

Chopped Injuries Success Analysis

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Abstract

Chopped is a popular competitive cooking show based on the Food Network where four judges compete in creating a dish in three separate rounds after being given a basket of random ingredients that they need to incorporate into each dish. Within each episode is a panel of three judges, they are responsible for determining which chef will be eliminated or ‘Chopped’ from the competition.



Chopped Episode Environment – Appendix A

However, with cooking and being timed in a stressful environment, there is a possibility of harming oneself by either cutting or burning yourself in preparing the meal. By analyzing the data generated by each episode that was aired on the network, this analysis attempts to determine if a chef's title or the basket ingredient lead to a higher chance of injury on the show and if a

contestant can continue in winning the episode after receiving an injury during any of the rounds.

To complete this analysis of predicted success, I utilized a decision tree to determine how far a chef progress in the competition and if they will win overall as well as the most impactful ingredients and titles of a contestant.

Across the number of injured chefs on the show, they typically do not have a high chance of winning the show overall compared to other chefs due to the time it takes to address the injury and the constant contamination of the meal after cuts. Based on the results of this analysis, it will present information to future contestants to be cautious with certain basket ingredients as well as if they endure any injury while competing.

Chopped Injuries Success Analysis

Background

Chopped is a reality-based cooking television game show hosted by Tim Allen that will have four different chefs compete against each other to win \$10,000 dollars. The show is popular cooking show that has been on the Food Network for more than 10 years where there are three main judges that routinely changed each episode.

When it comes to each episode, it is broken down into three different rounds of appetizer, entrée, and dessert. For those episodes, each chef is given a basket of four randomized ingredients that are not typically used together and for them to use to prepare a dish to be judged by the chefs.

While the chefs are competing, they are allowed to bring their own knife set to use as well as complete access to the pantry of ingredients that contains nearly every other ingredient that they would need to complete the challenge. At the same time, they are offered more professional cooking equipment such as a deep fryer and an ice cream machine. To determine who is not eliminated from each round, the judges will look at their presentation, taste, and creativity of incorporating all the basket ingredients. However, for the last round, dessert, it will not only be judged by the dish but for the overall performance throughout the entire show. Throughout the stress of trying to create a dish with ingredients that some of the contestant have never seen or heard of, they must prepare at least four dishes to be judged under a certain time frame that changes between the rounds.

Because of all the added stress and faced paced environment of this competition, it is very possible that the chefs accidentally harm themselves either when chopping ingredients or burning themselves over the stove.



Example of Injury on Chopped – Appendix B

Therefore, the show has medical personnel readily available to assist and allow the contestants to continue competing. Even though some can continue, it is up to the judge's discretion whether they can continue further in the rounds. With the possibility of cutting oneself, there is the chance that blood or other bodily fluids reach the plate and contaminate the food preventing the judges from tasting the dish. Now, this does not necessarily mean that they are automatically 'Chopped' from the show. In some cases, the judges have examined the dish based on the other two factors of presentation and creativity and the contestant that has injured themselves has continued to the next round.

For these chefs that accidentally injure themselves can continue in the competition, it is important for them to understand the likelihood of them winning the episode all together upon injury. Even though each injury is different and in different locations, each contestant is under different stress and are different in how they can handle the new obstacle in front of them. With

the chefs that are competing, they will have some similarity in experience, but each will have different positions whether it be the executive chef, sou chef, the owner of a restaurant, or even a recent grad from culinary school.

Methods

This analysis will be using the “Chopped: 10+ Years of Episode Data” data set gathered by Jeffrey Braun from Kaggle. The data set consists of all the episodes of Chopped that have aired on the Food Network which is about 570 episodes that started in 2009. The dataset contains information about each episode including judges, contestants, ingredients, and special episode notes. With the show continuing to grow in popularity and spawn different versions of the show as well as international versions, the dataset is groomed to focus on the main show that sees the most contestants of different backgrounds and experiences.

After importing the data into a Jupyter Notebook by utilizing Python, I first began in splitting all the basket ingredients for each of the episodes since each episode at least contains twelve mystery ingredients. At the same time, I wanted to extract the titles of all the contestants to see the experience levels and to strip away the restaurants and locations. For each episode, I also searched for key words of bled, cut, burnt, etc. to determine the occurrences of injury as well as those that it occurred to and if they were the final chef.

Once the data has been prepared and edited for feature selection and modeling, the data was split by seventy and thirty for training and for testing. After the data has been split appropriately, I initialized a decision tree to be able to predict the place an injured chef will take within the competition. The goal of this model is to see how accurate it could predict whether a chef will

win it all. Along with the elimination position, it was important to also distinguish the important features and aspects that affect the chances of a chef winning at any point.

Results

The main goal of this project is to examine the Chopped Show data to try to identify if a chef who has been injured has the possibility of still winning the episode. Throughout various cooking shows, there has always been the chance of a contestant injuring themselves simply because of the tools being used are dangerous to them even if they have years of experience.

From simple exploration thus far in the analysis, chefs on the show have a 6.71% chance of injuring themselves while competing on the show based on all the episodes that have aired and reported the injury. I am sure that there are some injuries that may not have been significant enough or caught during the competition. Looking at the success rate of those chefs that did injure themselves while competing, only about 1.23% of contestants win after being injured within the competition. Focusing on the model, it was able to predict with a 95.92% accuracy.

confusion matrix	Predicted Loss	Predicted Win
True Loss	164	0
True Win	7	0

Appendix C - Confusion Matrix Results

Even though this is a high accuracy, it may have been skewed because the dataset is not that large overall preventing it from truly learning about the injuries on show.

Discussion/Conclusion

Even though there is not a high rate of injuries on the show, is it a smaller chance of winning the entire episode once you have been injured. When an injury is presented, it is addressed by the

medical team at the time which will handle it for you. However, this does not mean the clock stops ticking for the injured chef or the other competitors causing a hurdle for those that are hurt. It may simply be out of their hands once it happens. Therefore, from this analysis, I think it will provide an insight on the likelihood of success if you happen to injure yourself and if your professional cooking experience will play a role in this possible chance of still winning.

Acknowledgements

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Appendix

Appendix A

Chopped Episode Environment



Appendix B

Example of Injury on Chopped



Appendix C

Confusion Matrix Results

confusion matrix		Predicted Loss	Predicted Win
True Loss	164	0	
True Win	7	0	