

Table 1. Women’s circuits and tournaments in 2024 (Adapted from “2024 Woman’s Tennis Association. Official Rulebook”)

| Level | Circuit | Categories | Number of tournaments |
|------------------|-------------------------------|-------------|-----------------------|
| Top-tier tour | WTA Tour | Grand slams | 4 |
| | | WTA Finals | 1 |
| | | WTA 1000 | 10 |
| | | WTA 500 | 17 |
| | | WTA 250 | 23 |
| Second-tier tour | WTA 125 tournaments | WTA 125 | 24 |
| Third-tier tour | ITF Women's World Tennis Tour | W100 | +500 |
| | | W75 | |
| | | W50 | |
| | | W35 | |
| | | W15 | |

Table 2. Description of the variables related to the matches and tournaments in the WTA database

| Variable | Label | Values |
|------------------|--|---|
| tourney_category | Tourney Category | ITF Women's World Tennis Tour WTA 125 Tournaments WTA Tour |
| tourney_level | Tourney Level | Grand Slams Premier. Premier Mandatory C125, C100, C75, C50, C25, C20, C10 Satellite Challenger Davis Cup International Olympics Tier I, II, III, IV, V Historical |
| tourney_id | Tourney ID | |
| tourney_name | Tourney Name | |
| Year | Year of the Tourney (1975-2019) | |
| Surface | Tournament playing Surface | Carpet Clay Grass Hard |
| best_of | Number of sets necessary to win the tennis match | Best of 3 sets |
| round_level | Match round level | Final Round Preliminary Round Qualifying Round |
| Round | Round Level | |
| Score | Score of the match | |
| Games | Number of games in the match | |
| Match_Outcome | How the tennis match ends | Complete Default Retirement WalkOver |

Table 3. Description of the variables related to the characteristics of the players in the WTA database

| Variable | Label | Values |
|-------------|--|--------------------------|
| winner_name | Name of the winning tennis player of the match | |
| loser_name | Name of the losing tennis player of the match | |
| winner_hand | Hand of the winning tennis player of the match | Left Right Unknown |
| loser_hand | Hand of the losing tennis player of the match | Left Right Unknown |
| winner_age | Age of the winning tennis player of the match | |
| loser_age | Age of the losing tennis player of the match | |
| dif_age | Age difference between the winning and losing tennis players | |
| sum_age | Sum of the ages of tennis players | |
| mean_age | Mean of the ages of tennis players | |
| winner_rank | Ranking position of the winning tennis player of the match | |
| loser_rank | Ranking position of the losing tennis player of the match | |
| dif_rank | Difference in ranking positions between the winning and the losing tennis player | |

Table 4. Description of the variables related to the match outcome in the WTA database

| Variable | Label | Values |
|----------------|---|---|
| Match_Outcome | How the tennis match ends | Complete Default Retirement WalkOver |
| Retirement | The tennis match ended due to the retirement of a tennis player | No Retirement Retirement |
| WalkOver | The tennis match was not played due to walkover | No WalkOver WalkOver |
| Type_WO | Type of WalkOver | Illness Injury Other Unknown |
| Region_Injury | Region injury | Head/Neck Lower Limbs Upper Limbs Trunk Other Unknown |
| Source_WO | Source of WalkOver information | |
| Default | The tennis match ended due to the default of a tennis player | No Default Default |
| Type_Default | Type of Default | Abuse of Ball Abuse of Racquet Leaving the Court Verbal Abuse Unsportsmanlike Conduct Unknown |
| Source_Default | Source of Default information | |

1 – EXPLORATORY DATA ANALYSIS

Table 1.1. Characteristics of the categorical variables in WTA Database.

| Variable | Category | Frequency | Percent |
|------------------|-------------------------------|-----------|---------|
| Global | | 313832 | 100 |
| Tourney Category | ITF Women's World Tennis Tour | 266869 | 85.04 |
| | WTA 125 Tournaments | 511 | 0.16 |
| | WTA Tour | 46452 | 14.80 |
| Surface | Carpet | 12636 | 4.03 |
| | Clay | 139380 | 44.41 |
| | Grass | 15271 | 4.87 |
| | Hard | 146545 | 46.70 |
| Round Level | Final Round | 63248 | 20.15 |
| | Preliminary Round | 234267 | 74.65 |
| | Qualifying Round | 16317 | 5.20 |
| Winner Hand | Left | 21975 | 7.00 |
| | Right | 196914 | 62.75 |
| | Unknown | 94943 | 30.25 |
| Loser Hand | Left | 18489 | 5.89 |
| | Right | 174935 | 55.74 |
| | Unknown | 120408 | 38.37 |
| Match Outcome | Complete | 304270 | 96.95 |
| | Default | 29 | 0.01 |
| | Retirement | 8161 | 2.60 |
| | WalkOver | 1372 | 0.44 |
| WalkOver | No WalkOver | 312460 | 99.56 |
| | WalkOver | 1372 | 0.44 |

Table 1.2. Characteristics of the continuous variables in WTA Database.

| Variable | Mean | SD | median | min | max | % missing |
|-------------|---------|--------|--------|--------|-------|-----------|
| year | 2007.36 | 7.44 | 2009 | 1975 | 2019 | 0 |
| games | 20.28 | 6.02 | 19 | 0 | 70 | 0.01 |
| winner_age | 21.58 | 3.73 | 20.92 | 12.97 | 69.68 | 1.21 |
| loser_age | 21.26 | 3.82 | 20.53 | 9.23 | 71.35 | 1.24 |
| mean_age | 21.42 | 2.91 | 21.04 | 14.02 | 51.95 | 1.22 |
| sum_age | 42.84 | 5.82 | 42.08 | 28.05 | 103.9 | 1.24 |
| dif_age | 0.32 | 4.8 | 0.34 | -53.61 | 52.03 | 1.24 |
| winner_rank | 411.76 | 283.5 | 362 | 1 | 1493 | 11.45 |
| loser_rank | 472.4 | 317.14 | 413 | 1 | 1493 | 20.32 |
| dif_rank | -81.9 | 258.01 | -53 | -1344 | 1291 | 25.81 |

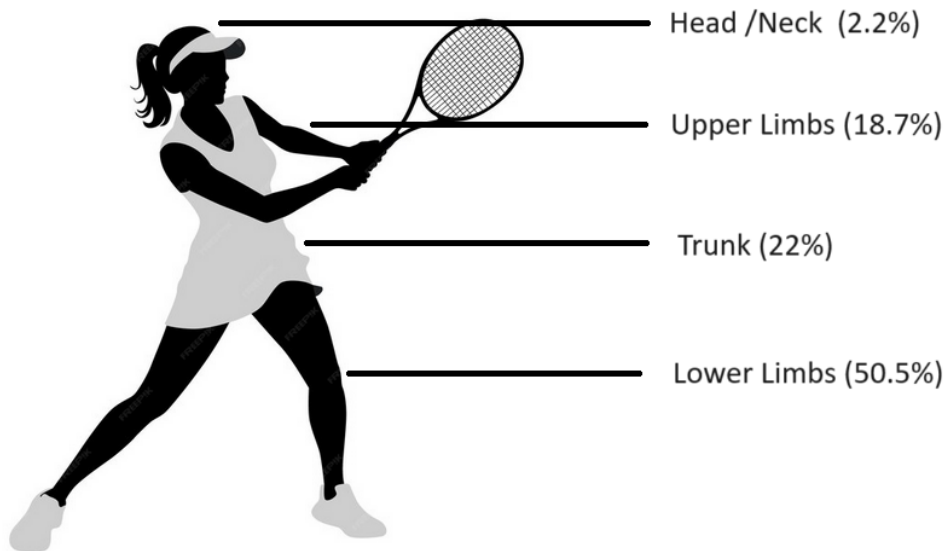
(Other characteristics of variables in “Supplementary tables and figures”)

Table 1.3. Description of the causes of walkovers and defaults in matches.

| Type of WalkOver | Cases | % |
|------------------|-------|------|
| Injury | 91 | 6,6 |
| Illness | 25 | 1,8 |
| Other | 4 | 0,3 |
| Unknown | 1252 | 91,3 |

| Type of Default | Cases | % |
|-------------------|-------|------|
| Abuse of Racquet | 4 | 13,8 |
| Verbal Abuse | 4 | 13,8 |
| Leaving the Court | 1 | 3,4 |
| Unsportsmanlike | 1 | 3,4 |
| Abuse of Ball | 0 | 0,0 |
| Unknown | 19 | 65,5 |

Figure 1.4. Distribution of the injured region in Walkovers caused by injury.

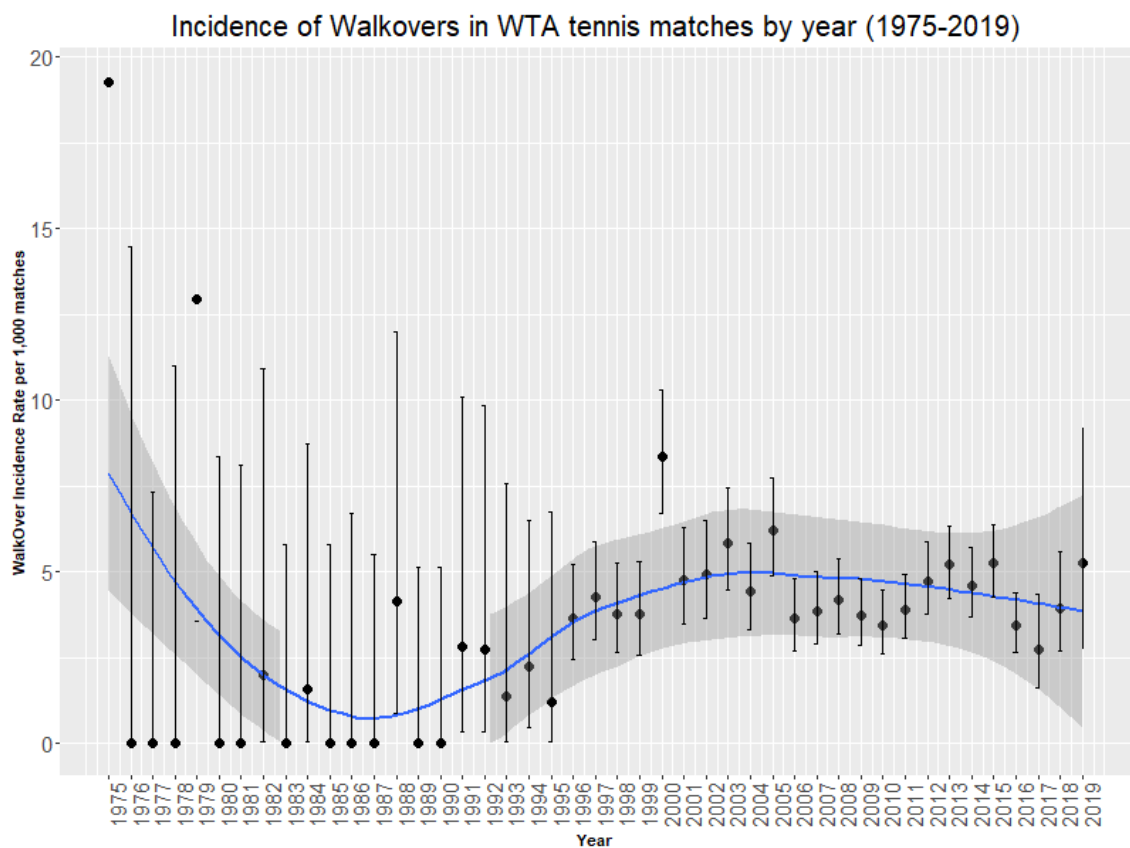


| Region Injury | Cases | % |
|---------------|-------|------|
| Lower Limbs | 46 | 50,5 |
| Trunk | 20 | 22 |
| Upper Limbs | 17 | 18,7 |
| Head/Neck | 2 | 2,2 |
| Other | 6 | 6,6 |

Table 1.5. Incidence of Walkovers in WTA tennis matches by year (1975-2019)

| Year | WO | Matches | %WO | Year | WO | Matches | %WO | Year | WO | Matches | %WO |
|------|----|---------|-------|------|----|---------|------|------|-----|---------|------|
| 1975 | 7 | 363 | 19,28 | 1990 | 0 | 716 | 0,00 | 2005 | 77 | 12444 | 6,19 |
| 1976 | 0 | 253 | 0,00 | 1991 | 2 | 714 | 2,80 | 2006 | 49 | 13507 | 3,63 |
| 1977 | 0 | 503 | 0,00 | 1992 | 2 | 732 | 2,73 | 2007 | 53 | 13784 | 3,85 |
| 1978 | 0 | 333 | 0,00 | 1993 | 1 | 732 | 1,37 | 2008 | 60 | 14352 | 4,18 |
| 1979 | 4 | 309 | 12,94 | 1994 | 3 | 1351 | 2,22 | 2009 | 60 | 16069 | 3,73 |
| 1980 | 0 | 440 | 0,00 | 1995 | 1 | 825 | 1,21 | 2010 | 57 | 16559 | 3,44 |
| 1981 | 0 | 452 | 0,00 | 1996 | 29 | 7997 | 3,63 | 2011 | 70 | 17933 | 3,90 |
| 1982 | 1 | 508 | 1,97 | 1997 | 38 | 8900 | 4,27 | 2012 | 82 | 17314 | 4,74 |
| 1983 | 0 | 636 | 0,00 | 1998 | 35 | 9277 | 3,77 | 2013 | 98 | 18862 | 5,20 |
| 1984 | 1 | 636 | 1,57 | 1999 | 32 | 8534 | 3,75 | 2014 | 83 | 18044 | 4,60 |
| 1985 | 0 | 636 | 0,00 | 2000 | 86 | 10288 | 8,36 | 2015 | 102 | 19461 | 5,24 |
| 1986 | 0 | 549 | 0,00 | 2001 | 47 | 9915 | 4,74 | 2016 | 64 | 18568 | 3,45 |
| 1987 | 0 | 668 | 0,00 | 2002 | 50 | 10161 | 4,92 | 2017 | 18 | 6560 | 2,74 |
| 1988 | 3 | 728 | 4,12 | 2003 | 62 | 10654 | 5,82 | 2018 | 31 | 7861 | 3,94 |
| 1989 | 0 | 716 | 0,00 | 2004 | 52 | 11710 | 4,44 | 2019 | 12 | 2278 | 5,27 |

Figure 1.6. Trend over time on walkovers in WTA tennis matches by year.



2 - BIVARIATE ANALYSIS

Table 2.1. Characteristics of the variables related to the matches and tournaments depending on the presence of Walkovers.

| Variable | No WalkOver <i>N=312460</i> | WalkOver <i>N=1372</i> |
|---|--------------------------------|---------------------------|
| Tourney Category: | | |
| ITF Women's World Tennis Tour | 265650 (85.0%) | 1219 (88.8%) |
| WTA 125 Tournaments | 509 (0.16%) | 2 (0.15%) |
| WTA Tour | 46301 (14.8%) | 151 (11.0%) |
| Tournament playing surface: | | |
| Carpet | 12592 (4.03%) | 44 (3.21%) |
| Clay | 138756 (44.4%) | 624 (45.5%) |
| Grass | 15230 (4.87%) | 41 (2.99%) |
| Hard | 145882 (46.7%) | 663 (48.3%) |
| Match round level: | | |
| Final Round | 62834 (20.1%) | 414 (30.2%) |
| Preliminary Round | 233346 (74.7%) | 921 (67.1%) |
| Qualifying Round | 16280 (5.21%) | 37 (2.70%) |
| Hand of the winning tennis player of the match: | | |
| Left | 21897 (7.01%) | 78 (5.69%) |
| Right | 196106 (62.8%) | 808 (58.9%) |
| Unknown | 94457 (30.2%) | 486 (35.4%) |
| Hand of the losing tennis player of the match: | | |
| Left | 18408 (5.89%) | 81 (5.90%) |
| Right | 174152 (55.7%) | 783 (57.1%) |
| Unknown | 119900 (38.4%) | 508 (37.0%) |

Figure 2.2. Percentage of Walkovers in the variables related to the matches and tournaments.

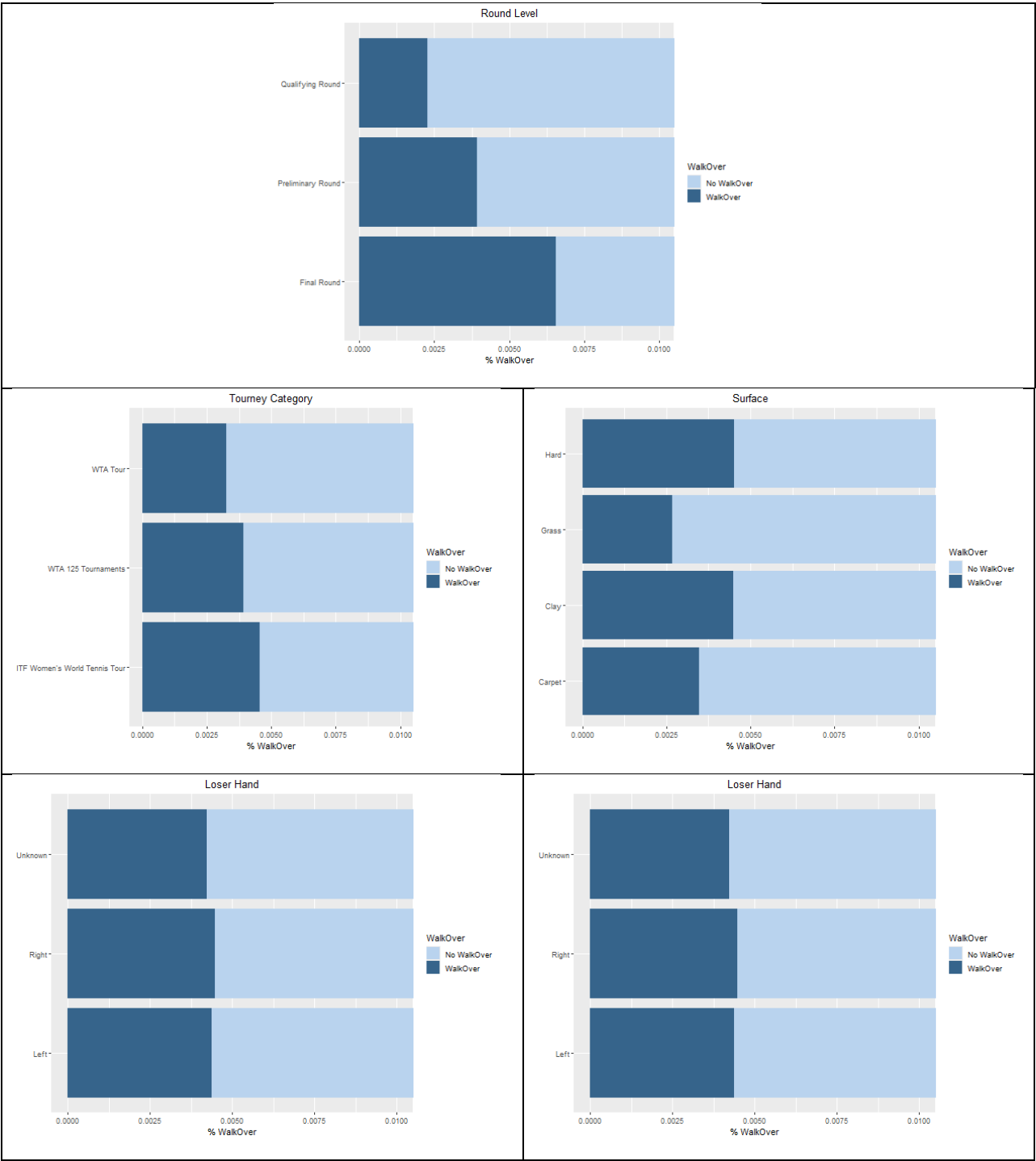
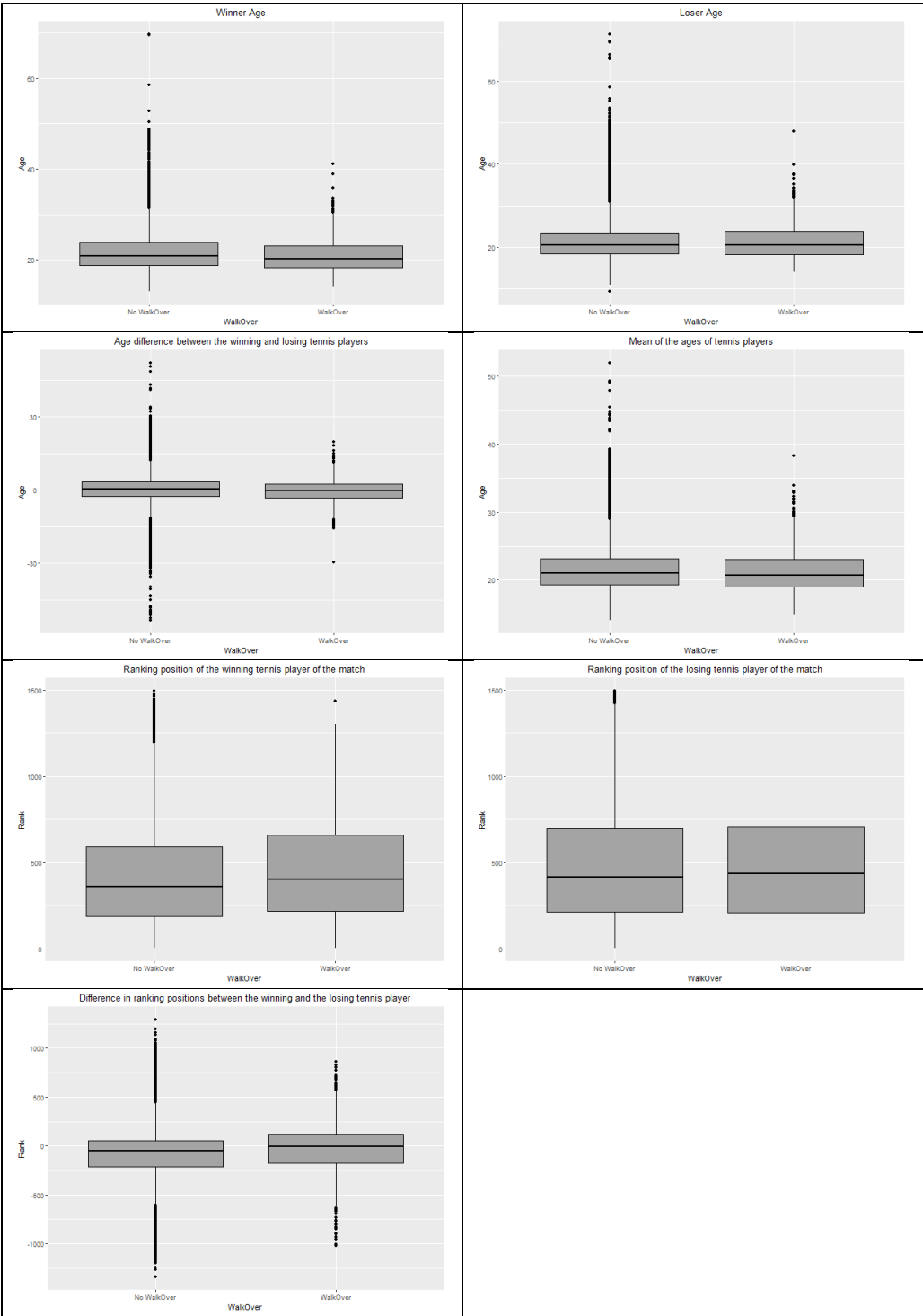


Table 2.3. Differences in the variables related to the characteristics of the players depending on the presence of Walkovers.

| Variable | No WalkOver <i>N=312460</i> | WalkOver <i>N=1372</i> | p.overall |
|--|--|-----------------------------------|------------------|
| Age of the winning tennis player of the match | 20.9 [18.8;23.8] | 20.3 [18.3;23.2] | <0.001 |
| Age of the losing tennis player of the match | 20.5 [18.5;23.5] | 20.5 [18.2;23.7] | 0.713 |
| Age difference between the winning and losing tennis players | 0.34 [-2.59;3.29] | -0.18 [-3.28;2.51] | <0.001 |
| Mean of the ages of tennis players | 21.0 [19.3;23.2] | 20.7 [19.0;23.1] | <0.001 |
| Ranking position of the winning tennis player of the match | 361 [187;590] | 401 [217;659] | <0.001 |
| Ranking position of the losing tennis player of the match | 413 [211;695] | 436 [208;702] | 0.765 |
| Difference in ranking positions between the winning and the losing tennis player | -53.00 [-211.00;52.0] | -9.00 [-179.00;122] | <0.001 |

Figure 2.3. Boxplot of Walkovers in the variables related to related the characteristics of the players.



3 - EPIDEMIOLOGICAL MESURES

Table 3.1. Incidence of walkovers in 1000 scheduled tennis matches (%WO), Incidence rate ratio (IRR), Attributable risk (AR) and confidence interval (95%CI) of walkovers by different predictor variables.

| Variable | Walkover | Matches | %WO (95% CI) | IRR (95% CI) | AR (95% CI) |
|---------------------|----------|---------|---------------------|--------------------|-----------------------|
| Tourney Category | | | | | |
| ITF Women's | 1219 | 265650 | 4.57 (4.32 - 4.83) | 1 | 0 |
| WTA 125 Tournaments | 2 | 509 | 3.91 (0.47 - 14.07) | 0.86 (0.1 - 3.1) | -0.65 (-6.08 - 4.78) |
| WTA Tour | 151 | 46301 | 3.25 (2.75 - 3.81) | 0.71 (0.6 - 0.84) | -1.32 (-1.9 - -0.74) |
| Surface | | | | | |
| Hard | 663 | 145882 | 4.52 (4.19 - 4.88) | 1 | 0 |
| Carpet | 44 | 12592 | 3.48 (2.53 - 4.67) | 0.77 (0.55 - 1.04) | -1.04 (-2.13 - 0.04) |
| Clay | 624 | 138756 | 4.48 (4.13 - 4.84) | 0.99 (0.89 - 1.11) | -0.05 (-0.54 - 0.44) |
| Grass | 41 | 15230 | 2.68 (1.93 - 3.64) | 0.59 (0.42 - 0.81) | -1.84 (-2.73 - -0.95) |
| Round Level | | | | | |
| Preliminary Round | 921 | 233346 | 3.93 (3.68 - 4.19) | 1 | 0 |
| Final Round | 414 | 62834 | 6.55 (5.93 - 7.21) | 1.66 (1.48 - 1.87) | 2.61 (1.93 - 3.29) |
| Qualifying Round | 37 | 16280 | 2.27 (1.6 - 3.12) | 0.58 (0.4 - 0.8) | -1.66 (-2.44 - -0.89) |
| Winner Hand | | | | | |
| Right | 808 | 196106 | 4.1 (3.83 - 4.4) | 1 | 0 |
| Left | 78 | 21897 | 3.55 (2.81 - 4.43) | 0.87 (0.68 - 1.09) | -0.55 (-1.39 - 0.28) |
| Unknown | 486 | 94457 | 5.12 (4.67 - 5.59) | 1.25 (1.11 - 1.4) | 1.02 (0.48 - 1.55) |
| Loser Hand | | | | | |
| Right | 783 | 174152 | 4.48 (4.17 - 4.8) | 1 | 0 |
| Left | 81 | 18408 | 4.38 (3.48 - 5.44) | 0.98 (0.77 - 1.23) | -0.09 (-1.1 - 0.91) |
| Unknown | 508 | 119900 | 4.22 (3.86 - 4.6) | 0.94 (0.84 - 1.06) | -0.26 (-0.74 - 0.23) |
| Winner Age | | | | | |
| < 21 y.o. | 782 | 156968 | 4.96 (4.62 - 5.32) | 1 | 0 |
| >21 y.o. | 578 | 151694 | 3.8 (3.49 - 4.12) | 0.77 (0.69 - 0.85) | -1.16 (-1.63 - -0.7) |
| Loser Age | | | | | |
| < 21 y.o. | 733 | 168945 | 4.32 (4.01 - 4.64) | 1 | 0 |
| > 21 y.o. | 626 | 139635 | 4.46 (4.12 - 4.83) | 1.03 (0.93 - 1.15) | 0.14 (-0.33 - 0.61) |
| Difference Age | | | | | |
| < 0 y.o. | 712 | 144117 | 4.92 (4.56 - 5.29) | 1 | 0 |
| > 0 y.o. | 647 | 164450 | 3.92 (3.62 - 4.23) | 0.8 (0.72 - 0.89) | -1 (-1.47 - -0.53) |
| Mean Age | | | | | |
| < 21 y.o. | 735 | 152564 | 4.79 (4.45 - 5.15) | 1 | 0 |
| > 21 y.o. | 625 | 156081 | 3.99 (3.68 - 4.31) | 0.83 (0.75 - 0.93) | -0.81 (-1.27 - -0.34) |
| Winner Rank | | | | | |
| < 400 | 543 | 152155 | 3.56 (3.26 - 3.87) | 1 | 0 |
| > 400 | 547 | 124639 | 4.37 (4.01 - 4.75) | 1.23 (1.09 - 1.39) | 0.81 (0.34 - 1.29) |
| Loser Rank | | | | | |
| < 400 | 483 | 120785 | 3.98 (3.64 - 4.35) | 1 | 0 |
| > 400 | 564 | 128217 | 4.38 (4.03 - 4.76) | 1.1 (0.97 - 1.24) | 0.4 (-0.11 - 0.9) |
| Difference Rank | | | | | |
| < -50 | 361 | 117352 | 3.07 (2.76 - 3.4) | 1 | 0 |
| > -50 | 540 | 114577 | 4.69 (4.3 - 5.1) | 1.53 (1.34 - 1.75) | 1.62 (1.12 - 2.13) |

4 - JOINPOINT ANALYSIS

Table 4.1. Periods and annual percentage of change (APC) in the WalkOver rate per 1000 tennis matches (%WO) in each period calculated by the Joinpoint method for each variable and category.

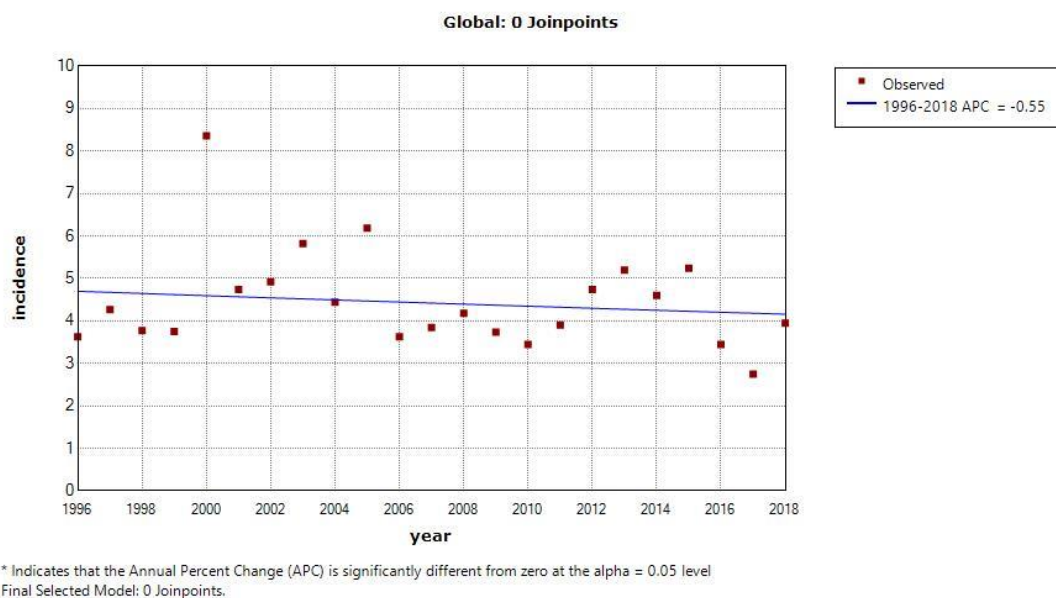
| Variable | Category | Period | APC | CI 95% (APC) | |
|------------------|-------------------|-------------|-------|------------------|---|
| Global | | 1996 - 2018 | -0,6 | (-2,2 - 1,1) | |
| Tourney Category | ITF | 1996 - 2018 | -1,2 | (-2,7 - 0,4) | |
| | WTA Tour | 1996 - 2008 | 3,1 | (-8,7 - 16,4) | |
| | | 2008 - 2012 | 49,0 | (1 - 119,9) | * |
| | | 2012 - 2018 | -15,1 | (-26,3 - -2,1) | * |
| Surface | Carpet | 1996 - 2018 | -1,2 | (-6,8 - 4,8) | |
| | Clay | 1996 - 2018 | -1,4 | (-3,1 - 0,4) | |
| | Grass | 1996 - 2018 | 1,6 | (-2,8 - 6,3) | |
| | Hard | 1996 - 2018 | 0,1 | (-2,2 - 2,3) | |
| Round Level | Round Final | 1996 - 2018 | -0,9 | (-2,8 - 1,1) | |
| | Round Preliminary | 1996 - 2018 | -0,3 | (-2,3 - 1,7) | |
| Winner Hand | Left | 1996 - 2014 | 8,8 | (3,7 - 14) | * |
| | | 2014 - 2018 | -32,8 | (-57,7 - 6,8) | |
| | Right | 1996 - 2018 | -0,2 | (-2,1 - 1,8) | |
| | Unknown | 1996 - 2000 | 23,6 | (0 - 52,8) | |
| | | 2000 - 2018 | -3,1 | (-5,5 - -0,5) | * |
| Loser Hand | Left | 1996 - 2018 | 3,6 | (-1 - 8,5) | |
| | Right | 1996 - 2018 | -0,9 | (-3 - 1,3) | |
| | Unknown | 1996 - 2018 | -0,5 | (-2,6 - 1,6) | |
| Winner Age | < 21 | 1996 - 2000 | 25,0 | (-3,5 - 61,8) | |
| | | 2000 - 2009 | -7,2 | (-12,9 - -1,1) | * |
| | | 2009 - 2018 | 4,0 | (-1,9 - 10,3) | |
| | >21 | 1996 - 2018 | 0,5 | (-1,5 - 2,6) | |
| Loser Age | < 21 | 1996 - 2018 | -0,6 | (-2,5 - 1,2) | |
| | > 21 | 1996 - 2018 | -0,7 | (-2,8 - 1,5) | |
| Difference Age | < 0 | 1996 - 2018 | -0,4 | (-2,7 - 1,9) | |
| | > 0 | 1996 - 2018 | -0,6 | (-2,4 - 1,2) | |
| Mean Age | < 21 | 1996 - 2002 | 14,7 | (-0,3 - 32) | |
| | | 2002 - 2007 | -16,1 | (-31,7 - 3) | |
| | | 2007 - 2018 | 4,5 | (-0,3 - 9,6) | |
| | > 21 | 1996 - 2018 | 0,2 | (-2,1 - 2,5) | |
| | | | | | |
| Winner Rank | < 400 | 1996 - 2018 | 0,6 | (-1 - 2,3) | |
| | > 400 | 1996 - 2018 | -0,4 | (-2,5 - 1,8) | |
| Loser Rank | < 400 | 1996 - 2018 | 0,8 | (-1 - 2,7) | |
| | > 400 | 1996 - 2018 | -1,0 | (-3,3 - 1,3) | |
| Difference Rank | < -50 | 1996 - 2018 | -1,1 | (-3,7 - 1,6) | |
| | > -50 | 1996 - 2018 | 1,5 | (-0,6 - 3,7) | |

Table 4.2. Hypothesis tests for selecting the number of Joinpoints for each variable and category.

| Variable | Category | Test Number | Null Hypothesis | Alternative. Hypothesis | P-Value | Significance level | Selected Hypothesis |
|------------------|-------------|-------------|-----------------|-------------------------|---------|--------------------|---------------------|
| Global | | 0 | 0 | 2 | 0,307 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,568 | 0,025 | 0 |
| Tourney Category | ITF | 0 | 0 | 2 | 0,191 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,543 | 0,025 | 0 |
| | WTA Tour | 0 | 0 | 2 | 0,002 | 0,025 | 2 |
| | | 1 | 1 | 2 | 0,018 | 0,05 | 2 |
| Surface | Carpet | 0 | 0 | 2 | 0,529 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,801 | 0,025 | 0 |
| | Clay | 0 | 0 | 2 | 0,052 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,195 | 0,025 | 0 |
| | Grass | 0 | 0 | 2 | 0,239 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,246 | 0,025 | 0 |
| | Hard | 0 | 0 | 2 | 0,109 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,267 | 0,025 | 0 |
| Round Level | Round | 0 | 0 | 2 | 0,177 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,040 | 0,025 | 0 |
| | Preliminary | 0 | 0 | 2 | 0,070 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,538 | 0,025 | 0 |
| Winner Hand | Left | 0 | 0 | 2 | 0,092 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,021 | 0,025 | 1 |
| | Right | 0 | 0 | 2 | 0,078 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,587 | 0,025 | 0 |
| | Unknown | 0 | 0 | 2 | 0,042 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,016 | 0,025 | 1 |
| Loser Hand | Left | 0 | 0 | 2 | 0,108 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,040 | 0,025 | 0 |
| | Right | 0 | 0 | 2 | 0,148 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,306 | 0,025 | 0 |
| | Unknown | 0 | 0 | 2 | 0,168 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,614 | 0,025 | 0 |
| Winner Age | < 21 | 0 | 0 | 2 | 0,020 | 0,025 | 2 |
| | | 1 | 1 | 2 | 0,013 | 0,05 | 2 |
| | >21 | 0 | 0 | 2 | 0,534 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,684 | 0,025 | 0 |
| Loser Age | < 21 | 0 | 0 | 2 | 0,058 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,368 | 0,025 | 0 |
| | > 21 | 0 | 0 | 2 | 0,205 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,137 | 0,025 | 0 |
| Difference Age | < 0 | 0 | 0 | 2 | 0,074 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,050 | 0,025 | 0 |
| | > 0 | 0 | 0 | 2 | 0,284 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,294 | 0,025 | 0 |
| Mean Age | < 21 | 0 | 0 | 2 | 0,008 | 0,025 | 2 |
| | | 1 | 1 | 2 | 0,003 | 0,05 | 2 |
| | > 21 | 0 | 0 | 2 | 0,282 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,201 | 0,025 | 0 |

| | | | | | | | |
|-----------------|-------|---|---|---|-------|-------|---|
| Winner Rank | < 400 | 0 | 0 | 2 | 0,201 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,289 | 0,025 | 0 |
| > 400 | > 400 | 0 | 0 | 2 | 0,069 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,254 | 0,025 | 0 |
| Loser Rank | < 400 | 0 | 0 | 2 | 0,362 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,466 | 0,025 | 0 |
| > 400 | > 400 | 0 | 0 | 2 | 0,133 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,557 | 0,025 | 0 |
| Difference Rank | < -50 | 0 | 0 | 2 | 0,106 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,117 | 0,025 | 0 |
| > -50 | > -50 | 0 | 0 | 2 | 0,139 | 0,025 | 0 |
| | | 1 | 0 | 1 | 0,107 | 0,025 | 0 |

Figure 4.3. Trends over time in the WalkOver rate per 1000 tennis matches (%WO) using the Joinpoint method.



(Other plots in “Supplementary tables and figures”)

5 - MULTIVARIABLE ANALYSIS

Table 5.1. Initial and definitive model and variables eliminated for the selection of the definitive model

Initial Model:

**WalkOver ~ year + tourney_category + surface + round_level +
winner_hand + loser_hand + winner_age_21 + loser_age_21 +
dif_age_0 + loser_rank_400 + dif_rank_50**

| Variable to eliminate | AIC without variable | AIC with variable | Δ AIC |
|-----------------------|----------------------|-------------------|-------|
| Surface | 11664,49 | 11659,51 | 4,98 |
| winner_rank_400 | 11659,51 | 11657,62 | 1,89 |
| tourney_category | 11657,62 | 11656,31 | 1,31 |
| Year | 11656,31 | 11655,96 | 0,35 |
| dif_age_0 | 11655,96 | 11655,53 | 0,43 |
| winner_hand | 11655,53 | 11655,37 | 0,16 |
| loser_hand | 11655,37 | 11655,24 | 0,13 |

Definitive Model:

WalkOver ~ round_level + loser_age_21 + loser_rank_400 + dif_rank_50

Table 5.2. Predictors, odds ratio and their confidence interval in the definitive model.

| Variable | OR | CI 95% (OR) |
|--------------------------|------|-----------------|
| Round Level: Final Round | 1,97 | (1,72 - 2,25) |
| Round Level: Qualifying | 0,51 | (0,33 - 0,76) |
| Loser Age > 21 | 1,15 | (1,00 - 1,32) |
| Loser Rank > 400 | 1,18 | (1,02 - 1,37) |
| Difference Rank > 50 | 1,57 | (1,36 - 1,81) |

(Model validation tables and figures in “Supplementary tables and figures”)

Figure 5.3. Odds Ratio of the predictor variables in the definitive model.

