

English Premier League 2021-2022

In this project, I try to dig into the numbers of the EPL 21-22. I analyze and visualize some key statistics from the season.

The data for this project was acquired from the website <https://www.football-data.co.uk/> . The raw data contained data with 106 columns and 381 rows. It contains the details of 380 matches that were played throughout the season. I had to clean the dataset for my project and remove lots of columns. In the end, I kept important columns like HomeTeam, AwayTeam, HomeGoals, AwayGoals, Result,

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
1	Div	Date	Time	HomeTeam	AwayTeam	FTHG	FTAG	FTR	HTHG	HTAG	HTR	Referee	HS	AS	HST	AST	HF	AF	HC	AC	HY
2	E0	13/08/202	20:00	Brentford	Arsenal	2	0	H	1	0	H	M Oliver	8	22	3	4	12	8	2	5	
3	E0	14/08/202	12:30	Man Unite	Leeds	5	1	H	1	0	H	P Tierney	16	10	8	3	11	9	5	4	
4	E0	14/08/202	15:00	Burnley	Brighton	1	2	A	1	0	H	D Coote	14	14	3	8	10	7	7	6	
5	E0	14/08/202	15:00	Chelsea	Crystal Pa	3	0	H	2	0	H	J Moss	13	4	6	1	15	11	5	2	
6	E0	14/08/202	15:00	Everton	Southamp	3	1	H	0	1	A	A Madley	14	6	6	3	13	15	6	8	
7	E0	14/08/202	15:00	Leicester	Wolves	1	0	H	1	0	H	C Pawson	9	17	5	3	6	10	5	4	
8	E0	14/08/202	15:00	Watford	Aston Vill	3	2	H	2	0	H	M Dean	13	11	7	2	18	13	2	4	
9	E0	14/08/202	17:30	Norwich	Liverpool	0	3	A	0	1	A	A Marrine	14	19	3	8	4	14	3	11	
10	E0	15/08/202	14:00	Newcastle	West Ham	2	4	A	2	1	H	M Atkinso	17	8	3	9	4	3	7	6	
11	E0	15/08/202	16:30	Tottenhar	Man City	1	0	H	0	0	D	A Taylor	13	18	3	4	11	8	3	11	
12	E0	21/08/202	12:30	Liverpool	Burnley	2	0	H	1	0	H	M Dean	27	9	9	3	6	12	8	4	
13	E0	21/08/202	15:00	Aston Vill	Newcastle	2	0	H	1	0	H	D Coote	10	9	2	1	8	18	3	4	
14	E0	21/08/202	15:00	Crystal Pa	Brentford	0	0	D	0	0	D	M Atkinso	7	14	2	3	12	9	3	5	
15	E0	21/08/202	15:00	Leeds	Everton	2	2	D	1	1	D	D England	17	17	4	8	6	13	8	5	
16	E0	21/08/202	15:00	Man City	Norwich	5	0	H	2	0	H	G Scott	16	1	4	0	13	7	6	1	
17	E0	21/08/202	17:30	Brighton	Watford	2	0	H	2	0	H	A Taylor	13	10	3	1	11	6	7	2	
18	E0	22/08/202	14:00	Southamp	Man Unite	1	1	D	1	0	H	C Pawson	8	15	3	4	12	10	7	7	
19	E0	22/08/202	14:00	Wolves	Tottenhar	0	1	A	0	1	A	S Attwell	25	8	6	6	9	7	5	4	
20	E0	22/08/202	16:30	Arsenal	Chelsea	0	2	A	0	2	A	P Tierney	6	22	3	5	10	4	9	8	
21	E0	23/08/202	20:00	West Ham	Leicester	4	1	H	1	0	H	M Oliver	13	5	7	1	8	8	10	0	
22	E0	28/08/202	12:30	Man City	Arsenal	5	0	H	3	0	H	M Atkinso	25	1	10	0	5	7	14	0	

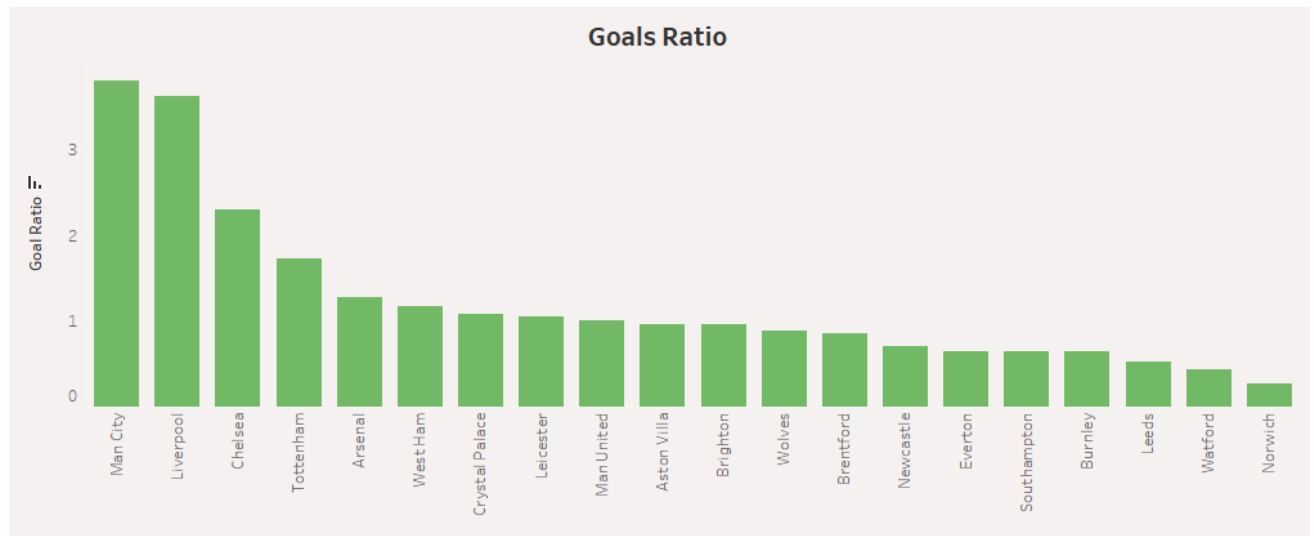
HomeShot, AwayShot, HomeShotsTarget, AwayShotsTarget etc. Note that, the names of the columns were renamed to make better sense. All the cleaning was done on Microsoft Excel.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Div	Date	Time	HomeTeam	AwayTeam	HomeGoals	AwayGoals	Result	Referee	HomeShot	AwayShot	HomeShotsTarget	AwayShotsTarget	HomeFoul	AwayF
2	E0	13/08/2021	1/0/1900 20:00	Brentford	Arsenal	2	0	H	M Oliver	8	22	3	4	12	
3	E0	14/08/2021	1/0/1900 12:30	Man United	Leeds	5	1	H	P Tierney	16	10	8	3	11	
4	E0	14/08/2021	1/0/1900 15:00	Burnley	Brighton	1	2	A	D Coote	14	14	3	8	10	
5	E0	14/08/2021	1/0/1900 15:00	Chelsea	Crystal Palace	3	0	H	J Moss	13	4	6	1	15	
6	E0	14/08/2021	1/0/1900 15:00	Everton	Southampton	3	1	H	A Madley	14	6	6	3	13	
7	E0	14/08/2021	1/0/1900 15:00	Leicester	Wolves	1	0	H	C Pawson	9	17	5	3	6	
8	E0	14/08/2021	1/0/1900 15:00	Watford	Aston Villa	3	2	H	M Dean	13	11	7	2	18	
9	E0	14/08/2021	1/0/1900 17:30	Norwich	Liverpool	0	3	A	A Marriner	14	19	3	8	4	
10	E0	15/08/2021	1/0/1900 14:00	Newcastle	West Ham	2	4	A	M Atkinson	17	8	3	9	4	
11	E0	15/08/2021	1/0/1900 16:30	Tottenham	Man City	1	0	H	A Taylor	13	18	3	4	11	
12	E0	21/08/2021	1/0/1900 12:30	Liverpool	Burnley	2	0	H	M Dean	27	9	9	3	6	
13	E0	21/08/2021	1/0/1900 15:00	Aston Villa	Newcastle	2	0	H	D Coote	10	9	2	1	8	
14	E0	21/08/2021	1/0/1900 15:00	Crystal Palace	Brentford	0	0	D	M Atkinson	7	14	2	3	12	
15	E0	21/08/2021	1/0/1900 15:00	Leeds	Everton	2	2	D	D England	17	17	4	8	6	
16	E0	21/08/2021	1/0/1900 15:00	Man City	Norwich	5	0	H	G Scott	16	1	4	0	13	
17	E0	21/08/2021	1/0/1900 17:30	Brighton	Watford	2	0	H	A Taylor	13	10	3	1	11	
18	E0	22/08/2021	1/0/1900 14:00	Southampton	Man United	1	1	D	C Pawson	8	15	3	4	12	
19	E0	22/08/2021	1/0/1900 14:00	Wolves	Tottenham	0	1	A	S Attwell	25	8	6	6	9	
20	E0	22/08/2021	1/0/1900 16:30	Arsenal	Chelsea	0	2	A	P Tierney	6	22	3	5	10	
21	E0	23/08/2021	1/0/1900 20:00	West Ham	Leicester	4	1	H	M Oliver	13	5	7	1	8	
22	E0	28/08/2021	1/0/1900 12:30	Man City	Arsenal	5	0	H	M Atkinson	25	1	10	0	5	

Then I did some analysis. First, I wanted to see the goals ratio by each team. To calculate this ratio, I divided the total goals scored by a team by the total goals conceded by that team. I used the Excel function SUMIF to extract the total number of goals scored by a particular team when it played as a Home Team and again to extract the total number of goals scored by that team when it played as an Away Team. I added both the totals to get the total goals scored by that team.

Again, I used the same function to extract the total number of goals conceded (goals scored by away team) by a particular team when it played as a Home Team and used it again to extract the total

number of goals conceded (goals scored by home team) by that team when it played as an Away Team. I added both the totals to get the total goals conceded by that team. Finally, I divided them to get the goals ratio. Man City had the best goals ratio with 3.8 goals scored

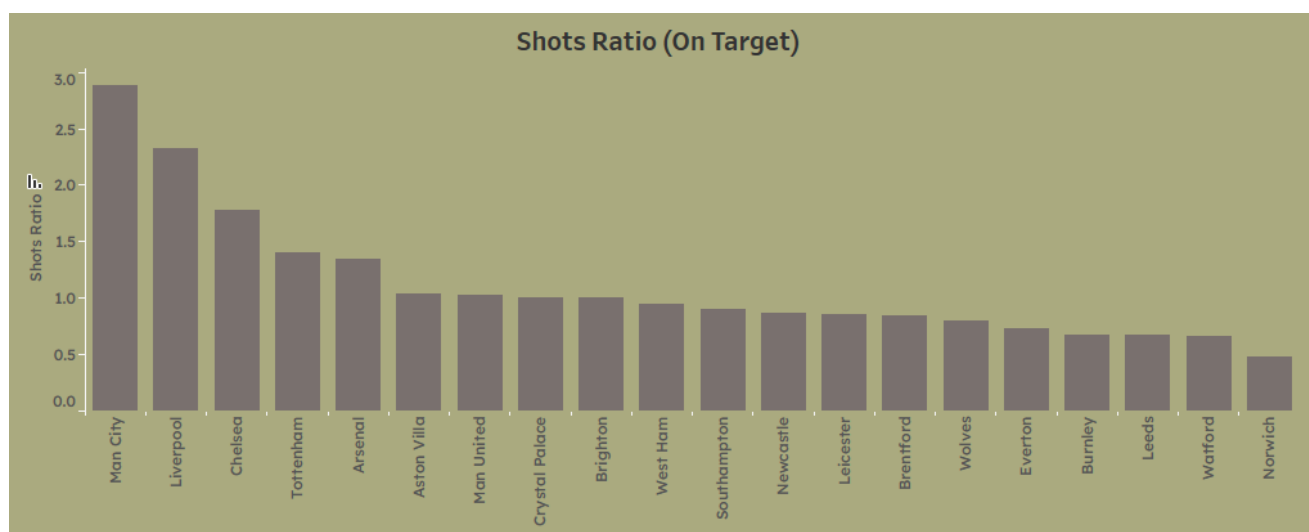


for every goal conceded. Liverpool closely followed with 3.61. The next best is Chelsea with 2.3. On the lower side, Norwich finished with just 0.274 goals scored for each goal conceded.

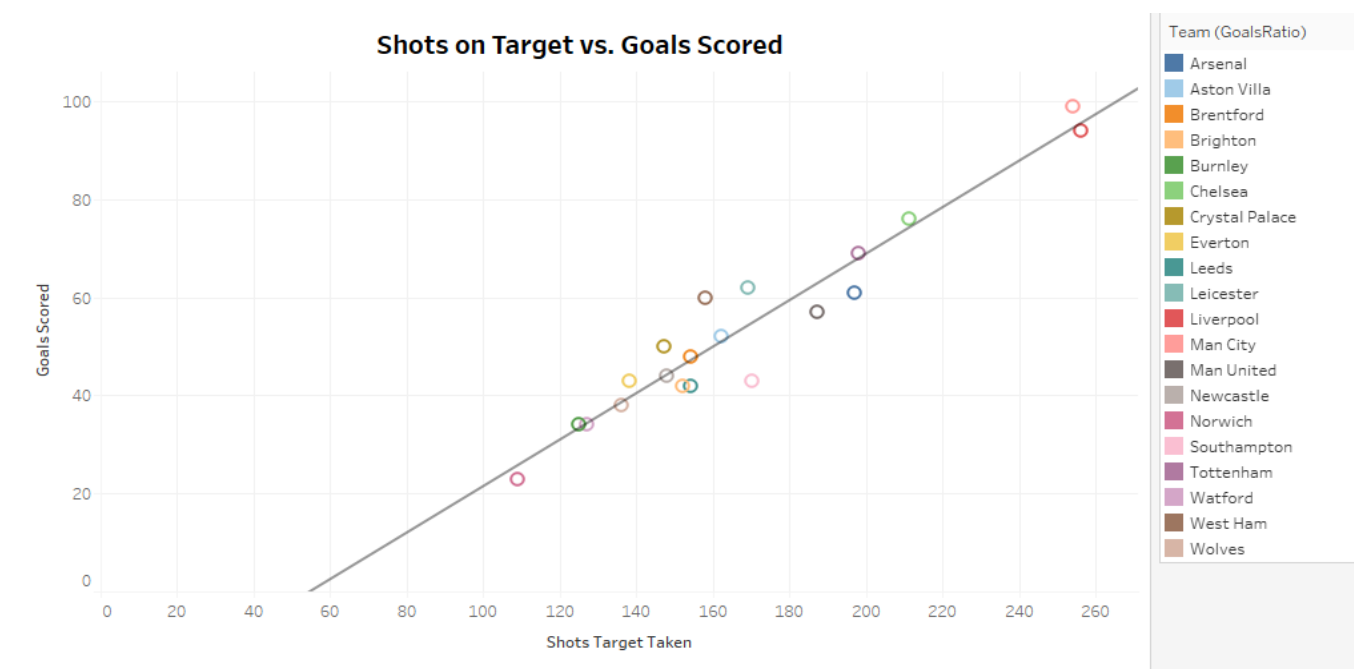
Next, I analyzed Shots on Target ratio. It was calculated by dividing total shots taken on target by total shots conceded on target by each team. I used a similar SUMIF formula to extract necessary numbers for this analysis.

It again showed that Manchester City was on top with the highest ratio of 2.89. That is, for every shot taken on target against them, they took 2.89 shots on target in return. They were, again, followed by Liverpool with a ratio of 2.32. Chelsea again found themselves in the third spot with a ratio of 1.773. Norwich finished last with just 0.474 shots taken on target for each shot conceded on target. Teams in the middle were very close to one another and were around the 1.

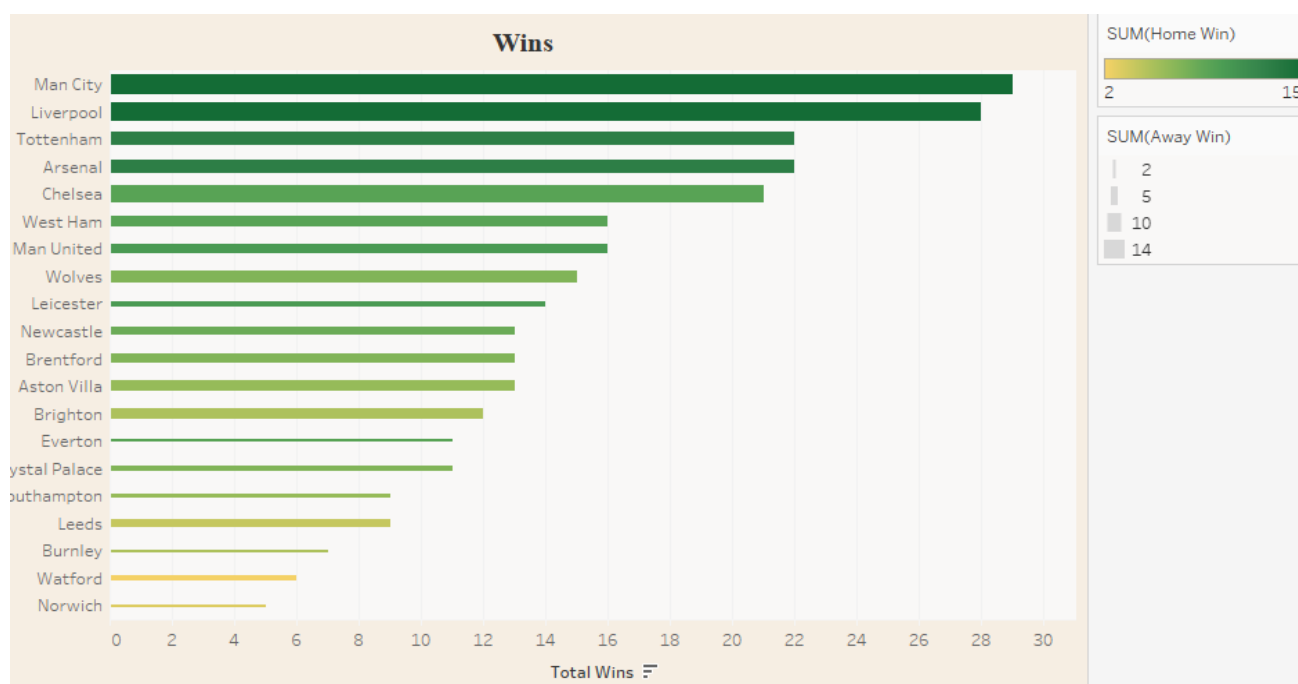
Team	ShotsTargetTaken	ShotsTargetConceded	ShotsRatio
Arsenal	197	147	1.34
Aston Villa	162	157	1.03
Brentford	154	183	0.84
Brighton	152	152	1.00
Burnley	125	187	0.67
Chelsea	211	119	1.77
Crystal Palace	147	146	1.01
Everton	138	190	0.73
Leeds	154	231	0.67
Leicester	169	197	0.86
Liverpool	256	110	2.33
Man City	254	88	2.89
Man United	187	183	1.02
Newcastle	148	171	0.87
Norwich	109	230	0.47
Southampton	170	189	0.90
Tottenham	198	141	1.40
Watford	127	193	0.66
West Ham	158	167	0.95
Wolves	136	171	0.80



As we know more shots on target is likely to result in more goals. And it is true in this case. In the visualization below we can see a very strong correlation between shots on target vs. goals scored. Man City took in total 254 shots on target and scored 99 goals, highest in the league. Liverpool took 256 shots and turned 94 of them into goals. Chelsea took 211 and scored 76 goals.

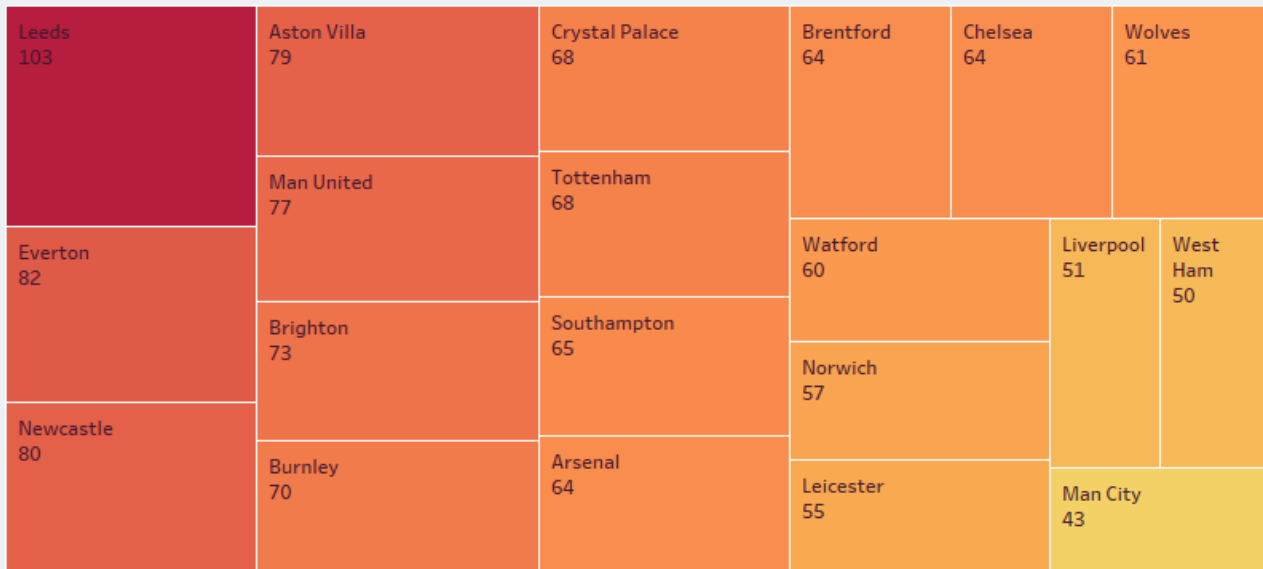


Norwich took the lowest shots on target, 109, and scored only 23 goals.



Then we move to win/lose stats. Here again Man City and Liverpool show their dominance. Man City won 15 home games and 14 away games, being equally good on both home and away. Liverpool, on the other hand, won 15 home games and 13 away games, showing similar dominance. If we look at fair play, we can see that once again Manchester City was at the top with the fewest number of cards received. They received only 43 cards with 42 being Yellow and 1 being Red.

Total Cards Received



The analysis clearly shows Man City won the title deservedly. They took more shots on target and scored more goals as a result. They were equally good at home and away. Liverpool followed them very closely and ended up second in the table being just 1 point behind.

You can have a look at the dashboard by clicking [here](#).

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