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ADVERTISING EFFECTIVENESS

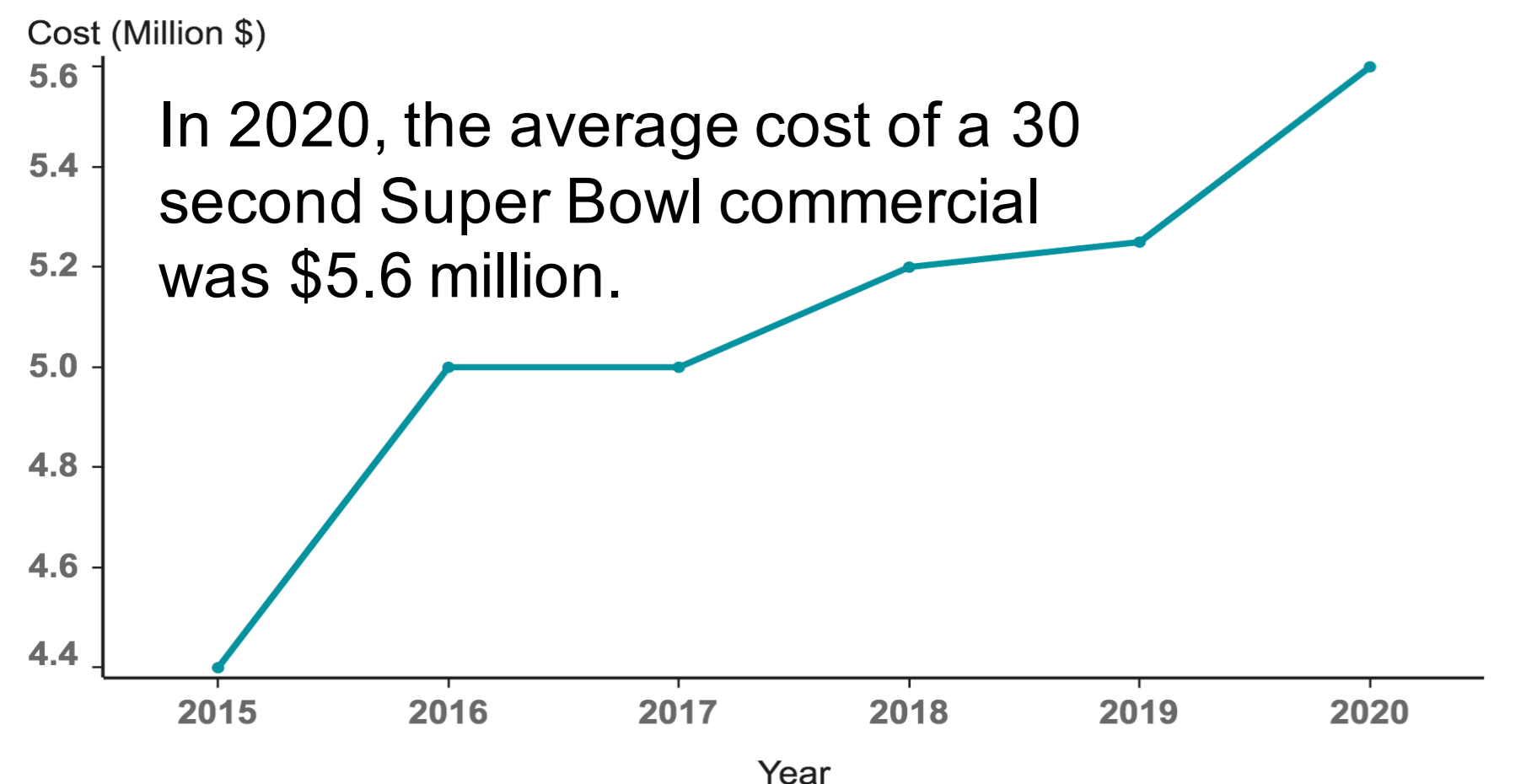
Do Super Bowl Ads Impact Stock Prices?

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Introduction

The Super Bowl has been a great platform for companies to market their products or services through 30-60 second commercials. These commercials are not only famous for their entertainment factor, but also their high costs. A significant question raised is whether these multimillion-dollar investments substantially impact the growth of a company?



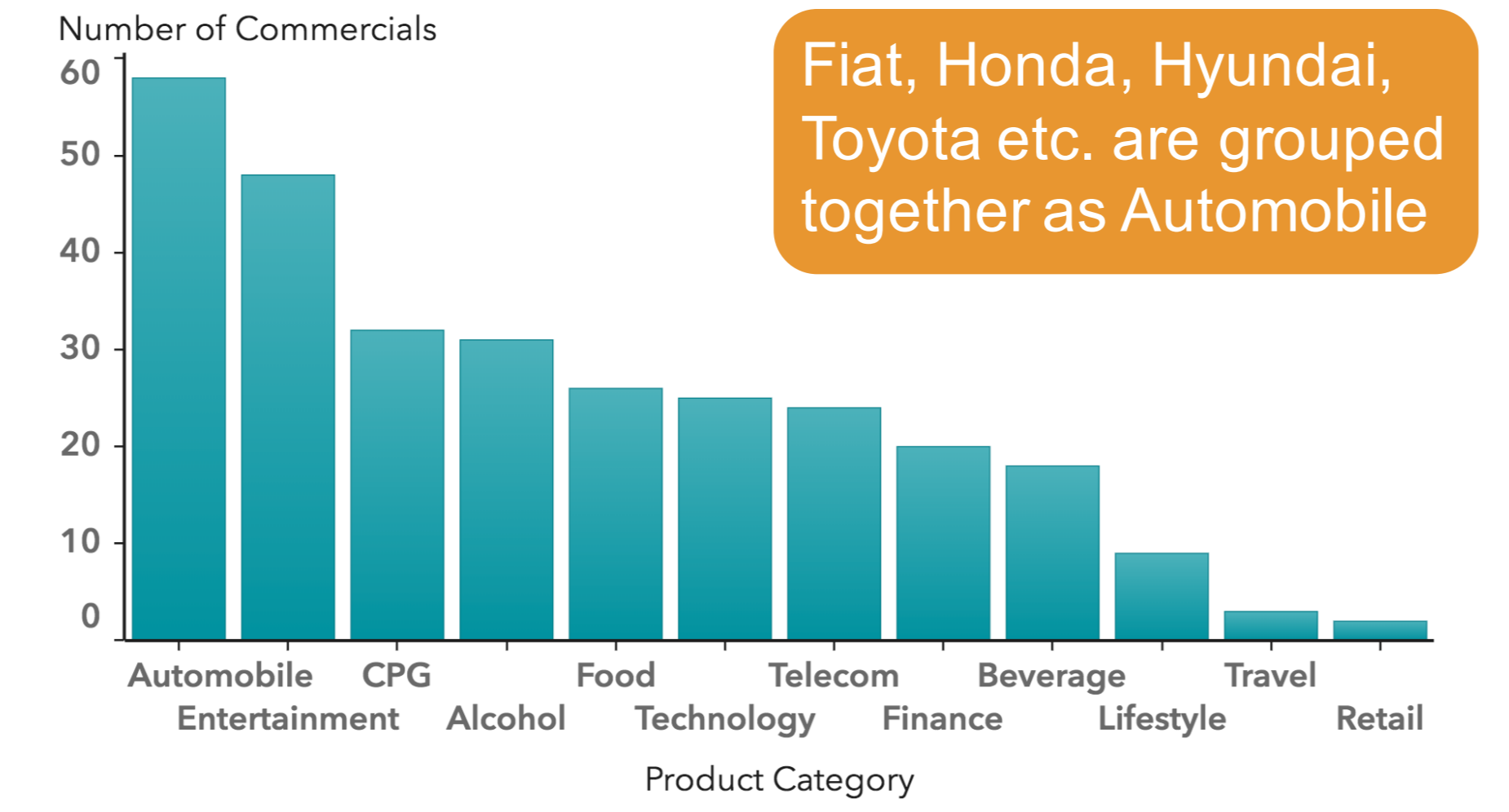
Since, the focus of these ads is both increase in sales and brand awareness, the return of investment of these ads can be inferred using its impact on the stock price of companies. The goal of this research is to understand the impact of various factors related to advertisements on the stock price of the companies soon after the event and one week later.

Data Description

- Commercial Data**
 - Brand Name
 - Ad Name
 - Average Rating
 - Air Time
 - Ranking
- Stock Data**
 - Stock Price before event
 - Stock Price after event
 - Stock Price one week after the event

Feature Engineering

Product Category Variable



Target Variable

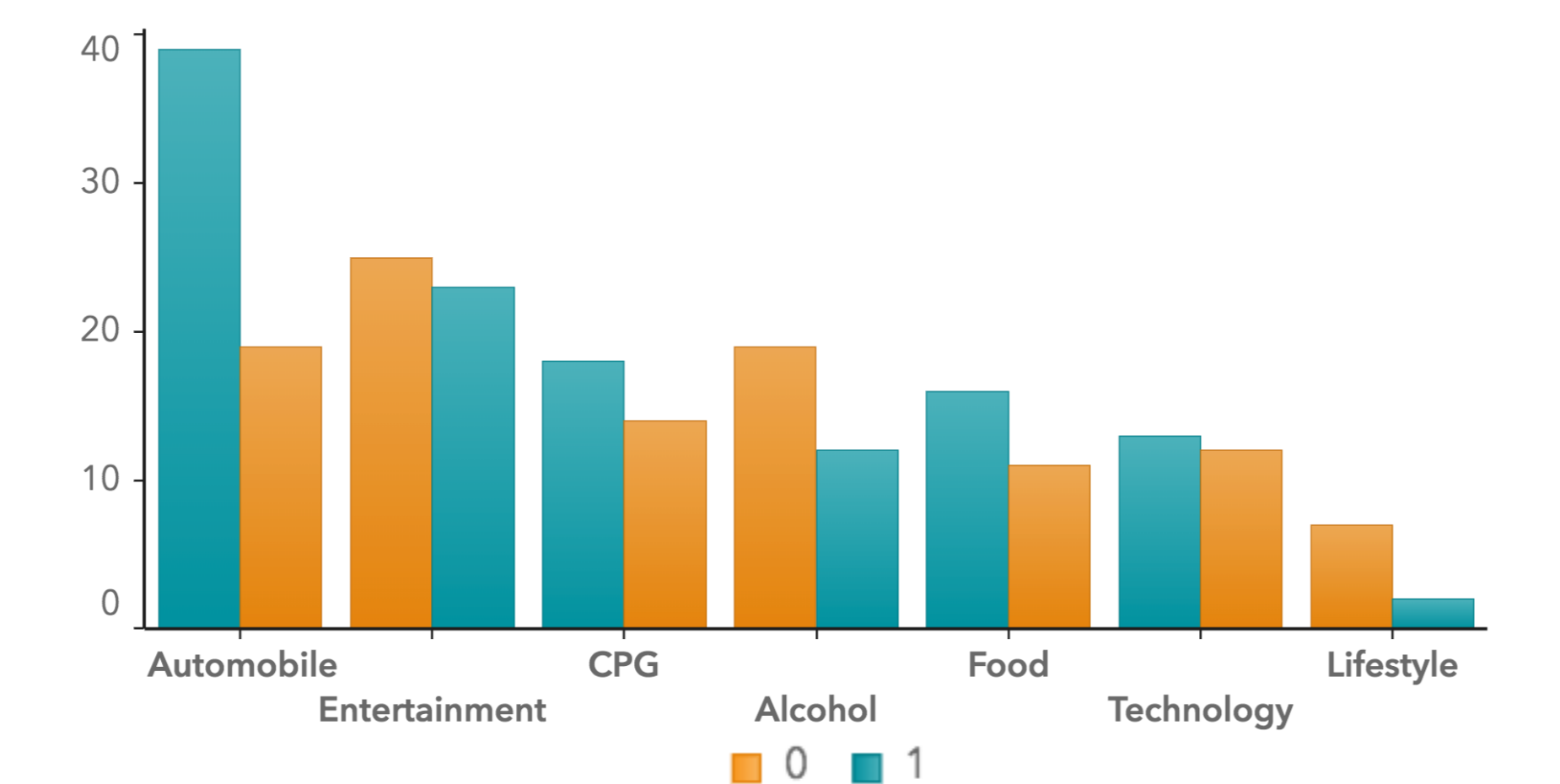
Immediate Change in Stock Price (SP0)

Stock Price after the event - Stock Price before the event

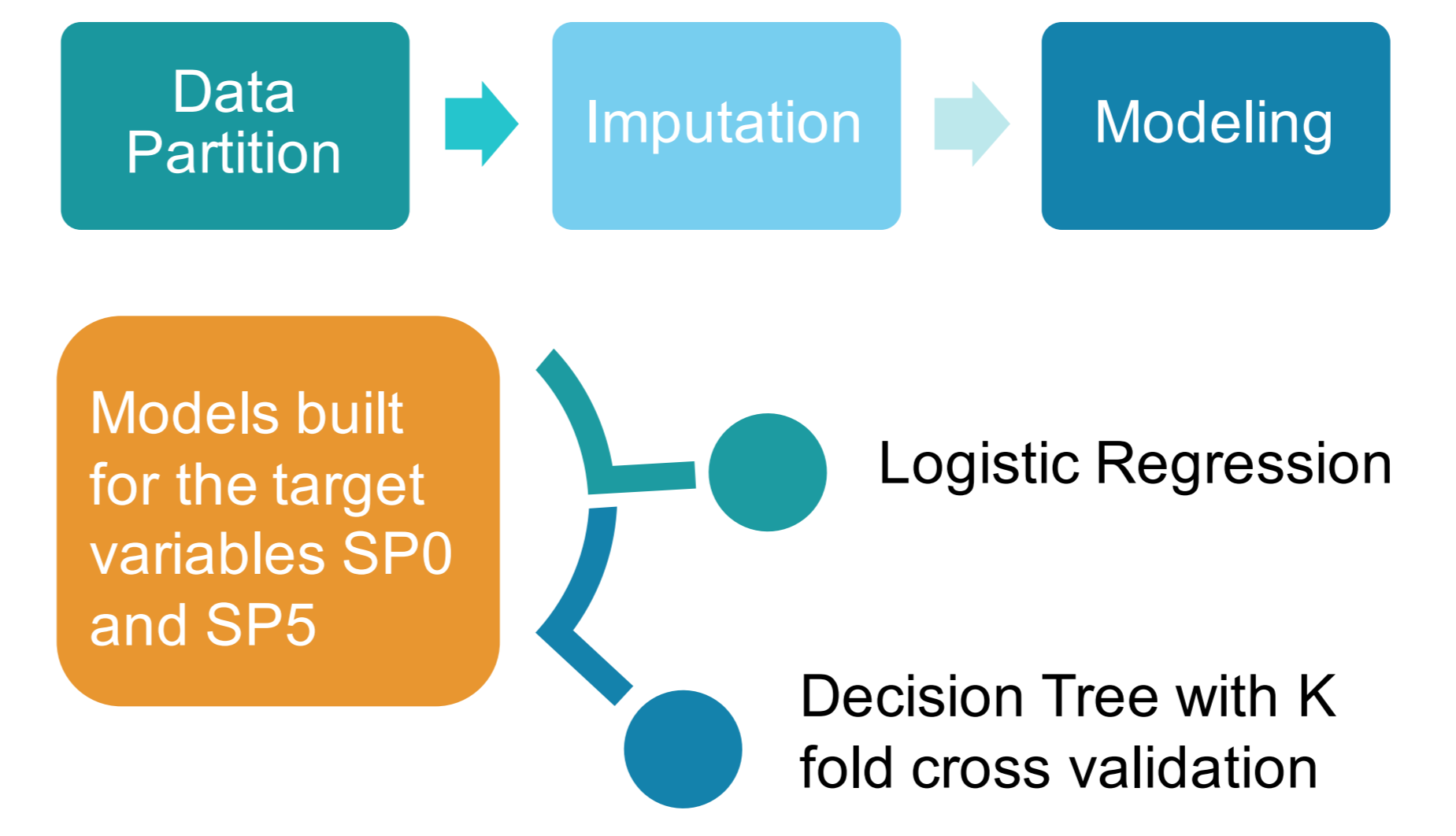
Change in Stock Price after a week (SP5)

Stock Price one week after the event - Stock Price before the event

Both target variables were converted into binary variables based on positive (1) and negative (0) difference. Categories like Automobile, Alcohol saw a decline in the stock price whereas Food and Technology saw growth in the stock price after game day.

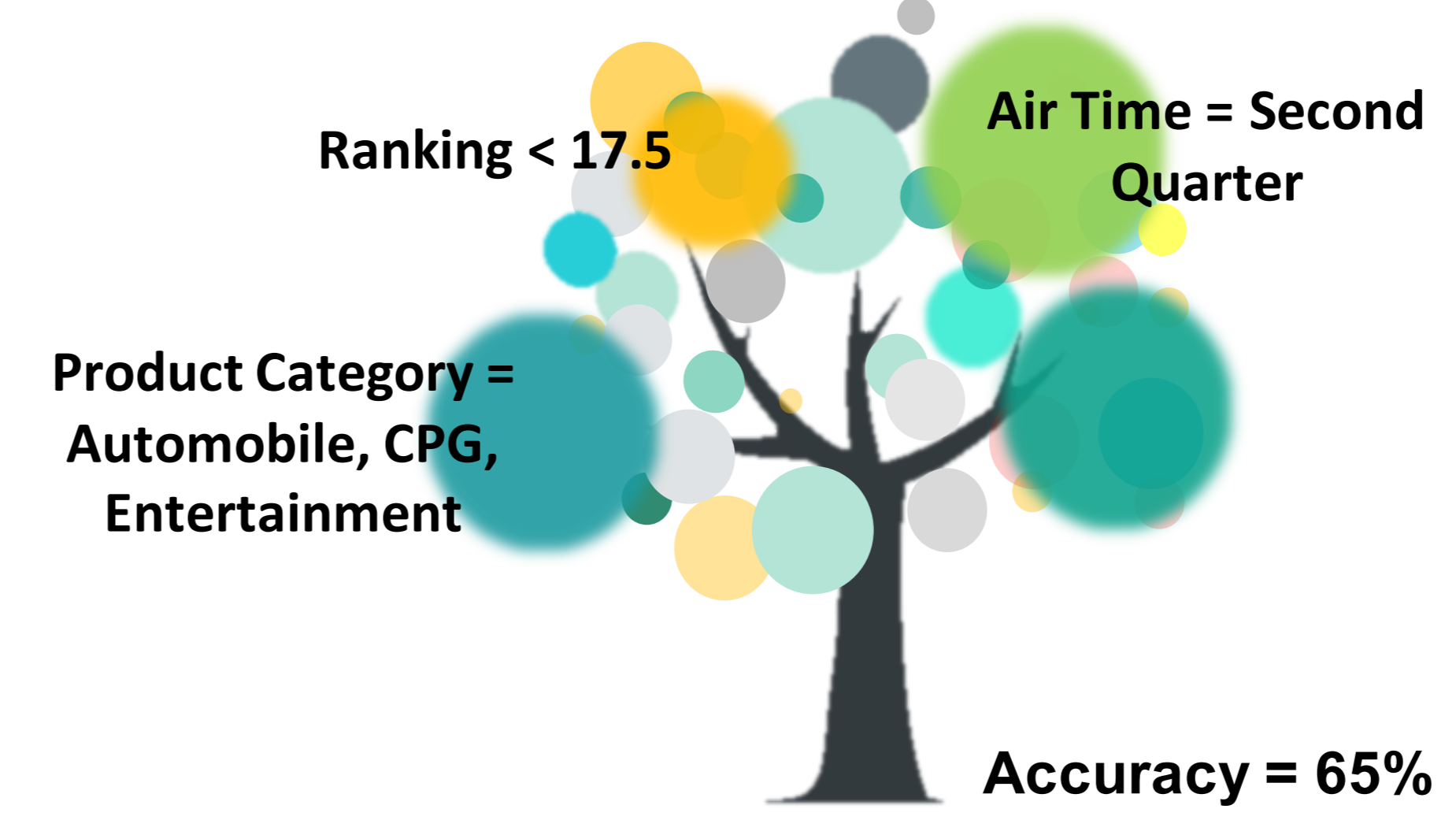


Methodology



Results

SP0 - Decision Tree



Probability that the stock price goes up immediately after the game is **45.45%**

SP5 - Logistic Regression

- Product Category = Alcohol, Automobile, Beverage, Lifestyle, Telecom
- Average Rating
- Ranking

Accuracy = 68%

Conclusion

Product Categories such as Automobile, Entertainment, CPG have the highest number of advertisements at the Super Bowl. The model shows that these generally have a positive impact on the stock price soon after the game. Whereas product categories like Alcohol and Lifestyle do not show a gain in stock price soon after the game.

Along with product category, the **Air Time** of an advertisement is also important. The analysis showed that the ads that were aired during the second quarter are more likely to make a positive impact on the immediate change in stock price.

Likeability also plays an important role in this analysis. Generally the ads having a **Rating** of 18 or below tend to reap more benefits for the brands.

The research can also be performed to analyze change in stock price over a month to gain more meaningful insights and to improve model accuracy.

Acknowledgment

I am thankful to SAS Global Forum for giving an opportunity to present my research at this event. Special thanks to Dr. Goutam Chakraborty for his continued guidance and mentorship.



Jaya Bhatia

The background of the banner is a scenic view of the Washington Monument at dusk, reflected in the water of the Tidal Basin. The sky is a mix of blue, purple, and orange. In the foreground, there are cherry blossom trees with pink and white flowers, and a stone walkway.

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