

Project 3: Tennis Betting Analysis

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- **Overview**

- Multiple States within the USA have allowed sports wagering to become legalized over the last 3 years. In fact, over those last 3 years the states where sports betting is legalized generated over \$5 billion dollars in revenue (Legal Sports Report). With the excitement of legalization of sports betting comes new betters willing to put it all on the line to try and aspire to make a quick buck on the market. Unfortunately, that is not the case, and many individuals are misinformed and fall victim to losing their bankroll. For this reason, I have created a tennis betting analysis. Utilizing, simple betting strategies presented from Action Network, I plan to not only showcase the dangers of betting without a plan, but to also showcases where we can find simple betting opportunities on the market (Action Network). Overall, the goal of the project is to make newcomers to the betting community understand how to bet smart and increase the odds within their favor when they decide to put the money on their line.

- **Data Understanding**

- I acquired much of my data from a website called Tennis-Data.co.UK. The website features multiple datasets that features over 20 years of tennis data. This includes different tournaments, players\player ranking, location, tennis surface of the match, and odds of both players during the match that they played (Tennis-Data.co.UK).

- **Data Preparation**

- The data preparation for my project featured me generating my own dataset from the data that was presented on the website. I wanted to focus on the abilities of player performance when a player is playing in a normal tournament compared to a Grand Slam. By doing this I needed to include tournament type and where the match was played. For my additional features I included the Rank of the winning and losing player as well as the number of games won within each set of the match. Also, I included the odds from multiples sports books such as Bovada and Bet365, to compare market odds of the winners and losers of the match. Lastly, I needed to adjust to the odds that were not available, so I used data imputation of the median in order to account for the missing data that was not present.

- **EDA**

- During the EDA Process I reviewed the comparison of a player's ranking who won their match compared to player's ranking who lost their matches. Comparing my histograms there was a strong correlation between player ranking being higher for the winners of the match rather than the losers of the match (Appendix A). This makes sense since most of the players who are usually better on the tennis courts should defeat lower ranked opponents. Additionally, I can see many of the losers' ranks were mid-tier according to the histogram, which further proves the point (Appendix B). The two graphics had me wondering if that a profitable betting strategy would be just to bet the higher ranked opponent within a match.

By knowing this I wanted to compare winning ranked tennis players and discover how well they performed on the Surface and whether they played better outdoors or indoors. Generating two bar graphs for each scenario I discovered most Winning ranked Players play better on Grass Courts as well as play better outside. This makes sense because most grass courts are outside (Appendix C & D). Additionally, the second-best surface that winning ranked players play on is clay, which is also outside majority of the time.

- **Method\Results**

- To understand if betting odds on the market are good indicators of the prediction of the match I needed to generate a graphic that would compare the two.

Appendix E showcases the comparison of betting odds and outcome. Reviewing the graphic, I can confirm that the betting market odds are very good predictions of what can occur within a match and could create possible betting opportunities. By knowing this I have created two simple betting strategies that general betters follow; however, I have included betting on Grand Slam and Non-Grand Slam Tournaments. Appendix F showcases betting on just Underdogs or Favorites within Non-Grand Slam Events. From the visual we can see that betting on just one side in Non-Grand Slam Events is not a profitable strategy long term and a better should stay away from that approach. Lastly, in appendix G we perform the same strategy except for Grand Slam events. Reviewing the visual we can see that favorites are perform particularly well during Grand Slam events, so a better will

want to look for possible betting opportunities within Grand Slams; however, there is still a small decrease over time on betting them.

- **Conclusion**

- In conclusion of my analysis, I would not recommend a new better to follow a strategy of just betting underdogs or favorites. As you can see from the graphics within the methods section both produce negative results over a long period of time. NuWireInvestor's website suggests a successful sports better wins between "52% - 54%" of their bets to remain profitable (NuWireSports). As we can see from the results neither strategy is producing these results. If a better did end up following the favorites approach during a Grand Slam event, they would need to account for upsets that do occur when betting favorites lose. Sportsbooks generate money off big favorites losing on the market because betters must lay more money on a favorite to profit over time. Here is an example from Toward Data Science, if a favorite is - 350 on a betting market, a better will need to put up 350 dollars to make a 100-dollar profit. If that -350 were to lose, the better would be minus 350 dollars in the hole. It would take the better to win 4 straight bets in a row to get out of the hole to be in the green again (Doan, T. N.). My recommendation for a new better is to focus on various bets that have closer to even odds, so you can reduce the amount lost between bets. Deep dive media suggests it would help a better in the long run not losing as much so they do not deplete their bankroll (Capper.W). Lastly, a better should also investigate spread betting on tennis matches rather than, focusing on just straight up Underdog or

Favorite betting. This reduces risk amount to almost even odds and provides value on the underdogs without having he or she to win the game straight up (Barnett, T., & Clarke, S. R). Overall, my intention of this project was to bring attention to naïve betters the dangers of betting a certain way and showcase where a better may find value. The better must remember that it is a long-term investment with day-to-day betting not just a get rich quick scheme, which takes full commitment over time.

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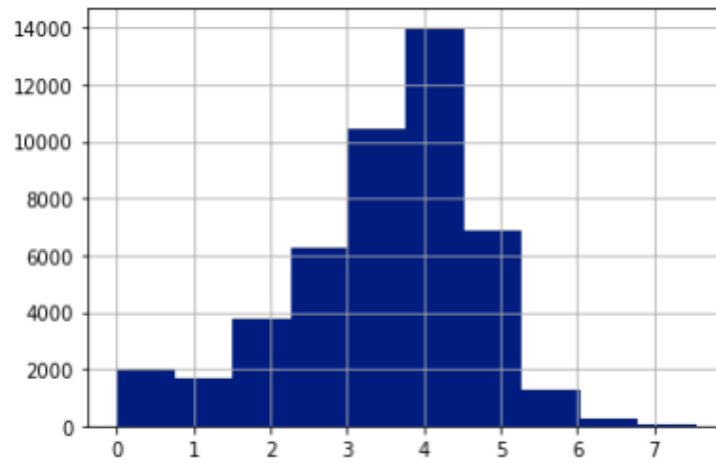
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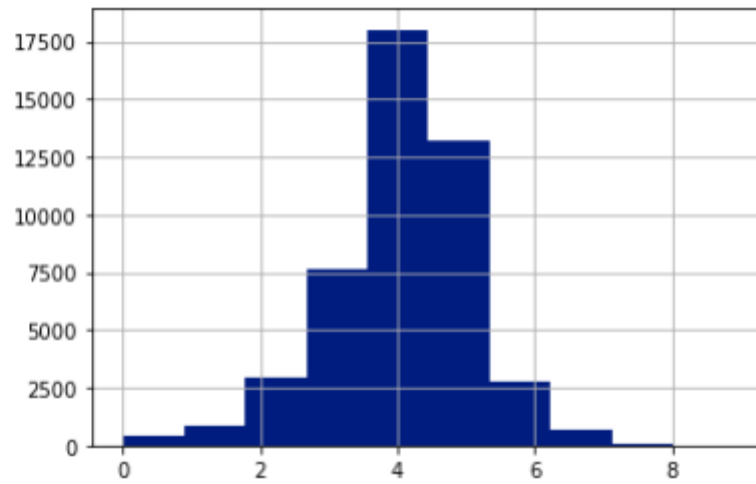
NuWireInvestor. <https://www.nuwireinvestor.com/sports-betting-as-a-profitable-investment-in-2021/>

Appendices

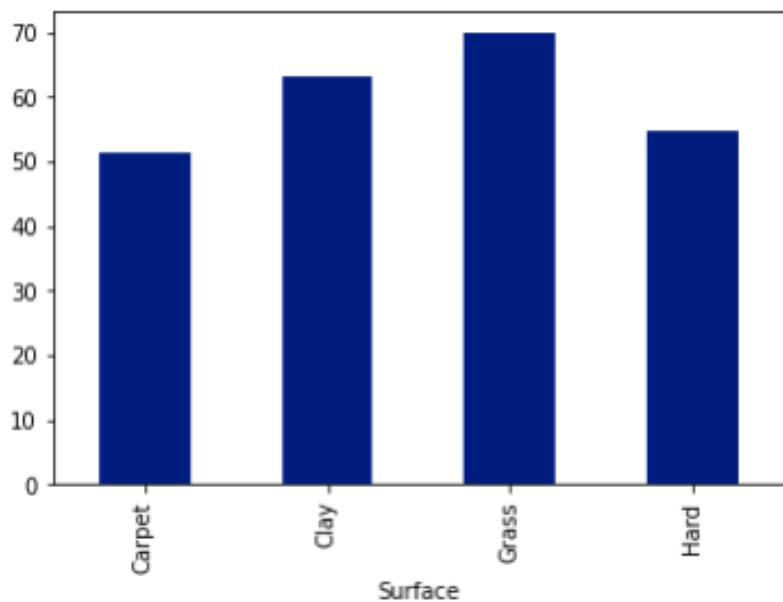
Appendix A



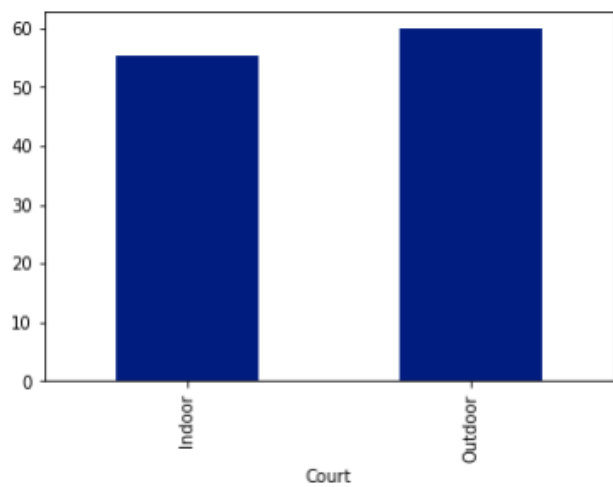
Appendix B



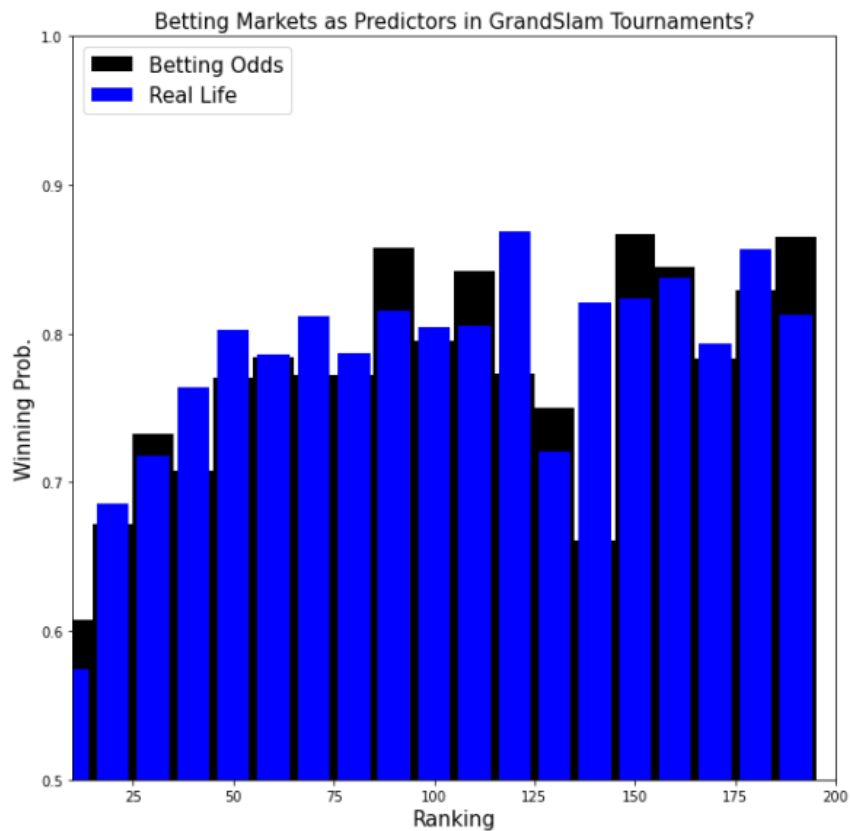
Appendix C



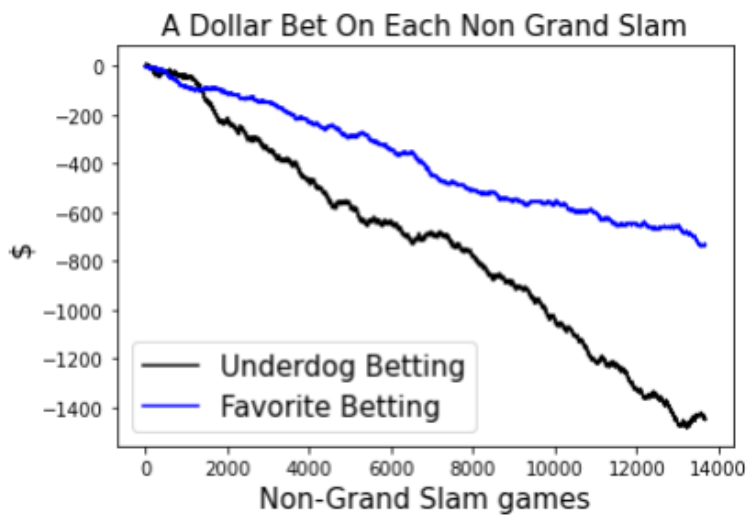
Appendix D



Appendix E



Appendix F



Appendix G

