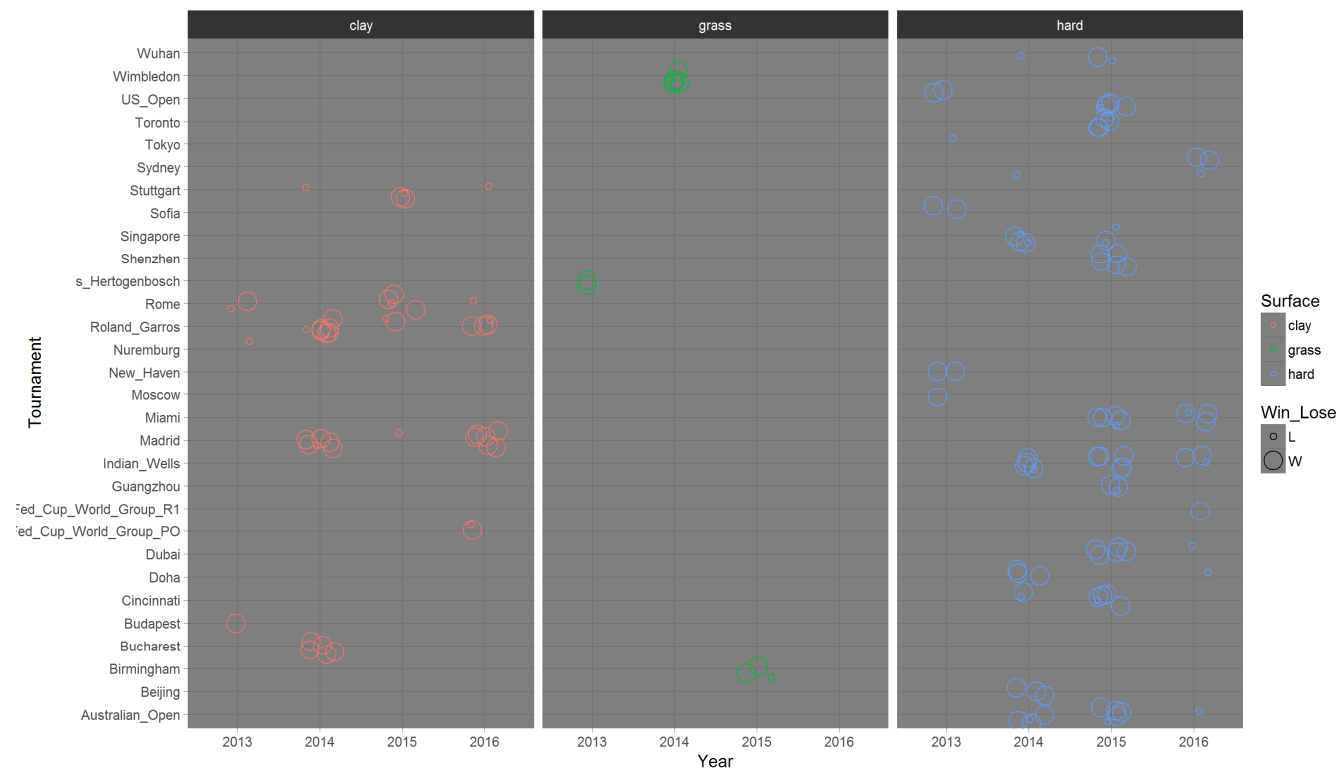# Patterns of play in women's tennis
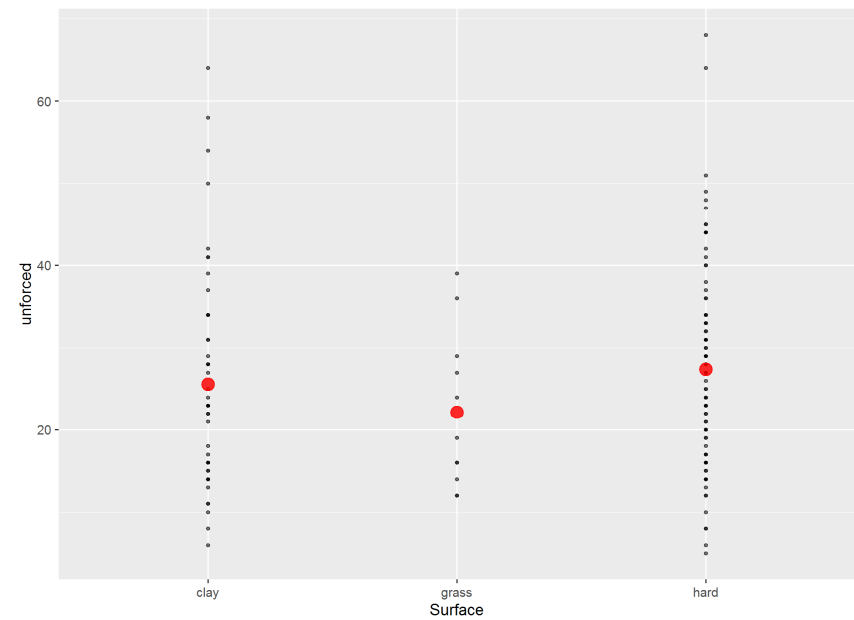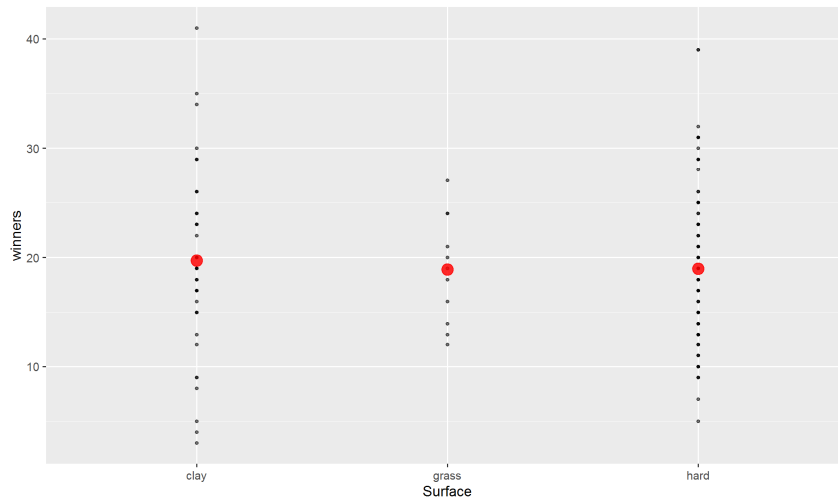
Simona Halep

SILVIA DINU

Overview

Simona Halep is a Romanian tennis player that had a rapid rise in the rankings in the last 3 years (2012 - Top 50 Player, 2013 - No. 11, 2014 - No. 3, 2015 - No. 2). As tennis is a game of patterns, the goal of this project is to make an analysis of the way Simona Halep has changed her game from a lower ranked player to a Top 5 competitor.
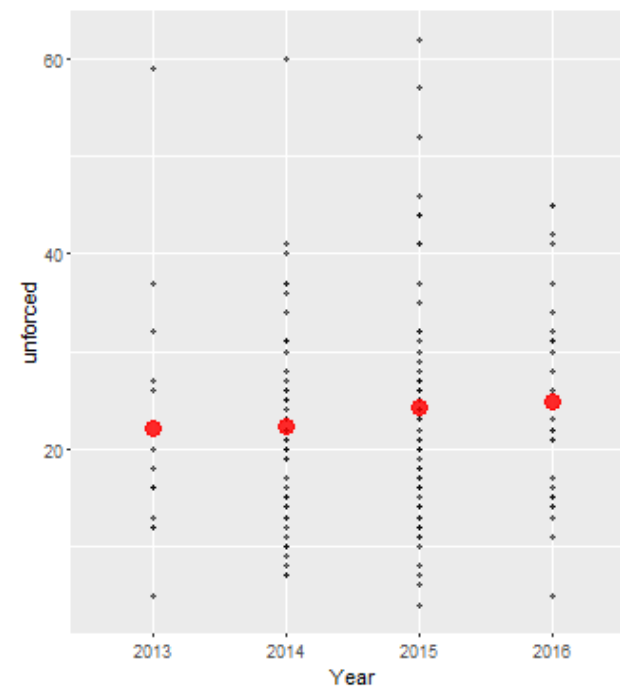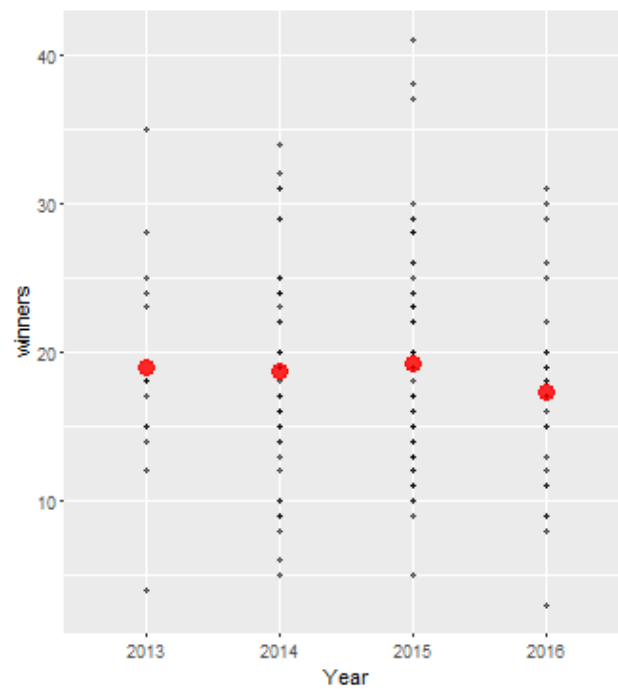
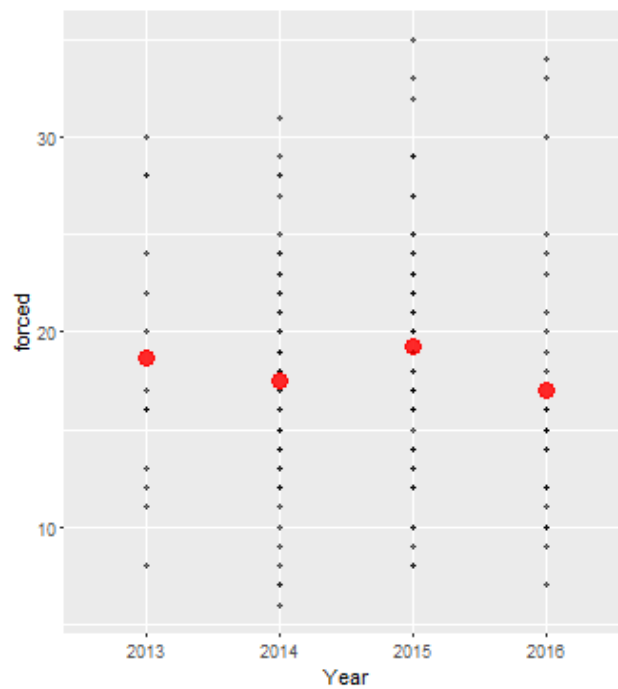# Win and Lose by tournament, year and surface – Fig. 1

The average of winners – Fig. 2 and unforced errors – Fig. 3 by surface
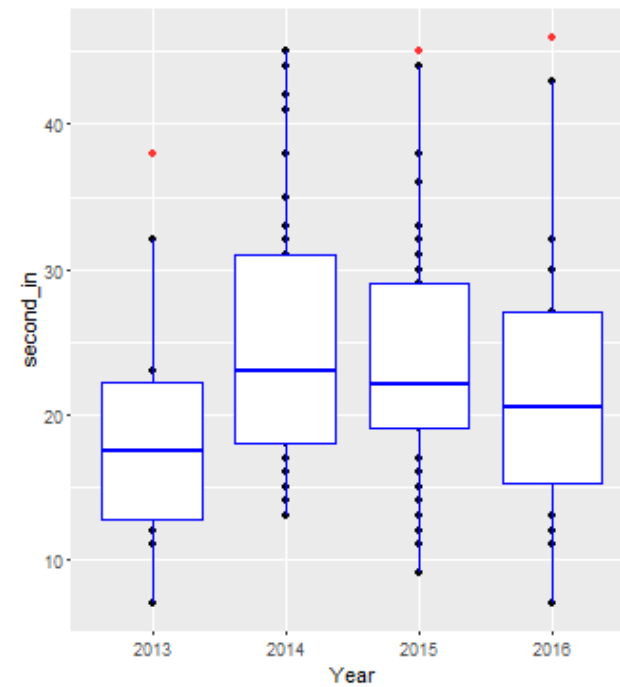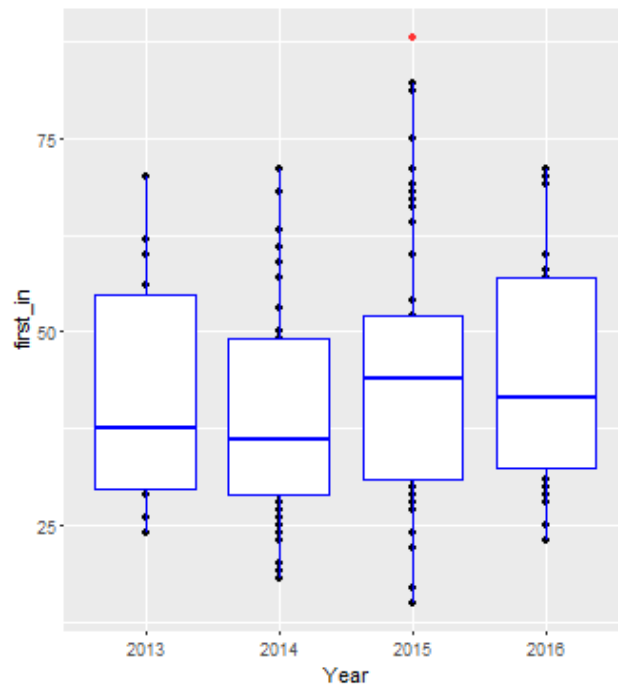
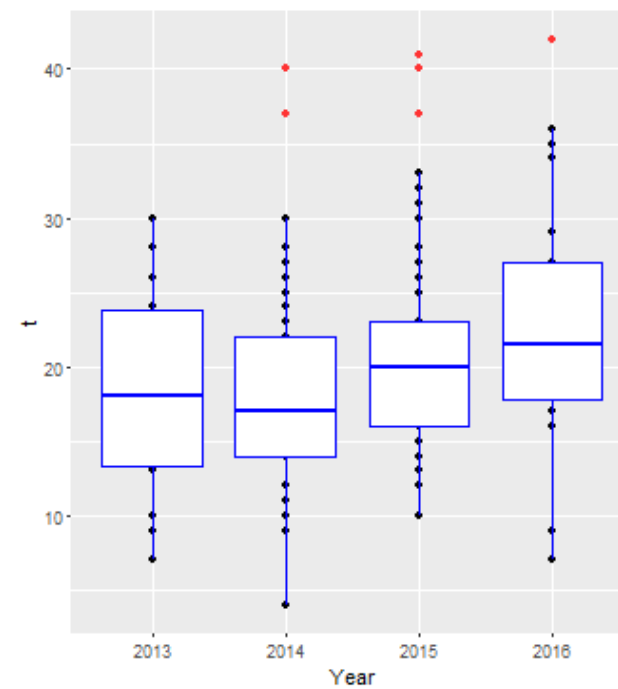# The average of winners – Fig. 4 and unforced errors – Fig. 5 by year
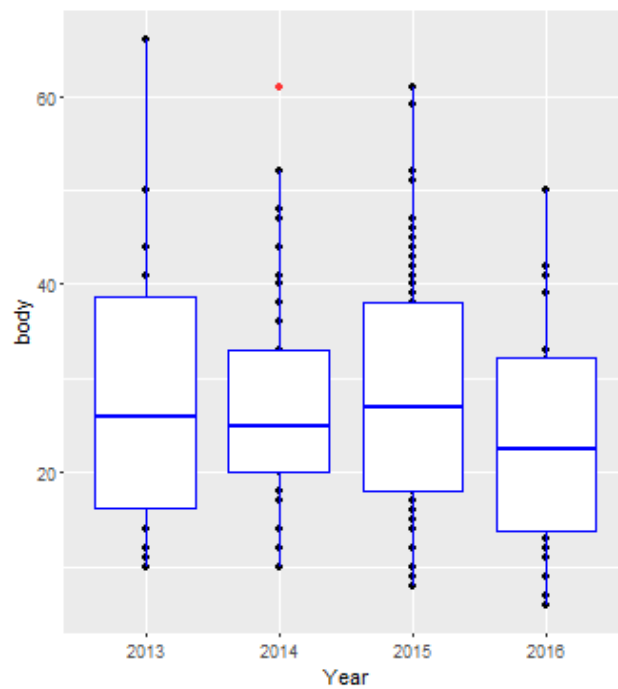
The average of forced errors by year – Fig. 6
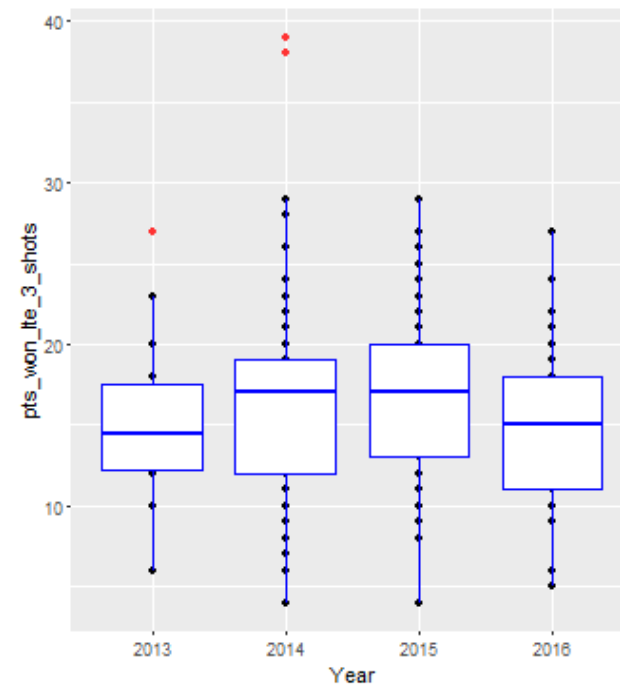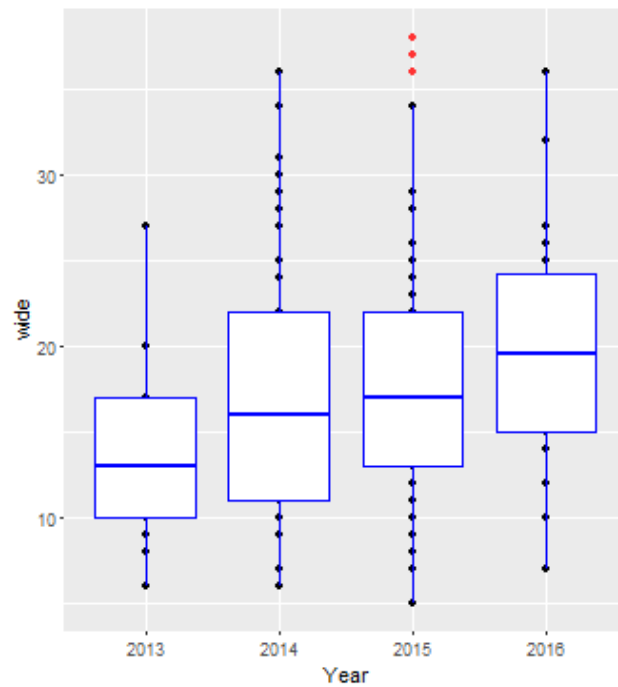
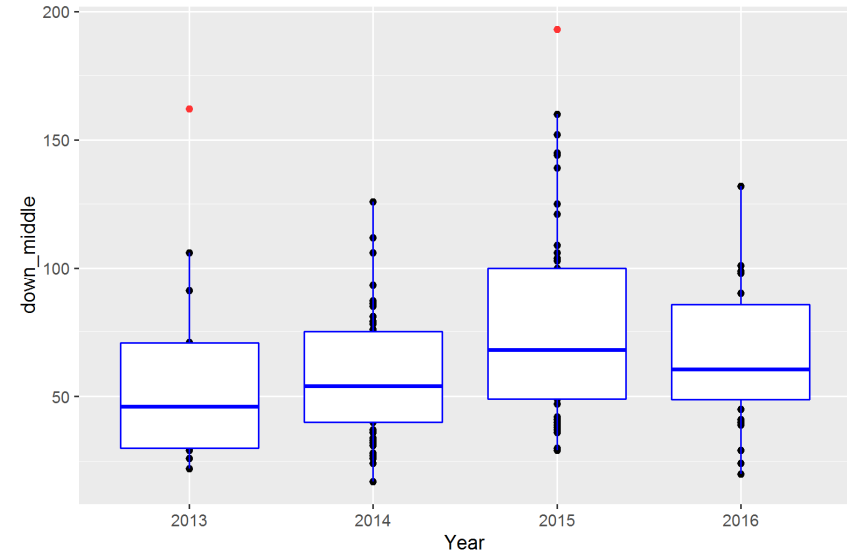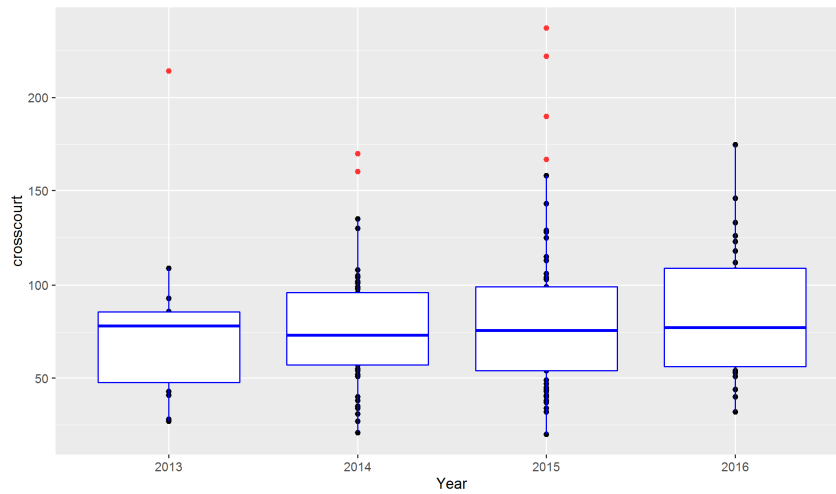# The average first serves in -Fig. 7 and second serves in – Fig. 8 by year

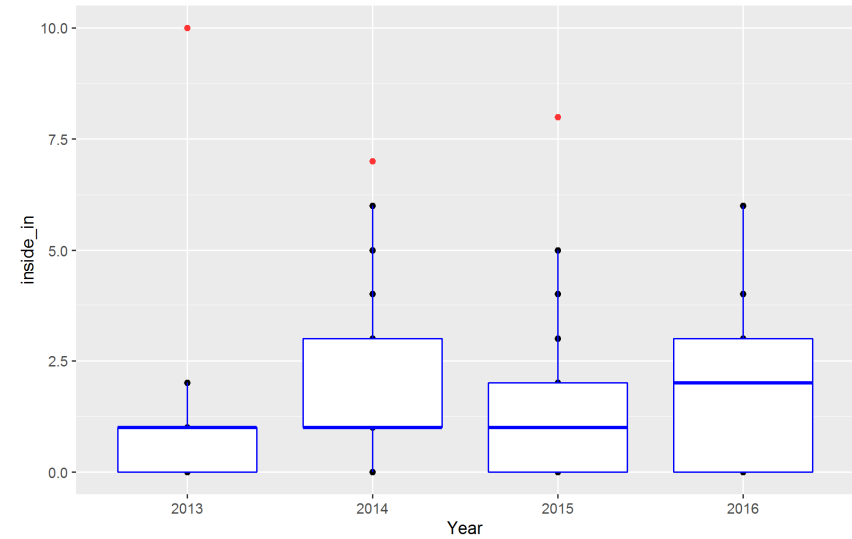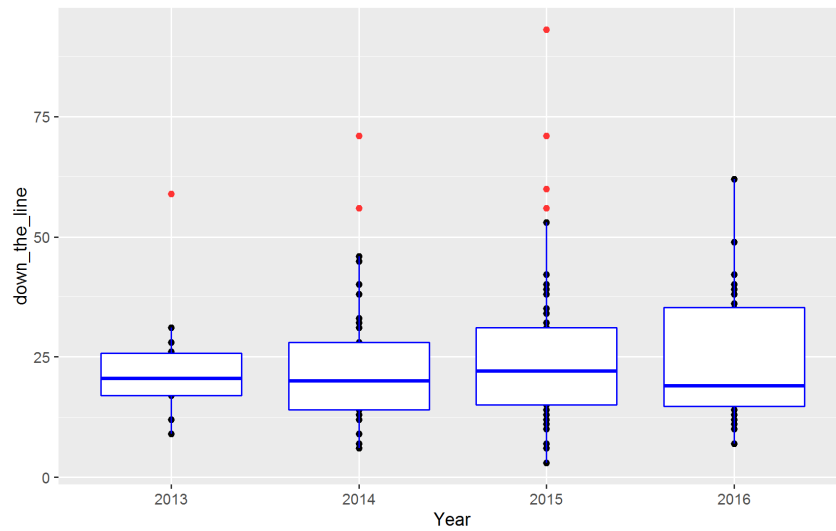# Serve basics by year: body – Fig. 9, t – Fig. 10

Serve basics by year: wide – Fig. 11, won longer than 3 shots – Fig. 12
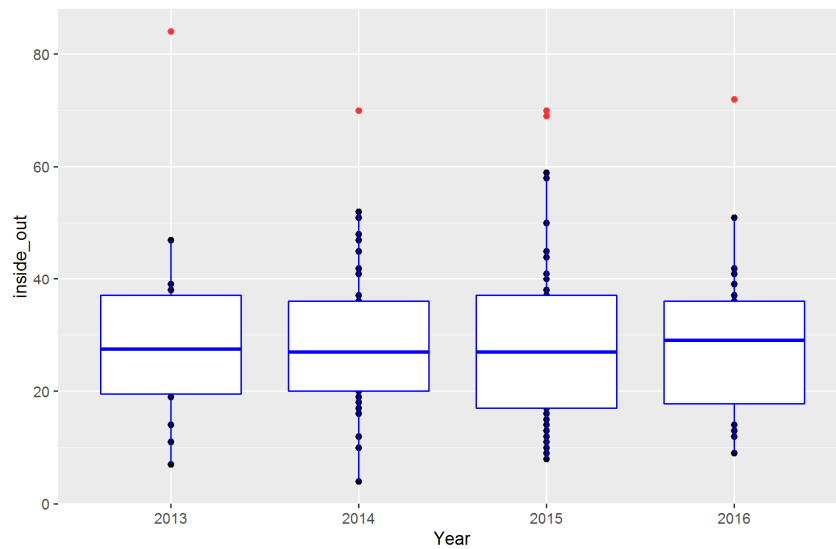
Shot direction by year: crosscourt - Fig. 13, down middle – Fig. 14

Shot direction by year: down the line – Fig. 15, inside in – Fig. 16

Shot direction by year: inside out – Fig. 17

Analysis

The analysis covers 152 matches over a span of four years from May 2013 to June 2016. From the 152 matches, 114 were wins (75%) and 38 were losses(25%).

1. Simona's favorite surface is the hard court. Her smart aggressive game is very suitable for this surface. As we can see from Fig. 1 the number of matches won on hard courts is the biggest.

2. The average number of winners and the unforced errors are almost the same on all the three surfaces as we can see in Fig. 2 and Fig. 3.

3. Fig. 4, Fig. 5 and Fig. 6 show a slight drop in average winners and forced errors in 2016 and a slight increase in unforced errors in 2016. This is can be a sign of trying to be more aggressive on the court.

4. We can see in Fig. 7 and Fig. 8 the first serve in and second serve in percentages were very good in 2015 with a short decrease but constant percentage in 2016

Analysis

5. In the serve basics figures: Fig. 9-12 we can see a pattern – a decrease in the numbers of the body serve and points longer than 3 shots and an increase in the wide and t serves. This is a sign of a more aggressive pattern of play.

6. From the shot direction figures: Fig. 13-17 an increase in the down the middle, inside out and inside in shots. The crosscourt and the down the line shots have a more constant pattern.

Decision tree

The main node is Break Points. It is really interesting that this is the most important variable of the tree.

Each node shows:

- the predicted class (win or lose)

- the predicted probability of winning

- the percentage of observations in the node