Results of Static Premier League scheduling

Since the goal is to improve the suspense of the premier league at the end of the season, we first have to look at how a static schedule performs.
This will give us a baseline to compare with an based on these results we can try to see where improvements are possible.
The results are obtained by performing 1000 simulations with different schedules and different match outcomes each time.

1. Load the data

2. Analyzing the suspense of static schedules

The suspsense/attractiveness will mainly be measured by looking at the final 5 rounds.
For those rounds we will take a look at the number of (ir)relevant matches, but also at the number of teams that are still in the running for certain places (title, champions league and relegation).
We also check the number of times that certain type of matches (title matches, relegation matches, ...) occur and the average points difference between teams in all the matches.

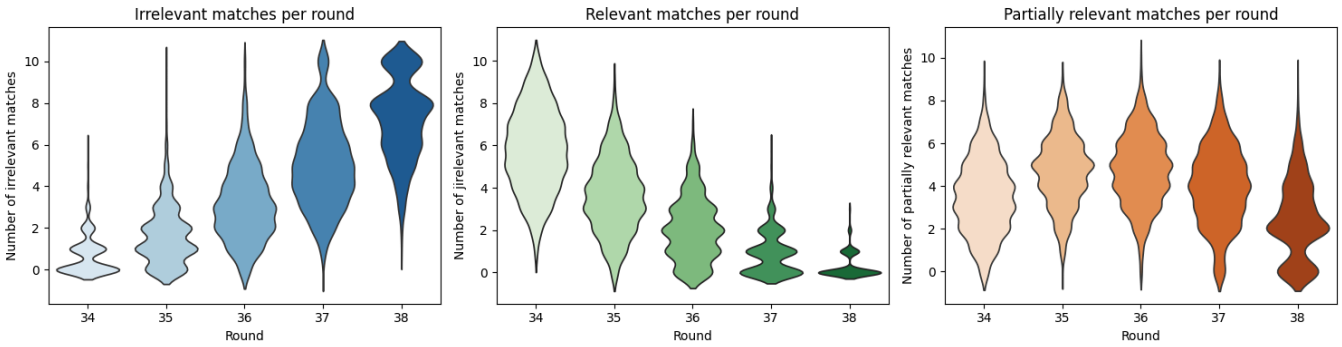
2.1 Different types of matches during the last 5 rounds

A match is relevant for a team if the title, championsleague qualification (top 4) or relegation (bottom 3) is dependent on it.

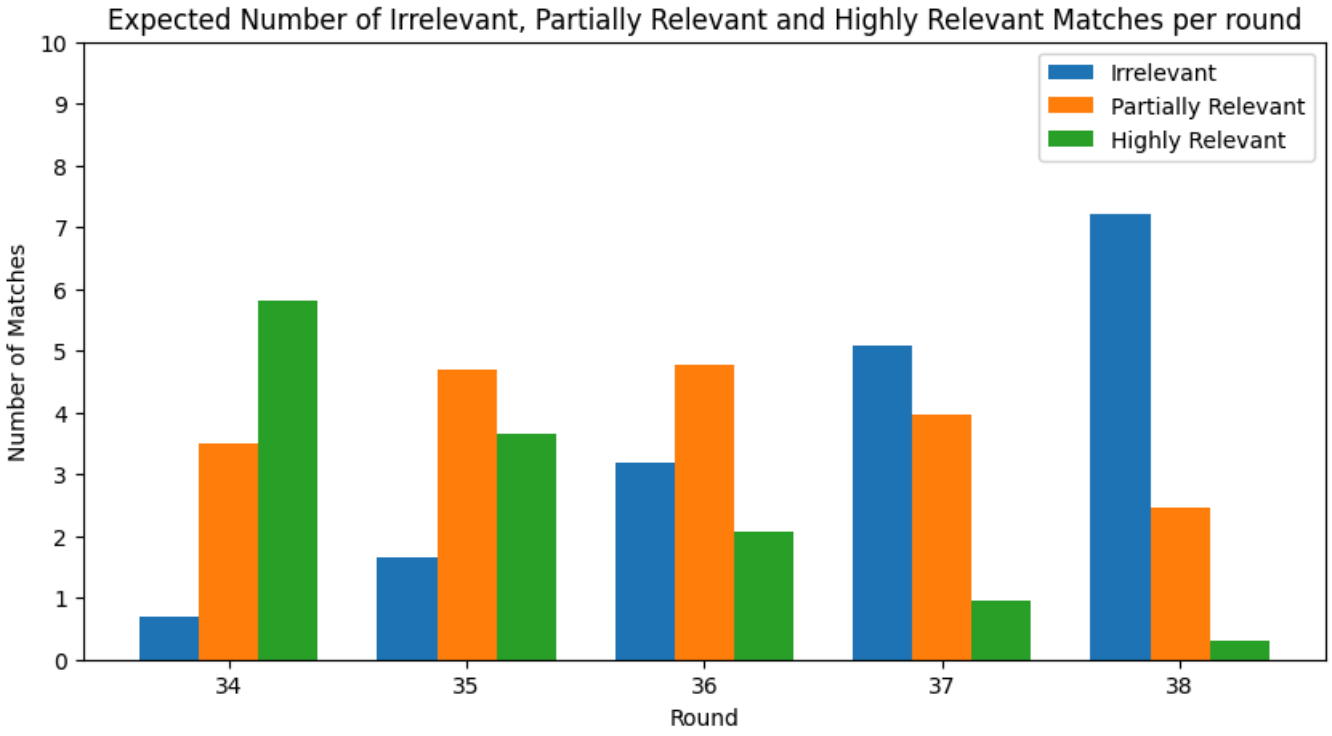
- **Relevant matches** are matches that are relevant for both teams.
- **Partially relevant** matches are matches that are only relevant for one of the teams.
- **Irrelevant matches** are matches where both teams have nothing at stake.

2.1.1 Irrelevant matches, relevant matches and partially relevant matches

Start by making a violin plot that shows the distribution of the different types of matches over the last 5 rounds over the 1000 simulations.



Plot the expected values to get a clear overview of what we can expect in each round



2.1.2 Interest differences in later rounds

We make a distinguishment between

- **title vs relegation matches**
  (one team competing for the title, other team fighting against relegation)
- **title matches**
  (both teams still competing for the title)
- **champions league matches**
  (both teams still fighting for champions league tickets)

- **relegation matches**
  (both teams fighting against relegation)

- **champions league vs relegation matches**
  (one team fighting for a champions league spot while the other team fights against relegation)

Plot the different type of matches over the last 5 rounds

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<matplotlib.legend.Legend at 0x2967968de50>
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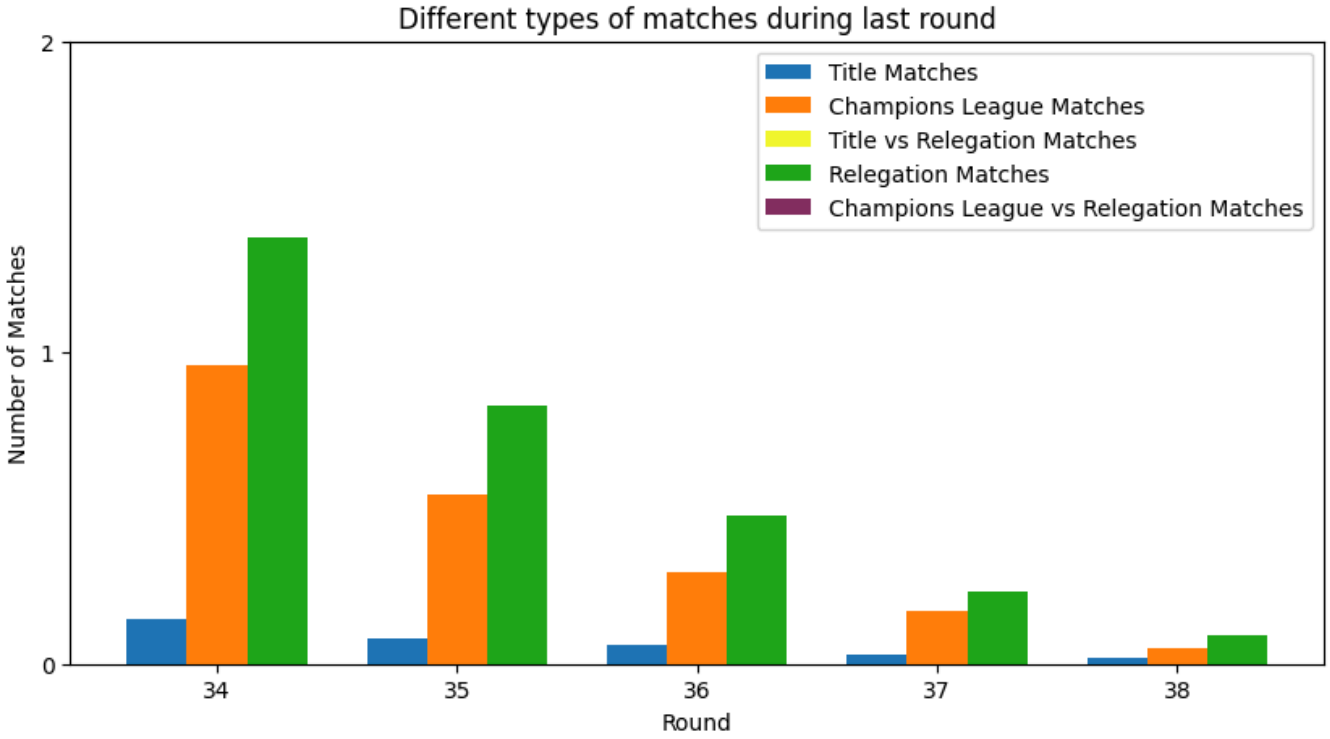
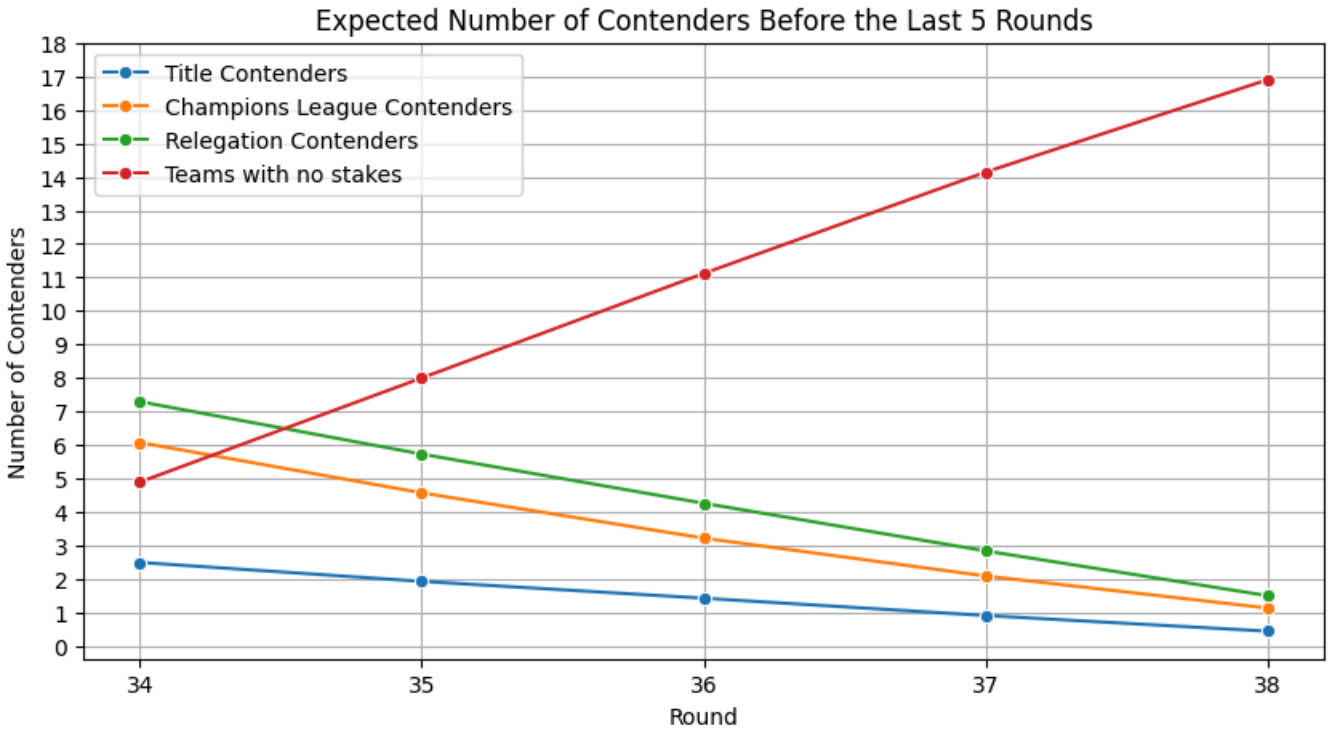


2.2 Teams in the running for different places

Plot the number of teams that are expected to be in the running for different places before any of the last 5 rounds


Expected Number of Contenders Before the Last 5 Rounds
Title Contenders
Champions League Contenders
Relegation Contenders
Teams with no stakes
Number of Contenders
Round
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
34
35
36
37
38