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Exercise 6.1

Data Source Summary

- The Data selected for this project is the UFC fight historical data from 1993 to 2021.
- This data is external and open source because it is made available to the public.
- This data was scraped using beautifulsoup and uploaded on [Kaggle](#).
- This data spans from 1993 to 2021 containing variables such as
 - R_ and B_ (prefix signifies red and blue corner fighter stats respectively)
 - _opp_ (containing columns is the average of damage done by the opponent on the fighter)
 - KD (number of knockdowns)
 - SIG_STR (no. of significant strikes 'landed of attempted')
 - SIG_STR_pct (significant strikes percentage)
 - TOTAL_STR (total strikes 'landed of attempted')
 - TD (no. of takedowns)
 - TD_pct (takedown percentages)
 - SUB_ATT (no. of submission attempts)
 - PASS (no. times the guard was passed?)
 - REV (no. of Reversals landed)
 - HEAD (no. of significant strikes to the head 'landed of attempted')
 - BODY (no. of significant strikes to the body 'landed of attempted')
 - CLINCH (no. of significant strikes in the clinch 'landed of attempted')
 - GROUND (no. of significant strikes on the ground 'landed of attempted')
 - win_by (method of win)
 - last_round (last round of the fight (ex. if it was a KO in 1st, then this will be 1))
 - last_round_time (when the fight ended in the last round)
 - Format (the format of the fight (3 rounds, 5 rounds etc.))
 - Referee (the name of the Ref)
 - date (the date of the fight)
 - location (the location in which the event took place)
 - Fight_type (which weight class and whether it's a title bout or not)
 - Winner (the winner of the fight)
 - Stance (the stance of the fighter (orthodox, southpaw, etc.))
 - Height_cms (the height in centimetres)
 - Reach_cms (the reach of the fighter (arm span) in centimetre)
 - Weight_lbs (the weight of the fighter in pounds (lbs))
 - age (age of the fighter)
 - title_bout (Boolean value of whether it is title fight or not)
 - weight_class (which weight class the fight is in (Bantamweight, heavyweight, Women's flyweight, etc.))

- o no_of_rounds (the number of rounds the fight was scheduled for)
- o current_lose_streak is the count of current concurrent losses of the fighter
- o current_win_streak is the count of current concurrent wins of the fighter
- o draw is the number of draws in the fighter's ufc career
- o wins is the number of wins in the fighter's ufc career
- o losses is the number of losses in the fighter's ufc career
- o total_rounds_fought is the average of total rounds fought by the fighter
- o total_time_fought(seconds) is the count of total time spent fighting in seconds
- o total_title_bouts is the total number of title bouts taken part in by the fighter
- o win_by_Decision_Majority is the number of wins by majority judges decision in the fighter's UFC career
- o win_by_Decision_Split is the number of wins by split judges decision in the fighter's UFC career
- o win_by_Decision_Unanimous is the number of wins by unanimous judge decision in the fighter's UFC career
- o win_by_KO/TKO is the number of wins by knockout in the fighter's UFC career
- o win_by_Submission is the number of wins by submission in the fighter's UFC career
- o win_by_TKO_Doctor_Stoppage is the number of wins by doctor stoppage in the fighter's ufc career

Data Choice

As someone who loves sports, I've always been fascinated by using historical data to predict and analyze sporting events. The data used is of high quality and as detailed as possible which would help in answering the hypothesis that will be derived.

Data Profile

Descriptive Analysis

| | B_avg_KD | B_avg_opp_KD | B_avg_SIG_STR_pct | B_avg_opp_SIG_STR_pct | B_avg_TD_pct | B_avg_opp_TD_pct | B_avg_SUB_ATT | B_avg_opp_SUB_ATT |
|-------|-------------|--------------|-------------------|-----------------------|--------------|------------------|---------------|-------------------|
| count | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 |
| mean | 0.247476 | 0.176818 | 0.453310 | 0.434290 | 0.292650 | 0.268742 | 0.478884 | 0.409276 |
| std | 0.378509 | 0.324633 | 0.130458 | 0.132618 | 0.273628 | 0.267178 | 0.724229 | 0.653826 |
| min | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 25% | 0.000000 | 0.000000 | 0.376489 | 0.351045 | 0.031250 | 0.033203 | 0.000000 | 0.000000 |
| 50% | 0.015625 | 0.000000 | 0.450000 | 0.427500 | 0.250000 | 0.200000 | 0.148468 | 0.098389 |
| 75% | 0.500000 | 0.250000 | 0.527500 | 0.510000 | 0.500000 | 0.422812 | 0.750000 | 0.531250 |
| max | 5.000000 | 3.000000 | 1.000000 | 1.000000 | 1.000000 | 1.000000 | 8.000000 | 7.000000 |

| B_avg_REV | B_avg_opp_REV | B_avg_SIG_STR_att | B_avg_SIG_STR_landed | B_avg_opp_SIG_STR_att | B_avg_opp_SIG_STR_landed | B_avg_TOTAL_STR_att |
|------------|---------------|-------------------|----------------------|-----------------------|--------------------------|---------------------|
| 4585.00000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 |
| 0.15673 | 0.141306 | 76.288358 | 33.337168 | 73.092895 | 31.053464 | 97.635001 |
| 0.34199 | 0.322623 | 51.175465 | 22.030474 | 49.911897 | 21.371161 | 57.524779 |
| 0.00000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 0.00000 | 0.000000 | 38.261230 | 17.000000 | 36.405273 | 15.562500 | 55.484375 |
| 0.00000 | 0.000000 | 66.500000 | 29.687500 | 64.312305 | 27.343750 | 89.750000 |
| 0.12500 | 0.125000 | 104.750000 | 45.500000 | 99.875000 | 42.000000 | 132.470703 |
| 4.00000 | 3.000000 | 456.000000 | 186.000000 | 403.000000 | 202.000000 | 524.000000 |

| B_avg_TOTAL_STR_landed | B_avg_opp_TOTAL_STR_att | B_avg_opp_TOTAL_STR_landed | B_avg_TD_att | B_avg_TD_landed | B_avg_opp_TD_att | B_avg_opp_TD_landed |
|------------------------|-------------------------|----------------------------|--------------|-----------------|------------------|---------------------|
| 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 |
| 52.281925 | 92.716135 | 48.504853 | 2.726783 | 1.109138 | 2.861216 | 1.073168 |
| 31.771066 | 54.871771 | 29.863232 | 2.836065 | 1.328047 | 2.738086 | 1.261016 |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 28.937500 | 52.985352 | 26.875000 | 0.625000 | 0.062500 | 1.000000 | 0.125000 |
| 48.000000 | 85.531250 | 44.411522 | 2.000000 | 0.750000 | 2.054688 | 0.750000 |
| 70.000000 | 125.726562 | 65.187500 | 4.000000 | 1.562500 | 4.000000 | 1.500000 |
| 242.000000 | 433.000000 | 232.000000 | 19.000000 | 10.968750 | 20.000000 | 11.500000 |

| B_avg_HEAD_att | B_avg_HEAD_landed | B_avg_opp_HEAD_att | B_avg_opp_HEAD_landed | B_avg_BODY_att | B_avg_BODY_landed | B_avg_opp_BODY_att |
|----------------|-------------------|--------------------|-----------------------|----------------|-------------------|--------------------|
| 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 |
| 59.984433 | 21.387261 | 57.055890 | 19.403349 | 9.684013 | 6.681643 | 9.370116 |
| 42.085146 | 15.314792 | 40.686905 | 14.609626 | 8.377459 | 5.920334 | 7.906397 |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 29.296875 | 10.500000 | 27.875000 | 9.000000 | 3.585938 | 2.375000 | 3.500000 |
| 51.187500 | 18.335938 | 49.612305 | 16.280411 | 7.500000 | 5.076477 | 7.500000 |
| 81.500000 | 28.815918 | 77.328781 | 26.500000 | 13.500000 | 9.296875 | 13.000000 |
| 397.000000 | 138.000000 | 373.000000 | 126.000000 | 71.000000 | 64.000000 | 71.000000 |

| B_avg_opp_BODY_landed | B_avg_LEG_att | B_avg_LEG_landed | B_avg_opp_LEG_att | B_avg_opp_LEG_landed | B_avg_DISTANCE_att | B_avg_DISTANCE_landed |
|-----------------------|---------------|------------------|-------------------|----------------------|--------------------|-----------------------|
| 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 |
| 6.352129 | 6.619912 | 5.268264 | 6.666888 | 5.297986 | 60.059833 | 22.313082 |
| 5.672195 | 6.852332 | 5.496281 | 6.582663 | 5.342577 | 48.453182 | 19.216578 |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 2.250000 | 1.875870 | 1.437500 | 2.000000 | 1.625000 | 23.000000 | 8.000000 |
| 5.000000 | 4.500000 | 3.625000 | 4.984375 | 3.937500 | 48.687500 | 17.000000 |
| 8.781250 | 9.250000 | 7.281631 | 9.125000 | 7.356445 | 84.718750 | 31.574707 |
| 64.000000 | 62.830322 | 51.635986 | 69.000000 | 58.000000 | 422.000000 | 161.000000 |

| B_avg_GROUND_att | B_avg_GROUND_landed | B_avg_opp_GROUND_att | B_avg_opp_GROUND_landed | B_avg_CTRL_time(seconds) | B_avg_opp_CTRL_time(seconds) |
|------------------|---------------------|----------------------|-------------------------|--------------------------|------------------------------|
| 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 | 4585.000000 |
| 8.158988 | 5.509645 | 7.042118 | 4.719547 | 137.277722 | 132.591148 |
| 9.347720 | 6.277867 | 9.462104 | 6.447007 | 133.688630 | 129.213709 |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 1.959669 | 1.140625 | 1.093750 | 0.753906 | 36.000000 | 35.093750 |
| 5.062500 | 3.500000 | 3.875000 | 2.500000 | 99.211914 | 94.125000 |
| 11.003768 | 7.625000 | 9.000000 | 6.000000 | 200.192383 | 192.375000 |
| 88.000000 | 48.000000 | 141.000000 | 84.000000 | 1020.195312 | 835.000000 |

| B_total_time_fought(seconds) | B_total_rounds_fought | B_total_title_bouts | B_current_win_streak | B_current_lose_streak | B_longest_win_streak | B_wins |
|------------------------------|-----------------------|---------------------|----------------------|-----------------------|----------------------|-------------|
| 4585.000000 | 6012.000000 | 6012.000000 | 6012.000000 | 6012.000000 | 6012.000000 | 6012.000000 |
| 611.409924 | 9.441783 | 0.277279 | 0.947272 | 0.397206 | 1.630905 | 2.584997 |
| 260.707940 | 11.875922 | 1.125673 | 1.489959 | 0.664907 | 1.808590 | 3.317241 |
| 7.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 419.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 638.500000 | 5.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 1.000000 |
| 846.406250 | 13.000000 | 0.000000 | 1.000000 | 1.000000 | 3.000000 | 4.000000 |
| 1500.000000 | 94.000000 | 16.000000 | 16.000000 | 5.000000 | 16.000000 | 23.000000 |

| B_losses | B_draw | B_win_by_Decision_Majority | B_win_by_Decision_Split | B_win_by_Decision_Unanimous | B_win_by_KO/TKO | B_win_by_Submission |
|-------------|--------|----------------------------|-------------------------|-----------------------------|-----------------|---------------------|
| 6012.000000 | 6012.0 | 6012.000000 | 6012.000000 | 6012.000000 | 6012.000000 | 6012.000000 |
| 1.540419 | 0.0 | 0.016134 | 0.218397 | 0.838157 | 0.895709 | 0.569528 |
| 1.940694 | 0.0 | 0.127316 | 0.525232 | 1.370454 | 1.580829 | 1.161257 |
| 0.000000 | 0.0 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 0.000000 | 0.0 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 1.000000 | 0.0 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 2.000000 | 0.0 | 0.000000 | 0.000000 | 1.000000 | 1.000000 | 1.000000 |
| 16.000000 | 0.0 | 2.000000 | 5.000000 | 10.000000 | 11.000000 | 14.000000 |

| B_win_by_TKO_Doctor_Stoppage | B_Height_cms | B_Reach_cms | B_Weight_lbs | R_avg_KD | R_avg_opp_KD | R_avg_SIG_STR_pct | R_avg_opp_SIG_STR_pct |
|------------------------------|--------------|-------------|--------------|-------------|--------------|-------------------|-----------------------|
| 6012.000000 | 6002.000000 | 5121.000000 | 6004.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 |
| 0.042083 | 178.951083 | 183.228686 | 170.590773 | 0.243484 | 0.188045 | 0.457171 | 0.425338 |
| 0.211290 | 8.709866 | 10.344758 | 36.879171 | 0.364901 | 0.320757 | 0.128835 | 0.124878 |
| 0.000000 | 152.400000 | 147.320000 | 115.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 0.000000 | 172.720000 | 177.800000 | 145.000000 | 0.000000 | 0.000000 | 0.376250 | 0.347203 |
| 0.000000 | 180.340000 | 182.880000 | 170.000000 | 0.047168 | 0.000000 | 0.450000 | 0.421768 |
| 0.000000 | 185.420000 | 190.500000 | 185.000000 | 0.437500 | 0.252541 | 0.530000 | 0.500000 |
| 2.000000 | 210.820000 | 213.360000 | 770.000000 | 4.000000 | 3.000000 | 1.000000 | 1.000000 |

| R_avg_SIG_STR_pct | R_avg_opp_SIG_STR_pct | R_avg_TD_pct | R_avg_opp_TD_pct | R_avg_SUB_ATT | R_avg_opp_SUB_ATT | R_avg_REV | R_avg_opp_REV |
|-------------------|-----------------------|--------------|------------------|---------------|-------------------|-------------|---------------|
| 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 |
| 0.457171 | 0.425338 | 0.300901 | 0.254409 | 0.463514 | 0.393863 | 0.141426 | 0.143164 |
| 0.128835 | 0.124878 | 0.261993 | 0.247180 | 0.669272 | 0.623378 | 0.306744 | 0.318342 |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 0.376250 | 0.347203 | 0.066589 | 0.037109 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 0.450000 | 0.421768 | 0.250000 | 0.191738 | 0.187500 | 0.125000 | 0.000000 | 0.000000 |
| 0.530000 | 0.500000 | 0.500000 | 0.402559 | 0.726685 | 0.515625 | 0.125000 | 0.125000 |
| 1.000000 | 1.000000 | 1.000000 | 1.000000 | 9.000000 | 8.000000 | 3.000000 | 4.000000 |

| R_avg_SIG_STR_att | R_avg_SIG_STR_landed | R_avg_opp_SIG_STR_att | R_avg_opp_SIG_STR_landed | R_avg_TOTAL_STR_att | R_avg_TOTAL_STR_landed |
|-------------------|----------------------|-----------------------|--------------------------|---------------------|------------------------|
| 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 |
| 79.346284 | 34.808436 | 76.069556 | 31.890675 | 100.586308 | 53.693005 |
| 51.753004 | 22.568121 | 50.799409 | 21.709018 | 57.657913 | 32.046382 |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 41.875000 | 18.932042 | 38.663879 | 16.030273 | 58.273438 | 30.943359 |
| 69.500000 | 30.500000 | 66.984375 | 27.846680 | 94.000000 | 48.544922 |
| 106.000000 | 46.000000 | 103.500000 | 43.000000 | 133.737061 | 70.000000 |
| 419.321196 | 212.142956 | 454.000000 | 175.000000 | 440.342255 | 248.123047 |

| R_avg_opp_TOTAL_STR_att | R_avg_opp_TOTAL_STR_landed | R_avg_TD_att | R_avg_TD_landed | R_avg_opp_TD_att | R_avg_opp_TD_landed | R_avg_HEAD_att |
|-------------------------|----------------------------|--------------|-----------------|------------------|---------------------|----------------|
| 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 |
| 95.553843 | 49.258481 | 2.943604 | 1.184075 | 2.822920 | 1.018747 | 62.281073 |
| 55.811293 | 30.033210 | 3.006234 | 1.322230 | 2.641710 | 1.178708 | 42.130661 |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 54.249573 | 27.500000 | 0.750000 | 0.187500 | 1.000000 | 0.132812 | 32.078125 |
| 88.503906 | 44.750000 | 2.000000 | 0.812500 | 2.015625 | 0.664062 | 54.000000 |
| 128.477032 | 65.500000 | 4.271484 | 1.734375 | 4.000000 | 1.500000 | 83.004150 |
| 461.000000 | 202.859375 | 30.000000 | 11.000000 | 22.000000 | 13.000000 | 368.184116 |

| R_avg_HEAD_landed | R_avg_opp_HEAD_att | R_avg_opp_HEAD_landed | R_avg_BODY_att | R_avg_BODY_landed | R_avg_opp_BODY_att | R_avg_opp_BODY_landed |
|-------------------|--------------------|-----------------------|----------------|-------------------|--------------------|-----------------------|
| 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 |
| 22.344055 | 59.780497 | 20.158009 | 10.019317 | 6.871403 | 9.551659 | 6.442013 |
| 15.582960 | 41.767256 | 15.313832 | 8.549729 | 5.988029 | 7.764812 | 5.381532 |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 11.608887 | 29.109661 | 9.500000 | 4.000000 | 2.717140 | 3.750000 | 2.500000 |
| 19.015137 | 51.483437 | 16.943726 | 7.917969 | 5.430634 | 7.750000 | 5.062500 |
| 29.375000 | 81.728394 | 27.148560 | 13.750000 | 9.376709 | 13.500000 | 8.982079 |
| 173.163765 | 400.000000 | 139.000000 | 71.000000 | 54.000000 | 75.000000 | 43.349854 |

| R_avg_LEG_att | R_avg_LEG_landed | R_avg_opp_LEG_att | R_avg_opp_LEG_landed | R_avg_DISTANCE_att | R_avg_DISTANCE_landed | R_avg_opp_DISTANCE_att |
|---------------|------------------|-------------------|----------------------|--------------------|-----------------------|------------------------|
| 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 |
| 7.045894 | 5.592977 | 6.737400 | 5.290654 | 62.677000 | 23.457244 | 61.612832 |
| 7.309739 | 5.772675 | 6.513925 | 5.142570 | 49.645270 | 19.964855 | 48.243271 |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 2.000000 | 1.500000 | 2.147461 | 1.687500 | 25.687500 | 9.000000 | 24.974609 |
| 4.780975 | 3.937378 | 4.899414 | 3.843750 | 51.025391 | 18.400864 | 50.515625 |
| 9.997070 | 7.947638 | 9.161275 | 7.333496 | 87.806396 | 32.750000 | 86.504883 |
| 71.570312 | 62.351562 | 77.387008 | 55.426939 | 396.108599 | 192.648659 | 440.000000 |

| R_avg_opp_DISTANCE_landed | R_avg_CLINCH_att | R_avg_CLINCH_landed | R_avg_opp_CLINCH_att | R_avg_opp_CLINCH_landed | R_avg_GROUND_att |
|---------------------------|------------------|---------------------|----------------------|-------------------------|------------------|
| 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 |
| 22.189858 | 7.923476 | 5.409125 | 7.545115 | 5.060535 | 8.745808 |
| 18.992482 | 7.852318 | 5.705212 | 7.460350 | 5.285806 | 10.300208 |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 8.000000 | 2.687500 | 1.692322 | 2.620224 | 1.562500 | 2.000000 |
| 17.500000 | 5.750000 | 3.750000 | 5.500000 | 3.500000 | 5.375000 |
| 31.500000 | 10.750000 | 7.048340 | 10.033691 | 6.675117 | 11.593750 |
| 169.000000 | 82.000000 | 61.000000 | 82.000000 | 51.000000 | 141.000000 |

| R_avg_GROUND_landed | R_avg_opp_GROUND_att | R_avg_opp_GROUND_landed | R_avg_CTRL_time(seconds) | R_avg_opp_CTRL_time(seconds) | I |
|---------------------|----------------------|-------------------------|--------------------------|------------------------------|---|
| 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | 5300.000000 | |
| 5.942066 | 6.91161 | 4.640281 | 144.215233 | 125.120348 | |
| 7.000114 | 8.92240 | 5.997152 | 136.696848 | 121.675716 | |
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | |
| 1.403694 | 1.15625 | 0.750000 | 38.280029 | 34.000000 | |
| 3.687500 | 4.000000 | 2.656250 | 104.865234 | 89.500000 | |
| 8.000000 | 9.250000 | 6.224609 | 211.136719 | 176.494141 | |
| 68.000000 | 104.000000 | 68.000000 | 996.749573 | 812.000000 | |

| R_total_time_fought(seconds) | R_total_rounds_fought | R_total_title_bouts | R_current_win_streak | R_current_lose_streak | R_longest_win_streak | R_wins |
|------------------------------|-----------------------|---------------------|----------------------|-----------------------|----------------------|-------------|
| 5300.000000 | 6012.000000 | 6012.000000 | 6012.000000 | 6012.000000 | 6012.000000 | 6012.000000 |
| 633.322933 | 13.669993 | 0.582169 | 1.314704 | 0.389055 | 2.313207 | 3.756986 |
| 267.906601 | 14.197512 | 1.551233 | 1.729916 | 0.649405 | 2.094238 | 3.861044 |
| 7.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 438.458191 | 3.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 1.000000 |
| 655.844101 | 9.000000 | 0.000000 | 1.000000 | 0.000000 | 2.000000 | 3.000000 |
| 851.088501 | 20.000000 | 1.000000 | 2.000000 | 1.000000 | 3.000000 | 6.000000 |
| 1500.000000 | 88.000000 | 16.000000 | 16.000000 | 4.000000 | 16.000000 | 23.000000 |

| R_losses | R_draw | R_win_by_Decision_Majority | R_win_by_Decision_Split | R_win_by_Decision_Unanimous | R_win_by_KO/TKO | R_win_by_Submission |
|-------------|--------|----------------------------|-------------------------|-----------------------------|-----------------|---------------------|
| 6012.000000 | 6012.0 | 6012.000000 | 6012.000000 | 6012.000000 | 6012.000000 | 6012.000000 |
| 2.071357 | 0.0 | 0.027944 | 0.306886 | 1.251331 | 1.297572 | 0.796241 |
| 2.265830 | 0.0 | 0.166833 | 0.619485 | 1.681376 | 1.859955 | 1.355801 |
| 0.000000 | 0.0 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 0.000000 | 0.0 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 1.000000 | 0.0 | 0.000000 | 0.000000 | 1.000000 | 1.000000 | 0.000000 |
| 3.000000 | 0.0 | 0.000000 | 0.000000 | 2.000000 | 2.000000 | 1.000000 |
| 17.000000 | 0.0 | 2.000000 | 5.000000 | 10.000000 | 11.000000 | 13.000000 |

| R_win_by_TKO_Doctor_Stoppage | R_Height_cms | R_Reach_cms | R_Weight_lbs | B_age | R_age |
|------------------------------|--------------|-------------|--------------|-------------|-------------|
| 6012.000000 | 6008.000000 | 5606.000000 | 6010.000000 | 5840.000000 | 5949.000000 |
| 0.069195 | 178.991788 | 183.562347 | 170.686356 | 29.293151 | 29.598252 |
| 0.273980 | 8.812985 | 10.585313 | 35.724626 | 4.063297 | 4.167755 |
| 0.000000 | 152.400000 | 152.400000 | 115.000000 | 18.000000 | 19.000000 |
| 0.000000 | 172.720000 | 177.800000 | 145.000000 | 26.000000 | 27.000000 |
| 0.000000 | 180.340000 | 182.880000 | 170.000000 | 29.000000 | 29.000000 |
| 0.000000 | 185.420000 | 190.500000 | 185.000000 | 32.000000 | 32.000000 |
| 2.000000 | 210.820000 | 213.360000 | 345.000000 | 51.000000 | 47.000000 |

Data Limitations

- The amount of incomplete data can skew the result of the analysis.
- There could be a problem with data quality. This could be due to the incorrect entry of data especially in the earlier years.
- The problem of bias arises such as home advantage bias. This could affect the analysis outcome.
- External factors that affect the fighters such as psychological factors, judging bias and crowd influence could play a part.

Ethical Consideration

- When working with data, we must consider the Personal Identifiable Information (PII). In the case of this dataset, it would be the name of the fighters on both the red and blue sides. This information is quite open to the public because it is a televised event so I would not be leaking any personal information about the fighter's lives.

Questions to Explore

These questions are formulated based on analysis focusing on the blue and red corner fighters.

Comparative Analysis

- Compare the performance metrics (strikes, takedowns, etc.) between the red and blue corner fighters.
- How do the performance metrics of winners differ from those of losers?

Impact of Stance

- How does a fighter's stance (orthodox, southpaw, etc.) affect their performance metrics and win rate?

Title Fights by Location

- What percentage of title fights occur at each location?
- How do performance metrics in title fights compare across different locations?

Height and Reach Impact

- How do height and reach advantage impact the likelihood of winning a fight?

Referee Influence:

- Does the presence of a particular referee affect the number of submissions or knockouts in matches?

Impact of Specific Moves:

- How does the average number of knockdowns (avg_KD) correlate with the match outcome?
- What is the relationship between the average number of submission attempts (avg_SUB_ATT) and winning by submission?

