

# Business insights

(IPL Data)

At first I have calculate the total number of type of result so that I can get the overview of the match , and I got three type of result

- 1) Normal
- 2) Tie
- 3) No result

Only 9 matches are tie and 4 match have no result rest matches are normal.

### counting the result of match

```
[ ] df_match.result.value_counts()

normal      743
tie          9
no result    4
Name: result, dtype: int64
```

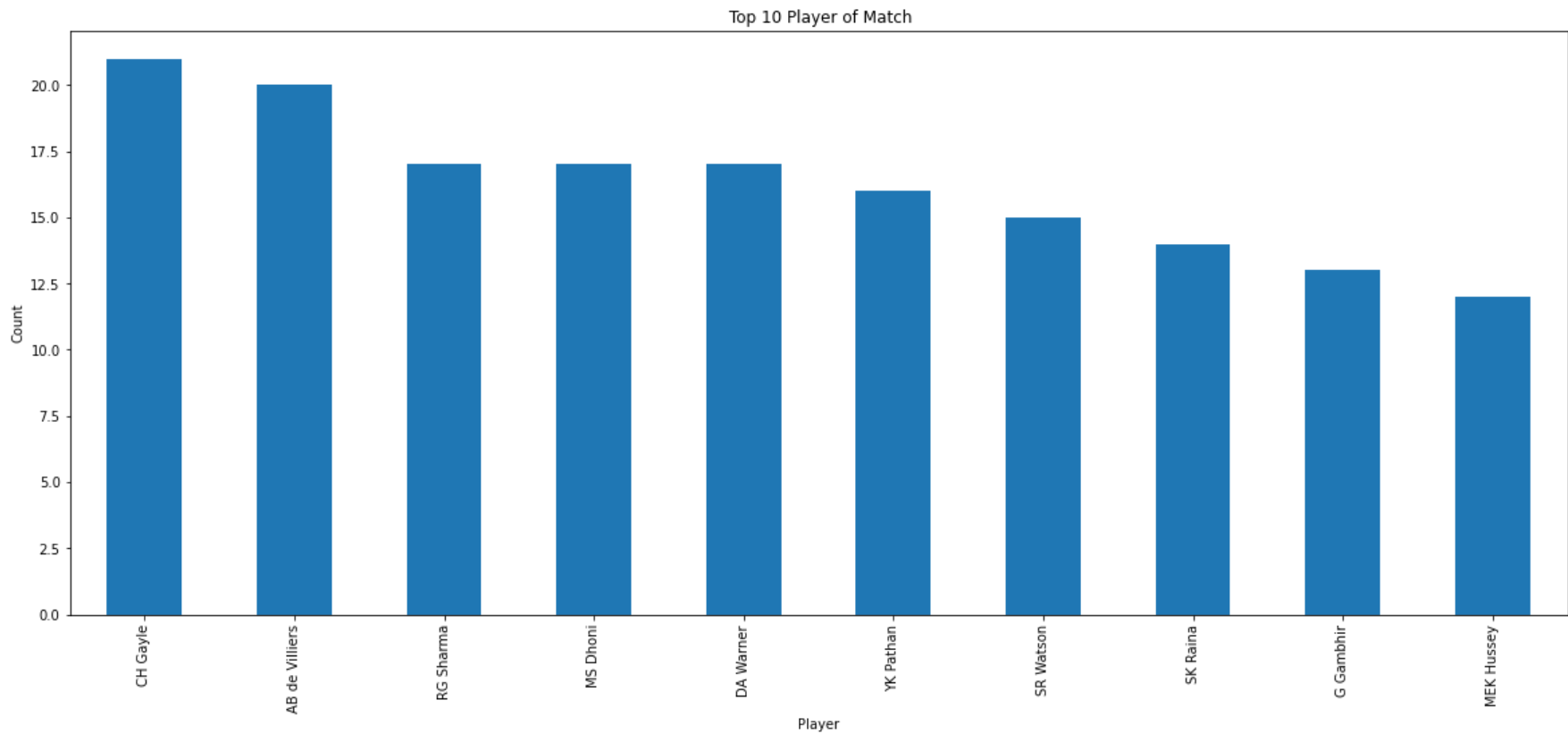
Top 10 player of match

```
top10player=df_match['player_of_match'].value_counts().head(10)
top10player
```

CH Gayle	21
AB de Villiers	20
RG Sharma	17
MS Dhoni	17
DA Warner	17
YK Pathan	16
SR Watson	15
SK Raina	14
G Gambhir	13
MEK Hussey	12

Name: player\_of\_match, dtype: int64

After finding the match overview ,I have find our top 10 player that played well, so CH Gayle and AB de Villiers did it very well. CH Gayle and AB de Viliers have been the two standout match-winners for their teams in the 12 seasons so far. They have won the player of the match award 21 and 20 times respectively.



## Top 5 man of the match

```
[36] man_of_match=df_match['player_of_match'].value_counts().head()  
      print(man_of_match)
```

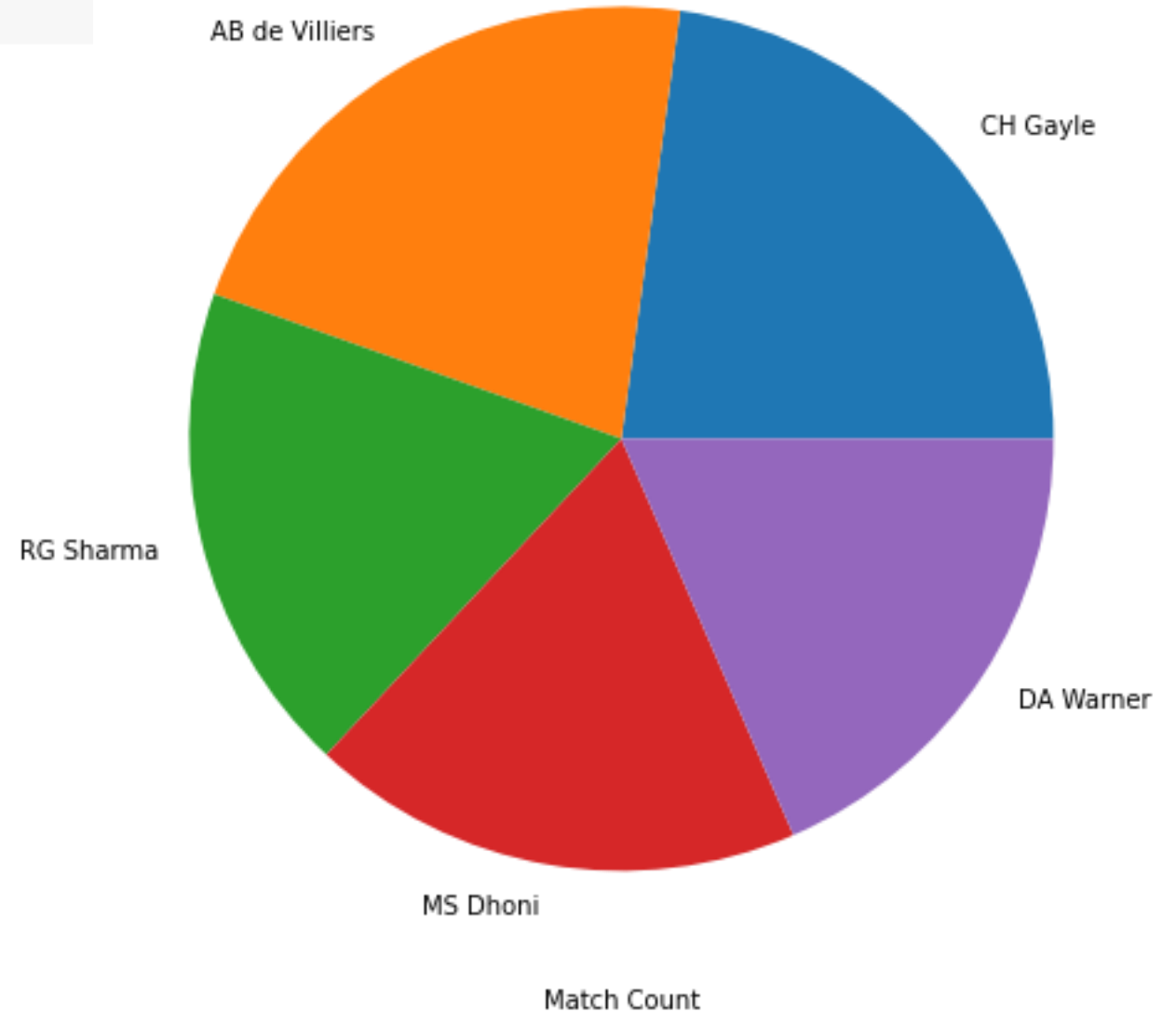
CH Gayle	21
AB de Villiers	20
RG Sharma	17
MS Dhoni	17
DA Warner	17

Name: player\_of\_match, dtype: int64

After finding the Top 10 player I have calculated the top 5 man of the match who played very well and I got, CH Gayle, AB de Villiers , RG Sharma , MS Dhoni , and DA Warner .

Out of these 5 players CH Gayle the one who got 21 times man of the match.

## Top 5 man of the match



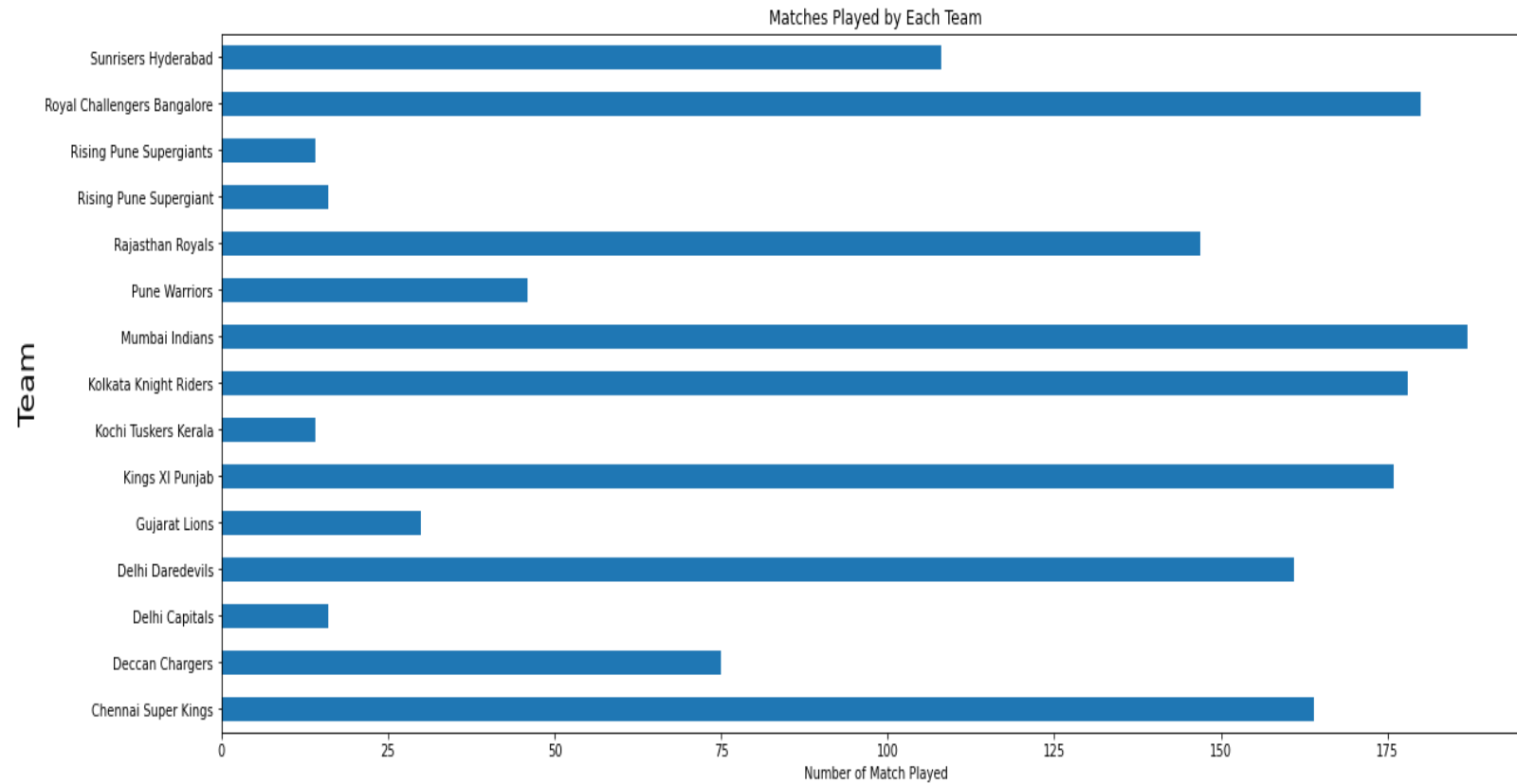
## Matches Played by Each Team

0s

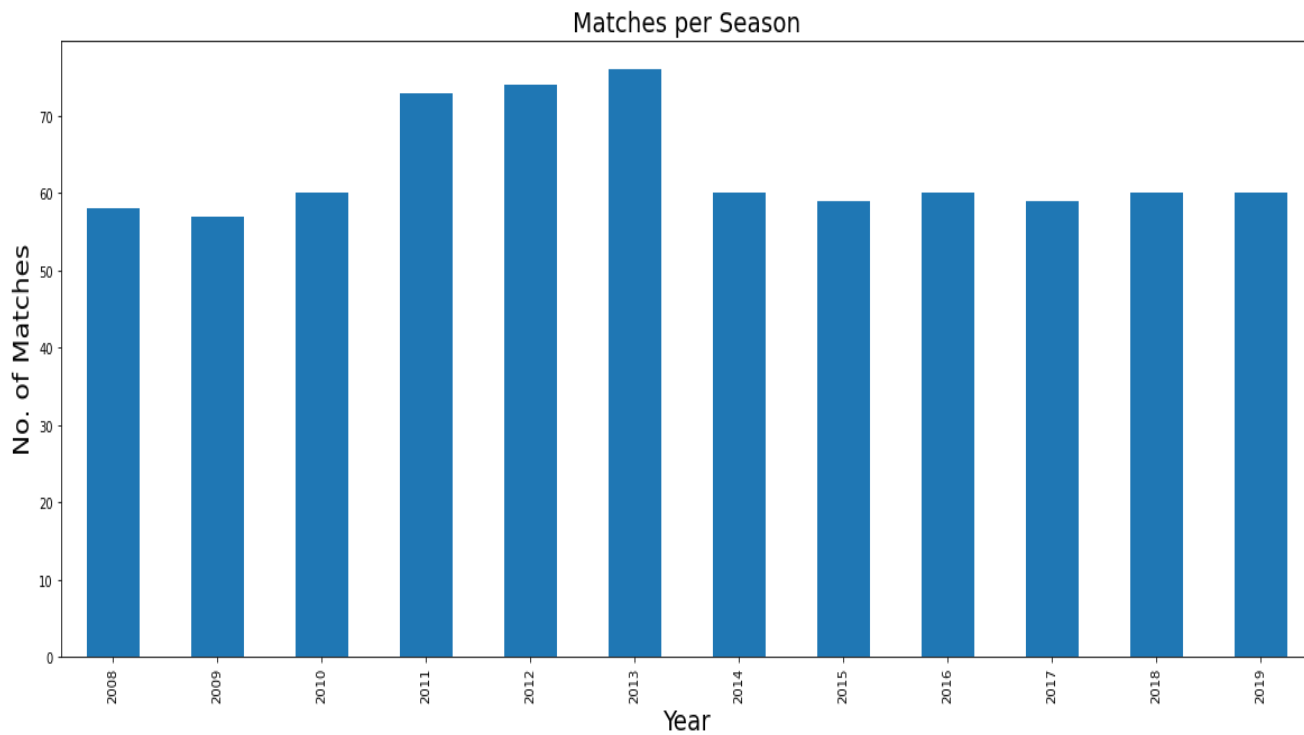


```
x = df_match['team1'].value_counts()  
y = df_match['team2'].value_counts()  
(x+y)
```

Chennai Super Kings	164
Deccan Chargers	75
Delhi Capitals	16
Delhi Daredevils	161
Gujarat Lions	30
Kings XI Punjab	176
Kochi Tuskers Kerala	14
Kolkata Knight Riders	178
Mumbai Indians	187
Pune Warriors	46
Rajasthan Royals	147
Rising Pune Supergiant	16
Rising Pune Supergiants	14
Royal Challengers Bangalore	180
Sunrisers Hyderabad	108
dtype: int64	



if we talk about the no of matches played by each team we can see that Mumbai Indians have played maximum number (187) of matches and Due to the brief expansion , change of owners, removal and banning of teams, there have been 15 teams who have played in the IPL.



### Matches per seasons

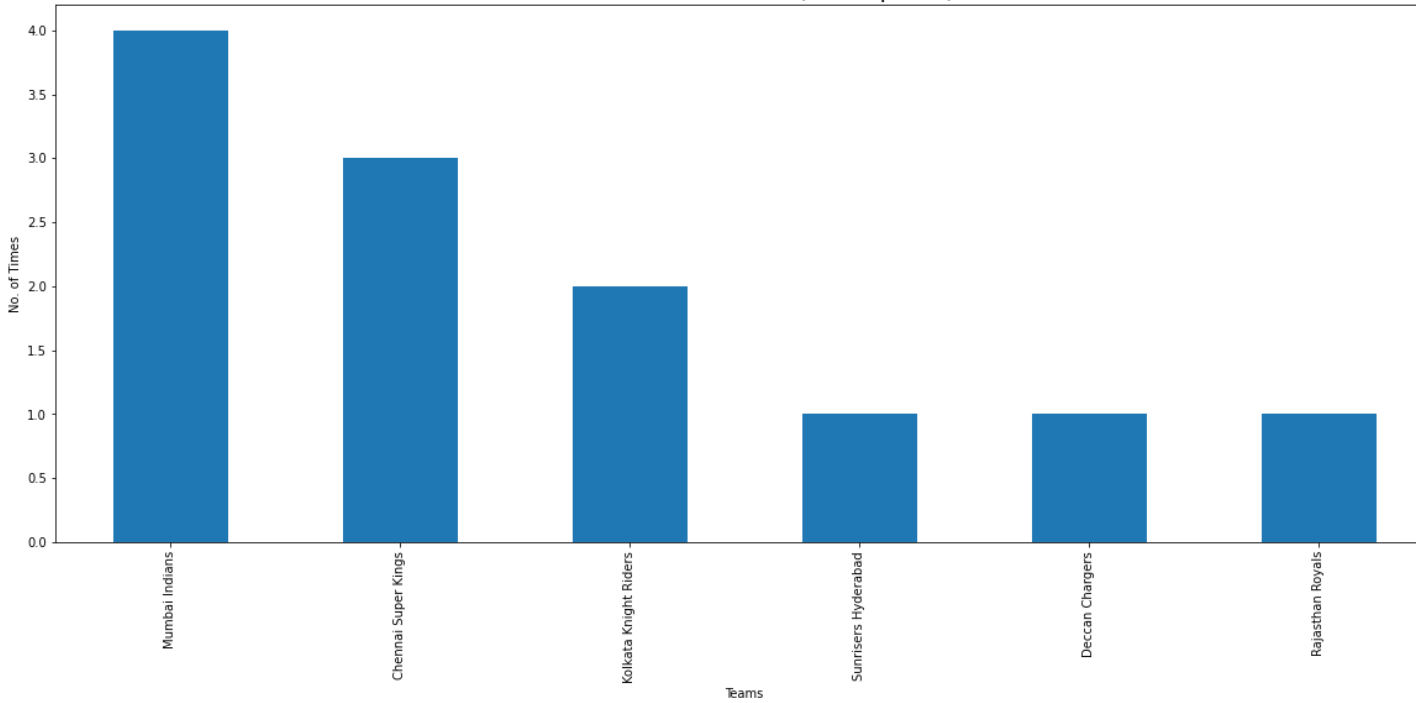
```
matches_per_season = df_match.groupby('season').id.count()  
matches_per_season
```

```
season  
2008    58  
2009    57  
2010    60  
2011    73  
2012    74  
2013    76  
2014    60  
2015    59  
2016    60  
2017    59  
2018    60  
2019    60  
Name: id, dtype: int64
```

The maximum number of matches had been played in year 2013, and least matches had been played in 2009.

In 2010,2014,2016,2018,2019 the number of matches are same (60) matches per year

Winner of the match (Champions)



Who have been the winners of match

```
[43] match_win = df_match.groupby('season').tail(1).sort_values('season', ascending = False)
```

```
match_winners = match_win.winner.value_counts()
print(match_winners)
```

```
Mumbai Indians      4
Chennai Super Kings  3
Kolkata Knight Riders 2
Sunrisers Hyderabad  1
Deccan Chargers      1
Rajasthan Royals     1
Name: winner, dtype: int64
```

Throughout the season the Mumbai Indians are the champions or winner of the match  
 Out of 12 matches Mumbai Indian wins 4 and got the ranked 1 followed by Chennai super king with 3 win

## Total run by each batsman

```
tot_run=df_del.groupby('batsman')['total_runs'].sum().sort_values(ascending=False)  
tot_run
```

```
batsman  
SK Raina      5651  
V Kohli       5616  
RG Sharma     5057  
DA Warner     4975  
S Dhawan      4876  
...  
J Denly        0  
V Pratap Singh 0  
Abdur Razzak   0  
Sunny Gupta    0  
ND Doshi       0  
Name: total_runs, Length: 516, dtype: int64
```

The total runs of each batsman is represented throughout the whole season of IPL where ,  
SK Raina scored the maximum run of (5651) and followed by virat kolhi (5616) runs and RG sharma (5057) runs and  
DA warner and Shikhar Dhawan.





## Avg Run by Teams

```
df_del[df_del['over']<6].groupby(['match_id','batting_team']).sum()['total_runs'].groupby('batting_team').mean().sort_values(ascending=False)[2:]
```

```
batting_team
Sunrisers Hyderabad      39.759259
Rising Pune Supergiant    39.375000
Kolkata Knight Riders     39.179775
Delhi Daredevils          38.440994
Kings XI Punjab           38.392045
Kochi Tuskers Kerala      38.357143
Deccan Chargers           37.586667
Royal Challengers Bangalore 37.355556
Rajasthan Royals          37.157534
Chennai Super Kings       36.926829
Mumbai Indians            36.818182
Rising Pune Supergiants   35.071429
Pune Warriors             34.822222
Name: total_runs, dtype: float64
```

Sunrisers Hyderabad has the best average in the powerplay with an average of 40 runs followed RPS(rising pune supergiant).

## Max Century by a Player

```
runs = df_del.groupby(['non_striker', 'match_id'])['total_runs'].sum()  
runs[runs >= 100].droplevel(level=1).groupby('non_striker').count().sort_values(ascending=False)[:10]
```

```
non_striker  
S Dhawan      6  
V Kohli       5  
MEK Hussey    4  
RG Sharma     4  
G Gambhir     3  
NV Ojha       3  
GC Smith      3  
SE Marsh      2  
JH Kallis     2  
KL Rahul      2  
Name: total_runs, dtype: int64
```

Shikhar Dhawan is at the top of the list in scoring the most number of centuries in IPL history. He has hit six tons and has scored 4876 runs in IPL.

- His former teammate Virat Kohli has scored five hundred's and he is at the second spot in the list followed by MEK Hussey ,RG Sharma,G Gambhir and NV ojha
- This can be calculated by grouping the columns non\_striker and match\_id and then calculating the sum.

### Most No Balls by an IPL team

✓  
28



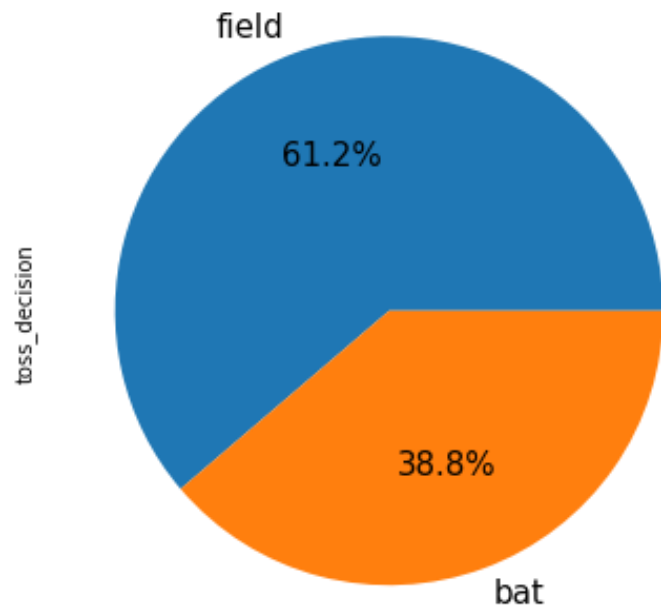
```
df_del.groupby(['batting_team'])['noball_runs'].agg('sum').sort_values(ascending=False)
```



```
batting_team
Royal Challengers Bangalore    96
Chennai Super Kings            90
Mumbai Indians                90
Kolkata Knight Riders          86
Rajasthan Royals              86
Delhi Daredevils              73
Kings XI Punjab               64
Deccan Chargers               49
Sunrisers Hyderabad           47
Pune Warriors                 24
Gujarat Lions                 17
Kochi Tuskers Kerala          11
Delhi Capitals                 8
Rising Pune Supergiants        7
Rising Pune Supergiant         1
Name: noball_runs, dtype: int64
```

- Royal Challengers Bangalore has given most no balls i.e 96 followed by Mumbai Indians and Chennai Super Kings (90)

teams who had won toss and won the match

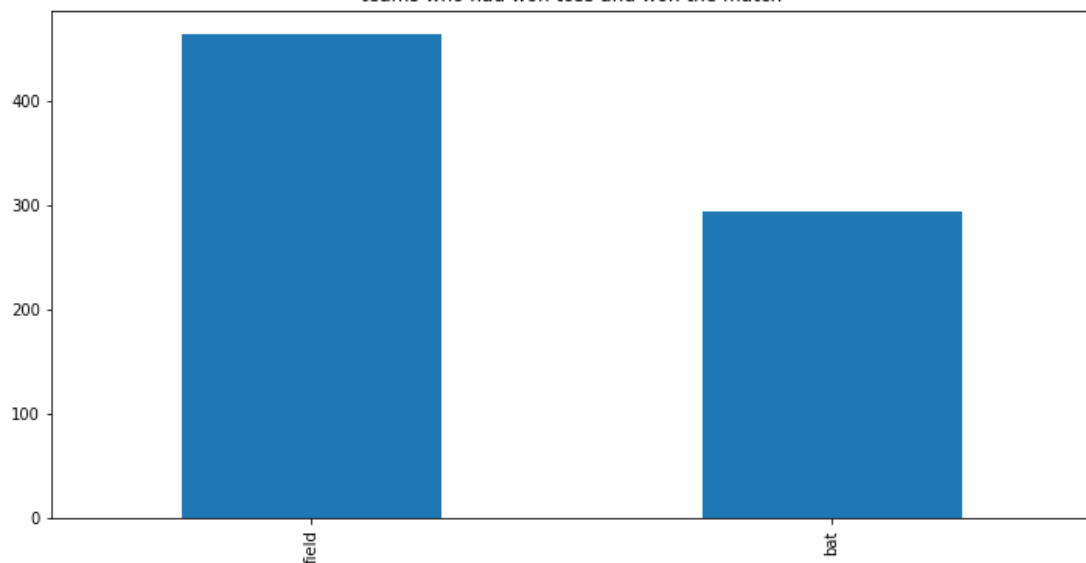


As per data if the team select the fielding after winning the toss the chances of winning will increase.

In the most of the matches maximum team select to field first (61.2%) Rest 38.8% select to bat first .

The winning percentage after toss is when the team select to field as compare to bat because they can analyse how much run they need to win and can update their strategy.

teams who had won toss and won the match



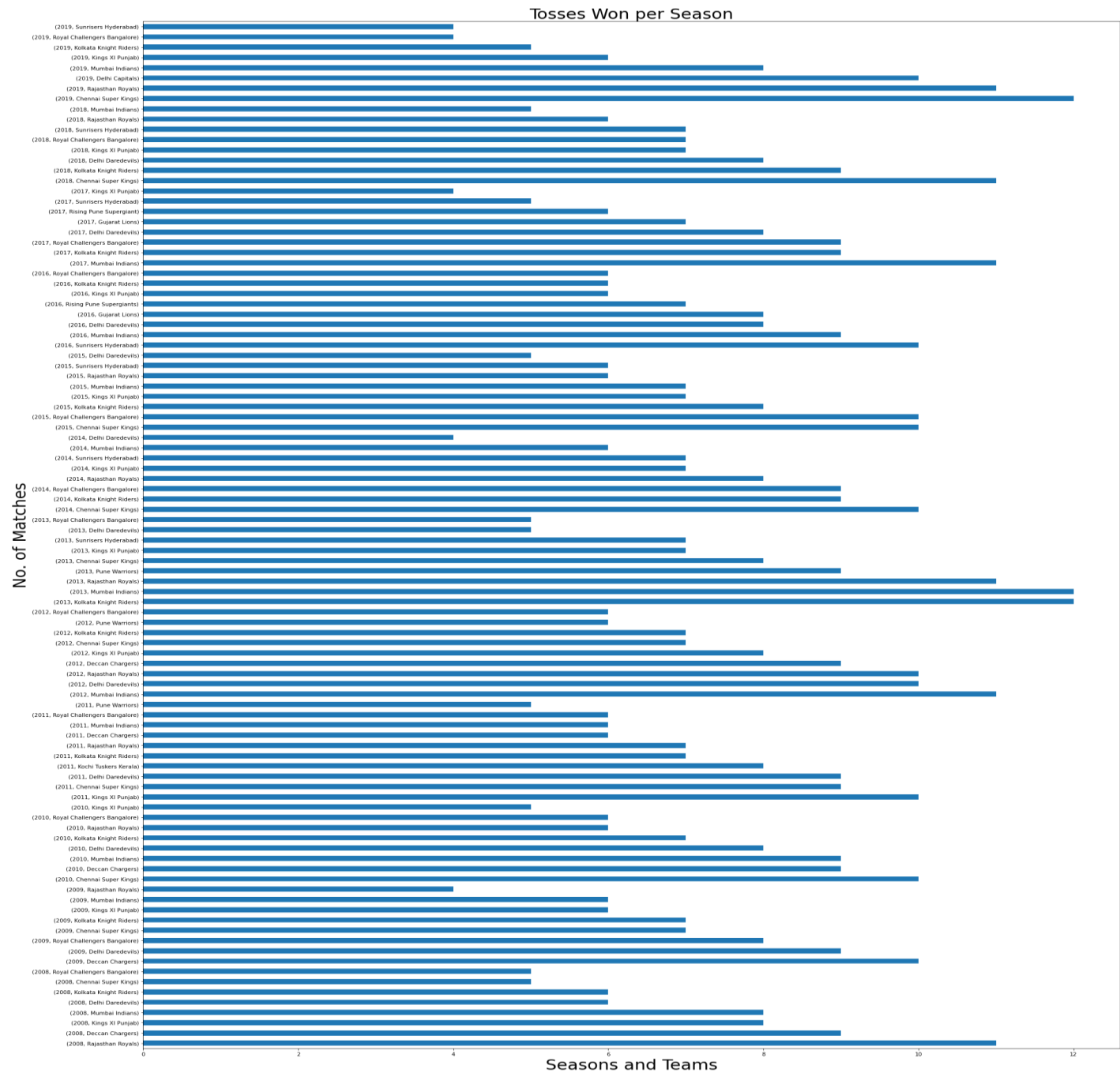
Which team has won the maximum number of tosses [season wise]

```
[49] toss_season=df_match.groupby('season').toss_winner.value_counts()  
     toss_season
```

```
season  toss_winner  
2008    Rajasthan Royals      11  
        Deccan Chargers       9  
        Kings XI Punjab       8  
        Mumbai Indians        8  
        Delhi Daredevils       6  
        ..  
2019    Mumbai Indians       8  
        Kings XI Punjab       6  
        Kolkata Knight Riders  5  
        Royal Challengers Bangalore  4  
        Sunrisers Hyderabad   4  
Name: toss_winner, Length: 100, dtype: int64
```

Kolkata and Mumbai in 2013 and Chennai in 2019 have won the most no. of tosses in a season - 12.

Except 2012, 2015 and 2019, the IPL winning teams have been amongst the top two in terms of toss win percentage. In 2012 and 2015, Kolkata Knight Riders and Mumbai Indians were 6th best (won 7) in winning tosses while in 2019 Mumbai were 4th best (won 8).



### Toss data

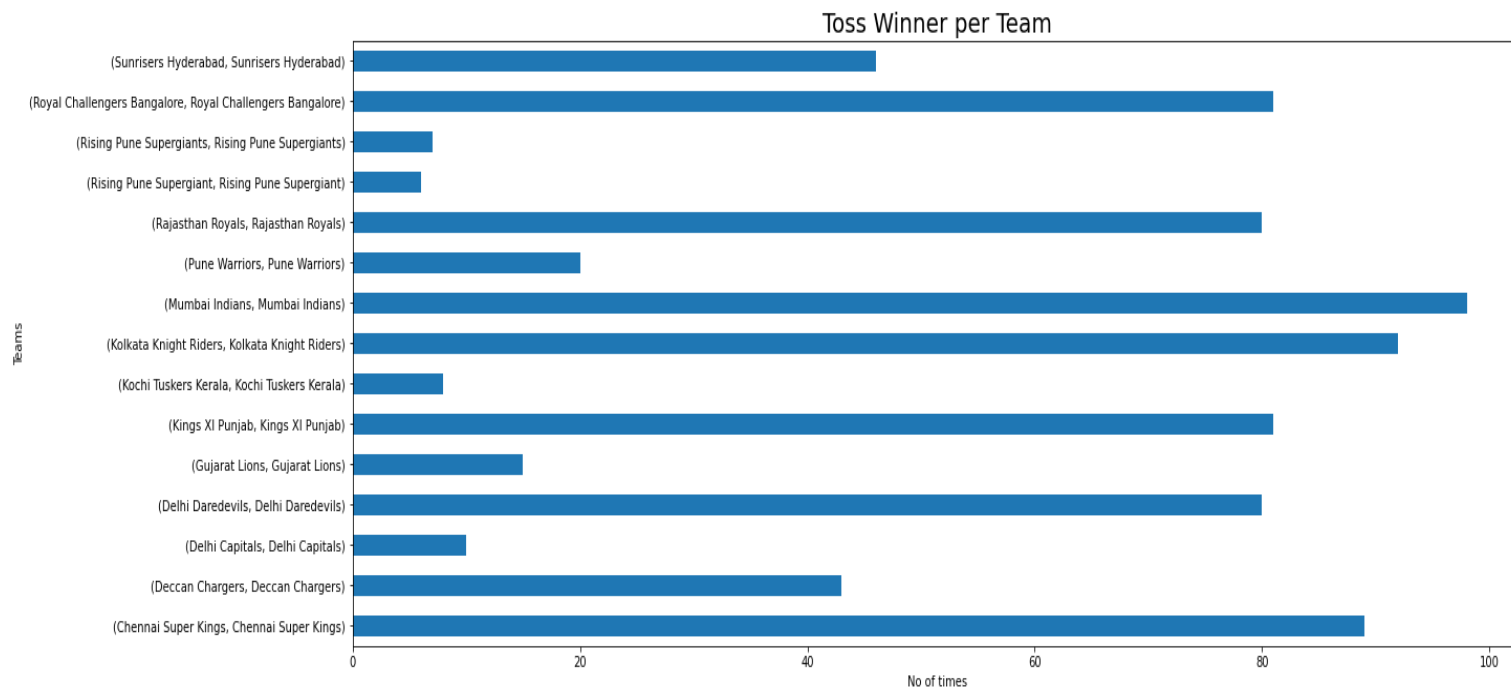
```
matches_per_season = df_match.groupby('season').id.count()
```

```
toss_decision_per = df_match.groupby('season').toss_decision.value_counts().sort_index() / matches_per_season * 100  
toss_decision_per.index  
toss_decision_per.unstack()
```

toss_decision	bat	field
season		
2008	44.827586	55.172414
2009	61.403509	38.596491
2010	65.000000	35.000000
2011	34.246575	65.753425
2012	50.000000	50.000000
2013	59.210526	40.789474
2014	31.666667	68.333333
2015	42.372881	57.627119
2016	18.333333	81.666667
2017	18.644068	81.355932
2018	16.666667	83.333333
2019	16.666667	83.333333

- For 2008-2013, teams seem to have been favoring both batting first and second. However, since 2014, teams have overwhelmingly chosen to bat second. Especially since 2016, teams have chosen to field for more than 80% of the times, the percentage of times batting first was chosen is more in seasons 2009, 2010 and 2013.
- With the use of data analysis and an increasing trend in ODIs to bat second as there is a fixed target to achieve, teams chose more and more to bat first.
- This made the batsmen tasks easier as they could now have a clear thought of how to scale the target put in front of them.





toss winner per team

```
toss=df_match.groupby('toss_winner').toss_winner.value_counts()
toss|
```

```
toss_winner      toss_winner      toss_winner
Chennai Super Kings      Chennai Super Kings      89
Deccan Chargers      Deccan Chargers      43
Delhi Capitals      Delhi Capitals      10
Delhi Daredevils      Delhi Daredevils      80
Gujarat Lions      Gujarat Lions      15
Kings XI Punjab      Kings XI Punjab      81
Kochi Tuskers Kerala      Kochi Tuskers Kerala      8
Kolkata Knight Riders      Kolkata Knight Riders      92
Mumbai Indians      Mumbai Indians      98
Pune Warriors      Pune Warriors      20
Rajasthan Royals      Rajasthan Royals      80
Rising Pune Supergiant      Rising Pune Supergiant      6
Rising Pune Supergiants      Rising Pune Supergiants      7
Royal Challengers Bangalore      Royal Challengers Bangalore      81
Sunrisers Hyderabad      Sunrisers Hyderabad      46
Name: toss_winner, dtype: int64
```

Mumbai Indians and Kolkata knight rider wins the maximum toss

Mumbai Indian wins 98 tosses and Kolkata knight rider wins 92 toss and then Chennai super king, royal challenger bangalore, Rajasthan Royals and Delhi daredevils.

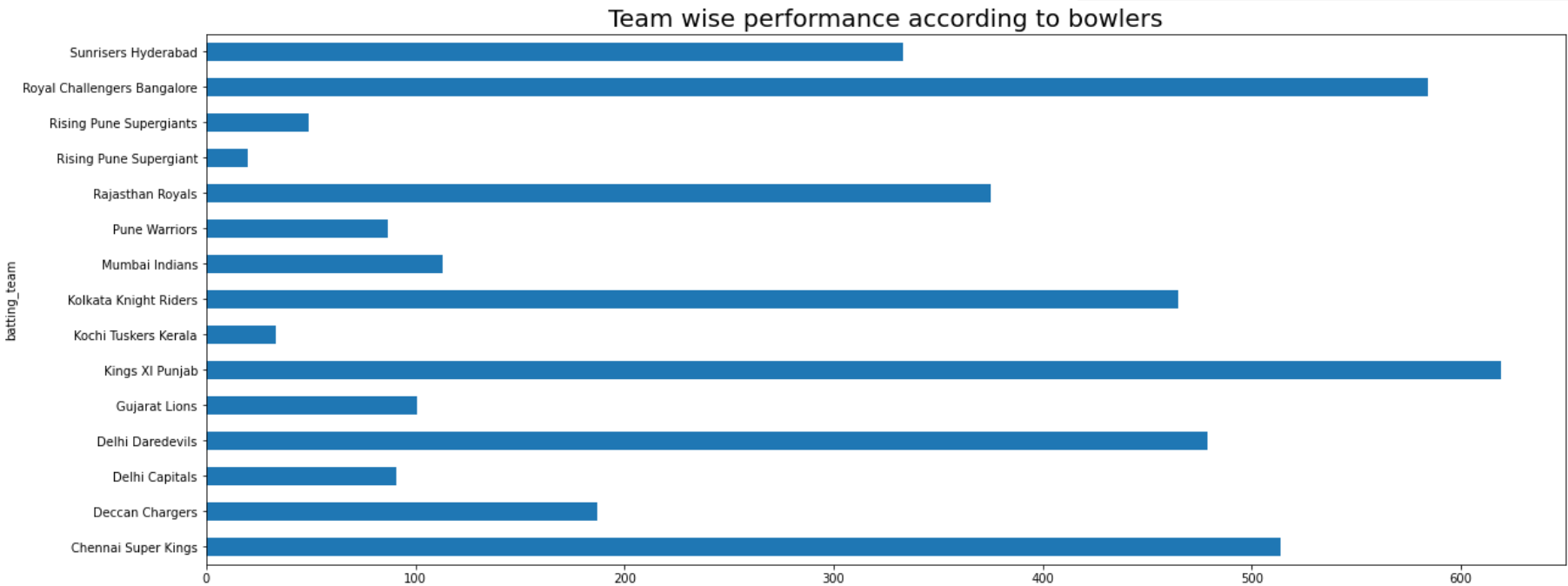
Rising pune Supergiant are the most toss losing team this team only wins at 6 and 7 times out of 98 tosses

The maximum runs given by bowler PP Chawla-(4153) but if we take bowler as Harbhajan Singh then the team which perform well is Kings XI Punjab and then followed by Royal Challenger Bangalore.

Team-wise Performance according to top 10 bolwlers

```
[ ] df_del.groupby('bowler')['total_runs'].agg('sum').reset_index().sort_values('total_runs', ascending=False).head(10)
```

	bowler	total_runs
264	PP Chawla	4153
126	Harbhajan Singh	4050
7	A Mishra	3850
93	DJ Bravo	3733
381	UT Yadav	3640
340	SL Malinga	3511
269	R Ashwin	3391
251	P Kumar	3342
53	B Kumar	3264
282	RA Jadeja	3221



## Number of matches played in each stadium

```
df_match.venue.value_counts().sort_values()
```

```
ACA-VDCA Stadium          2
OUTsurance Oval           2
Vidarbha Cricket Association Stadium, Jamtha  3
De Beers Diamond Oval     3
Buffalo Park              3
Green Park                4
Nehru Stadium             5
Sharjah Cricket Stadium   6
Shaheed Veer Narayan Singh International Stadium  6
Feroz Shah Kotla Ground   7
Barabati Stadium          7
M. Chinnaswamy Stadium     7
St George's Park          7
Sheikh Zayed Stadium       7
JSCA International Stadium Complex  7
IS Bindra Stadium          7
Newlands                  7
Dubai International Cricket Stadium  7
M. A. Chidambaram Stadium  8
New Wanderers Stadium      8
Rajiv Gandhi Intl. Cricket Stadium  8
Holkar Cricket Stadium     9
Himachal Pradesh Cricket Association Stadium  9
Saurashtra Cricket Association Stadium 10
Brabourne Stadium         11
Dr. Y.S. Rajasekhara Reddy ACA-VDCA Cricket Stadium 11
Sardar Patel Stadium, Motera 12
SuperSport Park           12
Punjab Cricket Association IS Bindra Stadium, Mohali 14
Kingsmead                 15
Subrata Roy Sahara Stadium 17
Dr DY Patil Sports Academy 17
Maharashtra Cricket Association Stadium 21
Punjab Cricket Association Stadium, Mohali 35
Sawai Mansingh Stadium     47
MA Chidambaram Stadium, Chepauk 49
Rajiv Gandhi International Stadium, Uppal 56
Feroz Shah Kotla          67
Wankhede Stadium          73
M Chinnaswamy Stadium      73
Eden Gardens              77
Name: venue, dtype: int64
```

- The maximum number of matches are played in Eden Garden and followed by M Chinnaswamy Stadium and Wankhede Stadium.
- The minimum number of matches are played in ACA-VDCA Stadium.
- The average 7 matches are played in these stadium- Feroz Shah Kotla Ground, Barabati Stadium, M. Chinnaswamy Stadium , St George's Park , Sheikh Zayed Stadium, JSCA International Stadium Complex, IS Bindra Stadium , Newlands , Dubai International Cricket Stadium
- The average 8 matches are played in these stadium - M. A. Chidambaram Stadium, New Wanderers Stadium and Rajiv Gandhi Intl. Cricket Stadium.



- ❑ Though teams have overwhelmingly chosen to field first, the win percentage after choosing to bat or field is not that one-sided. However, their difference is on the rise.
- ❑ Chennai and Mumbai are the two teams with the highest win percentage. The fact that they are the only two teams that were part of the first season as well, in the top 5, shows their dominance.
- ❑ Mumbai Indians have played the most no. of matches in the IPL. Due to the brief expansion, change of owners, removal and banning of teams, there have been 15 teams who have played in the IPL.
- ❑ Mumbai Indians have won the IPL 4 times, the most. They are followed by Chennai at 3 and Kolkata Knight Riders at 2. Sunrisers Hyderabad, Deccan Chargers and Rajasthan Royals complete the IPL Champions list, all winning once each.
- ❑ For the first six seasons (2008-2013), teams were figuring out whether batting first or chasing would be better after winning the toss. This could be down to the fact that the IPL and T20 cricket, both were in their early stages where teams were trying different strategies.
- ❑ Since 2014, teams have preferred chasing, especially in the past 4 seasons (2016-2019), where teams have chosen to field more than 4 times out of 5. This can be put down to the fact that having a set total to chase makes things simpler. This can also be a result of teams preferring to chase in ODIs as well.
- ❑ Except 2012, 2015 and 2019, the IPL winning teams have been amongst the top two in terms of toss win percentage every season. In 2012 and 2015, Kolkata Knight Riders and Mumbai Indians were 6th best (won 7) in winning tosses while in 2019 Mumbai were 4th best (won 8).
- ❑ Eden Gardens has hosted the most no. of matches so far. S Ravi has umpired the most no. of matches till now.
- ❑ There have been 80 matches (excluding the ties) where the margin of victory has been 10 runs or less. This is pretty close since 10 runs is basically two boundary shots away.