingredient(s)", "Contestants", "Judges", "Dish", "Winner"]):
        rows = table.find_all('tr')
        for row in rows[1:]:
            values = [td.text.strip() for td in row.find_all('td')]
            data.append(dict(zip(headers, values)))

df = pd.DataFrame(data)
df = df[["No.", "#", "Title", "Original airdate", "Guest(s)", "Ingredient(s)", "Contestants", "Judges", "Dish", "Winner"]]
df.to_csv(r'C:\Users\IAmRo\bbf.csv', index=False)
```

This code uses pandas, BeautifulSoup, and requests libraries to scrape the data from the Wikipedia page and save it as a CSV file. The resulting CSV file contained 442 rows and a count of 409 episodes spanning 32 seasons. Season 32 is currently on going and has been removed from our dataset, this brought our total row count to 397 and our episode count to 396 totaling 31 seasons.

Data Processing: After collecting the data, we used Excel to clean it and prepare it for analysis.

- We replaced special characters in names, such as “étouffée”, to improve their appearance in Excel.
- We added a column to the data that showed the season number and concatenated the season number and episode numbers into one field using the format “S”(Season # here)”E”(Episode # here), e.g., S23E7 or S1E9. This will allow us to quickly see what season and episode we are looking at. Used a formula to accomplish this. `=CONCATENATE(“S”,B3, “E”, C3)`
- Dates were not easy to work with in their native format, example: “AugustÂ 24,Â 2013Â (2013-08-24)” and “JanuaryÂ 1,Â 2015Â (2015-01-01)”. We want to extract the date in YYYY/MM/DD format. Used a formula to accomplish this. `=MID(F2,SEARCH(“”,F2)+1,SEARCH(“”,F2)-SEARCH(“”,F2)-1)`
- Each episode has three judges for the last “blind taste test” round. Our web scrape provided us with three judge names in column “K”. I wanted each judge to have their own column. Used Text to Columns to accomplish this followed by a trim formula to get rid of leading spaces. `Data > Text to Columns > Delimited > Comma > Finish =TRIM(K2)`
- Standard deviation was determined with the formula: $s = \sqrt{\frac{1}{N-1} \sum_{i=1}^N (x_i - \bar{x})^2}$

Now our spreadsheet looks better and is much easier to read. No doubt we will need to make further edits as we proceed but this looks like a good start.

Results Analysis

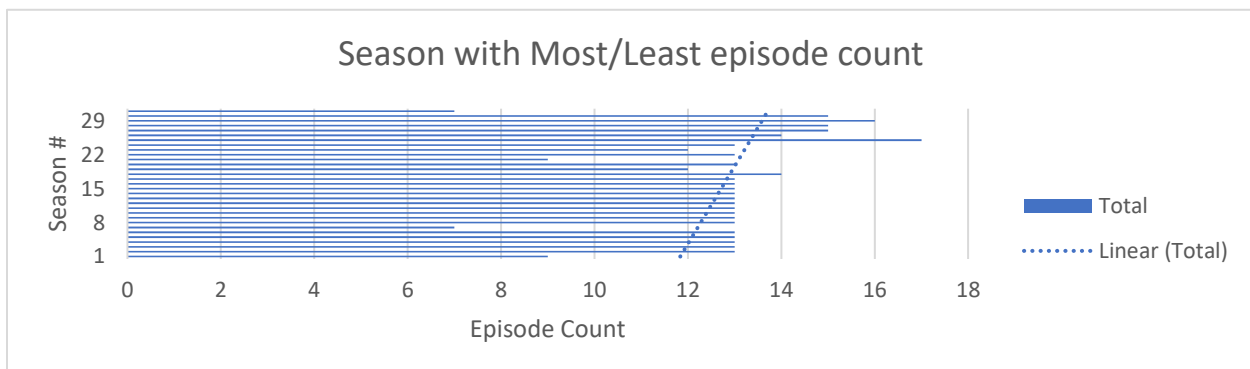
Q1: What is Bobby Flay's win rate: Bobby has a win rate of 61.87% over the first 396 episodes. The deviation between seasons is ~17.99% Accomplished using a Pivot Table in Excel where the "Winner" was in "Rows" and "Count of Winner" in Values as a percentage. Deviation was achieved by subtracting the average 61.87 from each season, squaring each value, sum of all squared values, dividing that value by # of seasons (31) and then taking the root of the remaining value.

Winner	% Won
Bobby Flay	61.87%
Alex Guarnaschelli	0.51%
Aaron Rivera	0.25%
Rosana Rivera	0.25%
Aarthi Sampath	0.25%

Q2: What season of Beat Bobby Flay had the highest number of episodes? Season 25 with 17 episodes. Accomplished using a Pivot Table in Excel where the "Season #" was in "Rows" and "Count of Season #" in Values.

Q3: Which season of Beat Bobby Flay had the least number of episodes? Season 7 and 1 each had only 7. The deviation between seasons is ~1.92 Accomplished using a Pivot Table in Excel where the "Season #" was in "Rows" and "Count of Season #" in Values. Deviation was achieved via the same process outlined in Q1.

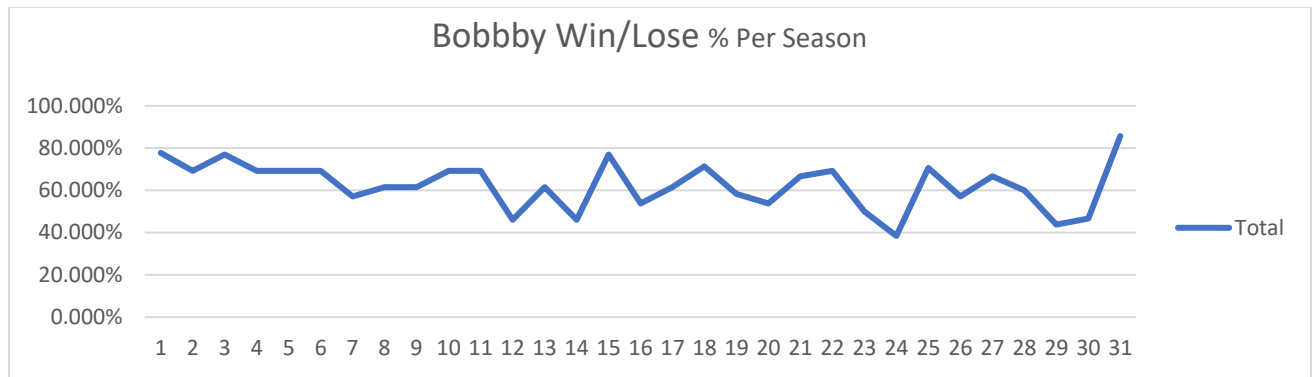
Q4: What is the average number of episodes per season of Beat Bobby Flay? 12.8 Already had the count of episodes per season # in our pivot chart that showed Most and Least episodes per season. Added a formula to show the average. `=GETPIVOTDATA("Season #",$A$2)/31`



Q5: What season of Beat Bobby Flay did Bobby have the highest winning percentage? Season 31, winning 85.71%. It's important to note that season 31 only had 7 episodes for this data set which brings this season total below the season average of 12.7. Used two parts together. A formula to count how many episodes are in a season using the value in column "B" and then the % of those episodes Bobby won using the value in column "O". We added the result to its own column.

```
=IF(COUNTIF($B$2:$B$398,B2)>0, COUNTIFS($B$2:$B$398,B2,$O$2:$O$398,"Bobby Flay")/COUNTIF($B$2:$B$398,B2), "")
```

Q6: What season of Beat Bobby Flay did Bobby have the lowest winning percentage? Season 24, winning 38.46%. There were 12 episodes in this season. Utilized the same formula from above to view the win % on the sheet, added the win% data & season data to a pivot table with a chart.



Q7: How many different Ingredients has Bobby asked his contestants to use in Round 1? 378. Accomplished with a formula that will calculate the distinct values from the master list.

=SUM(1/COUNTIF('bbf master'!\$I\$2:\$I\$397,'bbf master'!\$I\$2:\$I\$397))

Q8: Did ingredients in round 1 ever repeat? If so, which ingredients and how many times? 18-way tie. The following ingredients were all used two times.

Shiitake Mushrooms	Coconut
Oysters	Pancetta
Marcona Almonds	Corn
Brussels Sprouts	Pork Chops
Pomegranates	Duck Breast
Cauliflower	Skirt Steak
Swordfish	Fresh Squid
Chorizo	Zucchini
New York Strip Steak	Hanger Steak

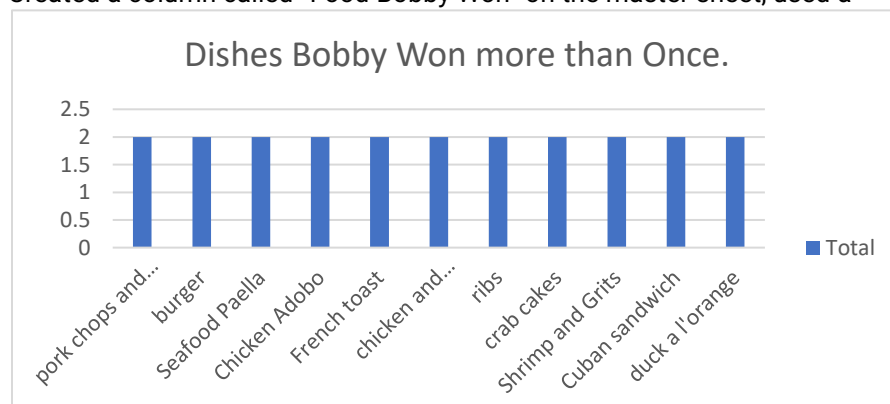
Accomplished with a Pivot table showing Ingredients as rows and Count of as a value.

Q9: Was there a dish that was chosen for Bobby to make more than once? Yes, Chicken and Waffles & Shrimp and Grits have each been made three times. Accomplished using Pivot table with Dish name and Count.

Q10: Was there a dish Bobby was asked to make that he won more than once? Yes, there is an 11-way tie. Created a column called "Food Bobby Won" on the master sheet, used a formula to check column "O", if "Bobby Flay" was the value of the cell it gave me the name of the food dish he won, if he lost it left the cell blank.

=IF(O2="Bobby Flay", N2, "")

A pivot table with "Food Bobby Won" on the Row and Count for Value was used here.



Q11: Was there a dish Bobby was asked to make that he lost more than once? Yes, there is an 8-way tie:

Created a column called "Food Bobby Lost" on the master sheet, used a formula to check column "O", if "Bobby Flay" was not the value of the cell it gave me the name of the food dish he lost, if he won it left the cell blank. `=IF(O2="Bobby Flay", N2, "")` A pivot table with "Food Bobby Lost" on the Row and Count for Value was used here.

Food	Count
wonton soup	2
huevos rancheros	2
beef empanada	2
Chicken and dumplings	2
matzo ball soup	2
chicken parmesan	2
falafel	2
gnocchi	2
pasta carbonara	1
Tom kha kai	1
Grand Total	18

Q12: How many different judges have been on Beat Bobby Flay? 356.

Accomplished by putting all Judge values in one column. Made a pivot table of Judges and the count where their name appears. There were 357 rows of data, my data starts on row 2. $357 - 1 = 356$.

Q13: Which Judge(s) appear the most on Beat Bobby Flay? There is a tie for first. Leah Cohen and Michael Psilakis have appeared on the show 21 times, Lourdes Castro, Tricia Williams and Hugh Mangum have appeared 19 times.

Judge Name	Count of Judges
Leah Cohen	21
Michael Psilakis	21
Lourdes Castro	19
Tricia Williams	19
Hugh Mangum	19
Aliya Leekong	18

Q14: Were there any Contestants that beat Bobby more than once? Yes, Alex Guarnaschelli

won two times. We already made a column that shows who won each episode. Applied conditional formatting with a formula to column N to highlight the cells that were duplicate between N2 and N397 where the name was not "Bobby Flay".

`=AND(COUNTIF($N$2:$N$397, N2)>1, N2<>"Bobby Flay")`

Q15: Which Guest(s) were able to bring Contestants to the show that beat Bobby Flay the most? Sunny Anderson

was able to bring 13 contestants that beat Bobby Flay. Anne Burrell was second with 11, Alex Guarnaschelli was third with 10, Michael Symon in fourth with 9 and Scott Conant in fifth with 8.

Guest Winner	Count of Guest winners
Sunny Anderson	13
Anne Burrell	11
Alex Guarnaschelli	10
Michael Symon	9
Scott Conant	8

-Accomplished using 4 formulas to get data from the master sheet showing concatenated episode, guests, contestants and winner when the winner was not Bobby Flay to a new sheet to work with.

`=IF('bbf master'!N2<>"Bobby Flay", bbf master!D2, "")` **This 4 times replacing "D2" as needed.

-Removed all the blank rows by doing a copy/paste special with values only (to remove formula fields from blank rows) then Go to Special > Blanks.

-Formula to check if the "Winner" in column N showed up before or after the comma in Column C. If before a 1 is assigned if after a 2 is assigned.

`=IF(ISNUMBER(FIND(D2, LEFT(C2, FIND(",", C2) - 1))), 1, 2)`

-Use the 1 or 2 value in column E to determine which name in Column B brought the winning contestant as the order of names in Column B aligns with the order of names in Column C.

`=IF(E2=1, LEFT(B2, FIND(",", B2) - 1), RIGHT(B2, LEN(B2) - FIND(",", B2) - 1))`

-Pivot table with Guest winner on Rows and Count of Guest winner for Value.

Conclusions about the Data

We have answered many questions about the show Beat Bobby Flay and from these answers we have uncovered a few more interesting connections. Over the thirty-one documented seasons there is a high level of variability in many aspects of the show, for example the number of episodes per season range from 7 to 17 and Bobby's win rate ranges from as low as 38% in a season to another season having a win rate of 85%.

My initial thought around the difference in episodes per season was the Covid-19 had a large impact on their ability to film, so there for perhaps there were a few seasons between end of 2019 and through 2022 that had a low count but that is not the case, in fact, the show averaged 13.7 episodes spanning Seasons 23-31, which accounts for the timeframe of 01/05/2020 – 09/15/2022. The overall average of episodes is 12.7 per season for the life of the show, so we saw an increase of 8% in episodes produced during the pandemic times. This data suggests the standard deviation of episodes in a season is ~1.92.

While there was a measurable uptick in the number of shows produced in this time, perhaps Bobby was feeling the heat, as his win rate during the pandemic was lower at a rate of 57.66%, compared to Bobby's win rate overall of 61.86%. It is only a 4.2% change, however, the last season we have data for, season 31, only had seven episodes and with Bobby winning 6 of those this one entry looks like it is doing a lot of lifting to bring that Covid average up. In the event we omitted the last year as it is a bit of an anomaly the win rate would be 54.15%, so either way we chalk it up, Bobby is winning more than half the time!

Bobby has kept contestants on their toes, introducing 378 different ingredients in round one over the shows 396 episodes analyzed. It is impressive that 95.5% of the time Bobby (or his Producers!!) can come up with something new to try and shake up the contestants. Speaking of ingredients, Bobby has been asked to make quite a few dishes more than once. Notably, contestants have requested Bobby to prepare Shrimp and Grits on three separate occasions, as well as Chicken and Waffles. It is worth noting that Bobby emerged victorious in two out of the three instances for each dish. Bobby is not always so lucky though, there are 8 dishes he has had a hard time with, losing to these dishes twice. Contestants would be wise to ask Bobby to make more Wontons, Gnocchi or Falafel as his track record is less than stellar. Bobby won eleven dishes more than once and lost eight dishes more than once, this suggests Bobby improves more times than he does not.

One of the more interesting findings in this data was learning that only one contestant has beat Bobby Flay more than once, and that was Alex Guarnaschelli winning Season 8 Episode 2 and Season 12 Episode 7. Guest Sunny Anderson was able to stump Bobby the most bringing 13 contestants to the arena to send Bobby home. "Beat Bobby Flay" has maintained an elevated level of variability over its 31 documented seasons. Despite

the Covid-19 pandemic, the show saw an increase in episodes produced and Bobby continued to challenge contestants by introducing a wide variety of ingredients. While his win rate decreased slightly during the pandemic, he still emerged victorious more than half the time.

Thank you for following me on this journey. This summary was authored by Robert Marston for the purpose of demonstrating problem solving, analytical acumen, report structuring and data manipulation using Excel and Python.