Tech Saksham

Case Study Report

Data Analytics with Power BI

" IPL DATA ANALYSIS"

"Bishop Ambrose College"

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ABSTRACT

Cricket, especially the Twenty20 format, has maximum uncertainty, where a single over can completely change the momentum of the game. A cricket match depends upon various factors, and in this work, the factors which significantly influence the outcome of a Twenty20 cricket match are identified. Each players performance in the field is considered to find out the overall weight (relative strength) of the team. Finally, a dataset is modeled based on the identified seven factors which influence the outcome of an IPL match. Six machine learning models were trained and used for predicting the outcome of each 2018 IPL match, 15 minutes before the gameplay, immediately after the toss. Three of the trained models were seen to be correctly predicting more than 40 matches, with Multilayer Perceptron outperforming all other models with an impressive accuracy of 71.66%.

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INTRODUCTION

CHAPTER 1

INTRODUCTION

1.1 Motivation

On 13 September 2007, the BCCI announced the launch of a franchise-based Twenty20 cricket competition called Indian Premier League whose first season was slated to start in April 2008The IPL has been designed to entice an entire new generation of sports fans into the grounds throughout the country. The dynamic Twenty20 format has been designed to attract a young fan base, which also includes women and children. Currently, with eight teams, each team plays each other twice in a home-and-away round-robin format in the league phase.

1.2 Net Run Rate

- Net Run Rate (NAR) is a statistical method used in analyzing teamwork and/or performance in cricket it is the most commonly used method of ranking teams with equal points in league.

- Formula of NET RUN RATE Total run scored in the whole tournament/total number of over played by a team total nun scored against the team/total over played against the team.

- Example: this calculation of NRR is performed on a single match

- Mumbai Indians-149/10 (20 Overs)Chennai Super Kings-125/10 (18 Overs) o Mumbai Indians NRR(149/20)-(125/18)-7.45-6.95 +0.5.
  o So, Mi's NRR is +0.5 & CSK's NRR is -0.5.

Note:

The values of Net Run Rate for each team will keep changing after every match till the league stage does not end, in which every team needs to play 14 matches every season and the Net Run of one season does not get carried on the next season as it gets reset after every season.

CHAPTER 2

MARKETING AND BRANDING

2.1 Social Media Marketing o Many IPL franchises have supped their Twitter

game to keep up with their fans thirst for regular updates. It enables the teams to reach out to their admirers and hype them up for the upcoming games

- o Moment marketing is an agile form of promotion with a small shelf life and therefore brands need to be on their toes and think of witty ideas around what is trending on IPL "It is a Twitter first game and that is why mast big multinationals stay away from such campaigns.

- o MS Dhoni lest IPL franchise Chennai Super Kings is the driving force behind the tournament's popularity on social media according to the study. Social

media banter around the IPL shows a distinct spike almost every time the Chennai team takes to the field .

2.2 Business Model o Marketing Benefits for

The IPL Franchise:

- The franchise can use the team as well as the players to promote or advertise some of the other companies that are on the lookout for some promotion in the best way.

- The players of the team or the team itself that is provided to the company will be doing the ad, but they will not be charging the money or from the company as well.
- As per the business model of IPL, every franchise was needed to pay the 10% of total price every which also plays a key role in the revenues of IPL

Flow chart

2.3 Revenue Stream

Central Revenue

- o Tv broadcasting rights. o Sponsorship rights.

Local Revenue o
Ticket Sales.

- o Merchandise.

Sponsors:

- Sponsors generates more amount of money for the league as well as the franchises.

Broadcasters: o

Media rights.

Franchises:

- Franchises are the main source of generating revenue.
- They basically work on two process
- Bids o Franchises rights

CHAPTER 3

BIG DATA IN IPL

3.1 Big data in IPL

- Big data analytics involves examining large amounts of data. This is done so as to uncover the hidden patterns, correlations and also to give insights so as to make proper business decisions.

Areas where BIG DATA can be used in IPL:

- Assessing player strengths and weaknesses.
- Fan engagement and retention.
- To find the most winning team for each season. o Does winning toss increases the chances of victory

3.2 OLAP IN IPL

IPL has vast data of:

- Players o Teams o Sponsors and etc.

Suppose, if Mumbai Indians is making progress among the other teams and we need to extract information about their stats till now against all the other teams. Here, OLAP can help us to make analysis in different dimensions to understand the strong areas of Mumbai Indians. As of we can check whether the batting order is strong or the bowling order and etc.

3.3 Process Flow

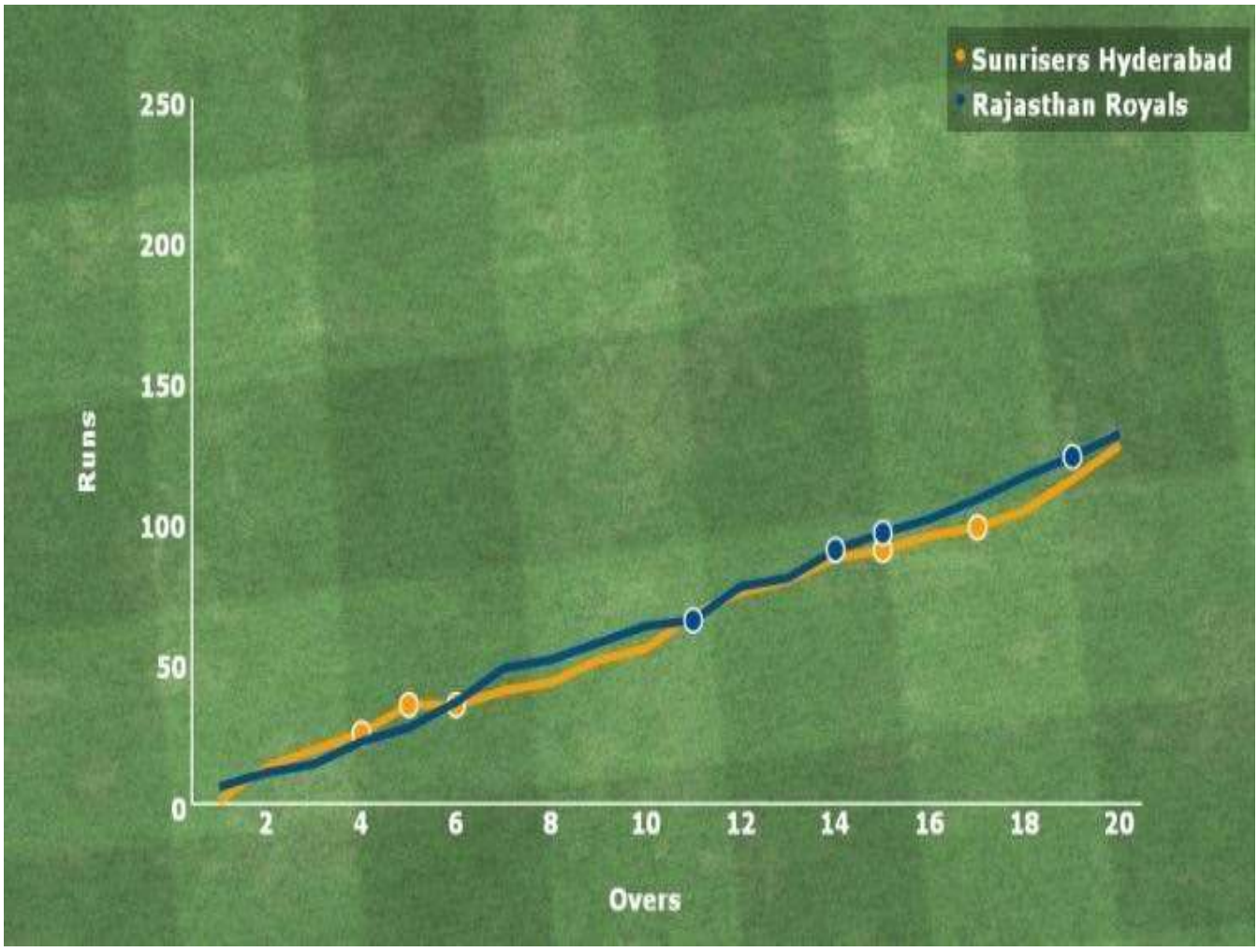

VIVO IPL
ROAD TO THE FINAL
VIVO IPL 2017
PLAYOFFS
1st PLACE
QUALIFIER 1
2nd PLACE
WINNER Q1
FINAL
LOSER Q1
WINNER Q2
QUALIFIER 2
WINNER ELIMINATOR
3rd PLACE
ELIMINATOR
4th PLACE

	Team	M	W	L	NRR	Pts	
1	GT	11	8	3	+0.951	16	✓
2	CSK	12	7	4	+0.493	15	✓
3	RR	12	6	6	+0.633	12	✓
4	MI	11	6	5	-0.255	12	✓
5	LSG	11	5	5	+0.294	11	✗
6	RCB	11	5	6	-0.345	10	✗
7	KKR	12	5	7	-0.357	10	✗
8	PBKS	11	5	6	-0.441	10	✗
9	SRH	10	4	6	-0.472	8	✓
10	DC	11	4	7	-0.605	8	✗

CHAPTER 4

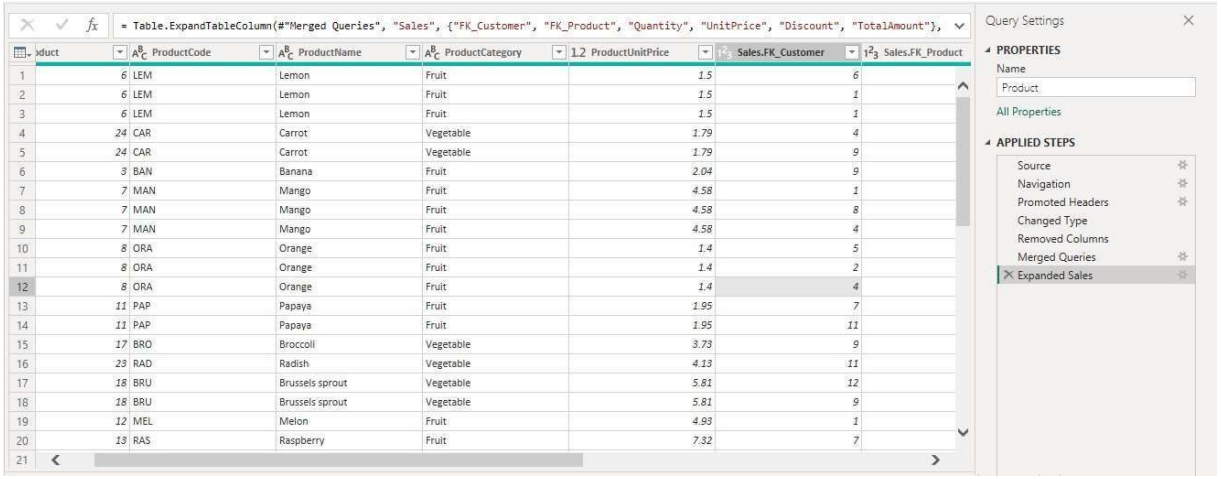
DATA VISUALIZATION

4.1 Commonly used graphical in ipl o Worm graph



- Bar graph

o Partnership graph



= Table.ExpandTableColumn(#"Merged Queries", "Sales", {"FK_Customer", "FK_Product", "Quantity", "UnitPrice", "Discount", "TotalAmount"},

	oduct	ProductCode	ProductName	ProductCategory	ProductUnitPrice	Sales.FK_Customer	Sales.FK_Product
1	6	LEM	Lemon	Fruit	1.5	6	
2	6	LEM	Lemon	Fruit	1.5	1	
3	6	LEM	Lemon	Fruit	1.5	1	
4	24	CAR	Carrot	Vegetable	1.79	4	
5	24	CAR	Carrot	Vegetable	1.79	9	
6	3	BAN	Banana	Fruit	2.04	9	
7	7	MAN	Mango	Fruit	4.58	1	
8	7	MAN	Mango	Fruit	4.58	8	
9	7	MAN	Mango	Fruit	4.58	4	
10	8	ORA	Orange	Fruit	1.4	5	
11	8	ORA	Orange	Fruit	1.4	2	
12	8	ORA	Orange	Fruit	1.4	4	
13	11	PAP	Papaya	Fruit	1.95	7	
14	11	PAP	Papaya	Fruit	1.95	11	
15	17	BRO	Broccoli	Vegetable	3.73	9	
16	23	RAD	Radish	Vegetable	4.13	11	
17	18	BRU	Brussels sprout	Vegetable	5.81	12	
18	18	BRU	Brussels sprout	Vegetable	5.81	9	
19	12	MEL	Melon	Fruit	4.93	1	
20	13	RAS	Raspberry	Fruit	7.32	7	
21							

Query Settings

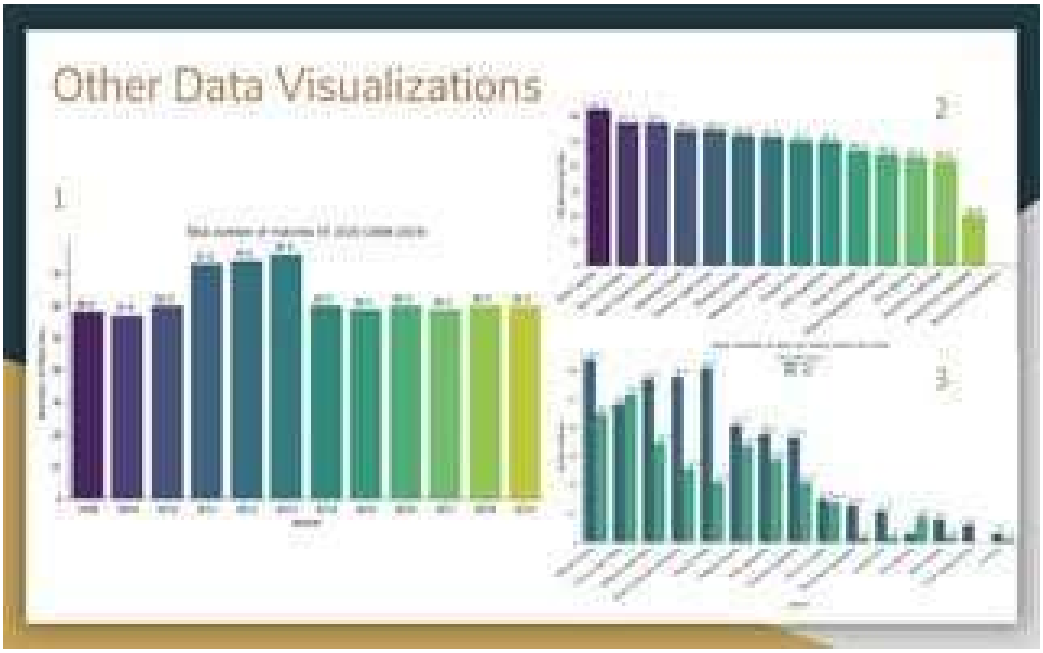
PROPERTIES

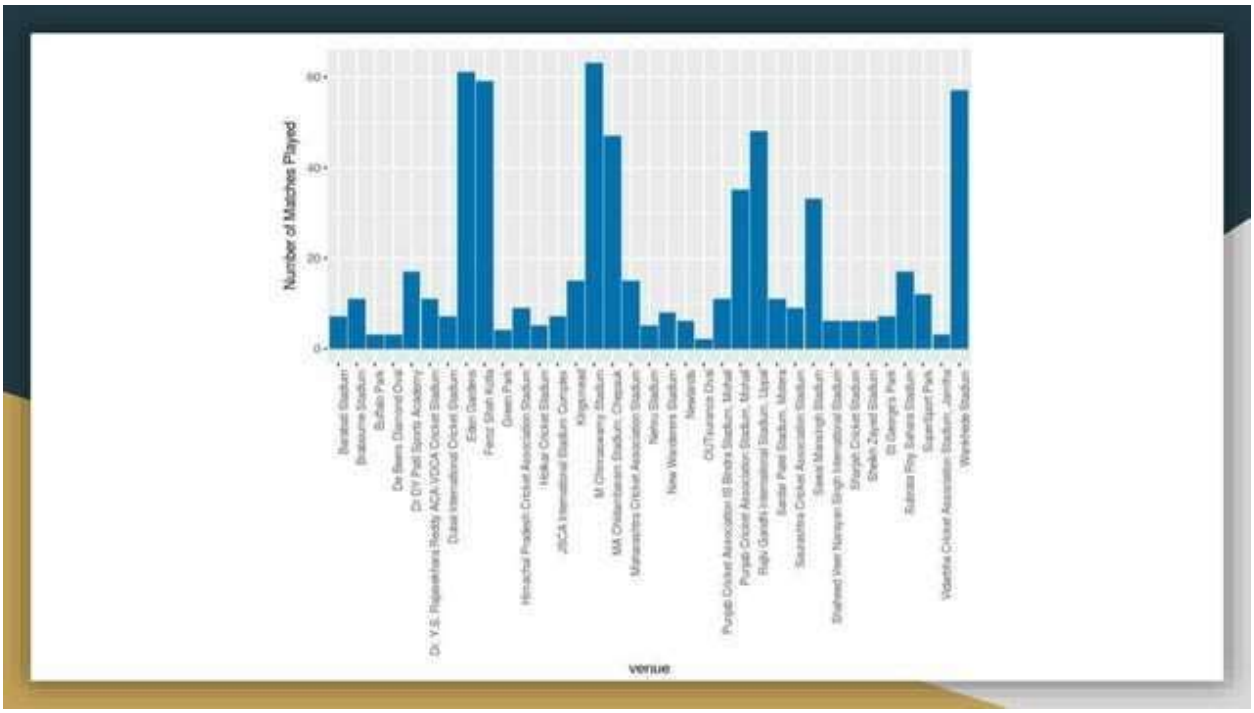
Name: Product

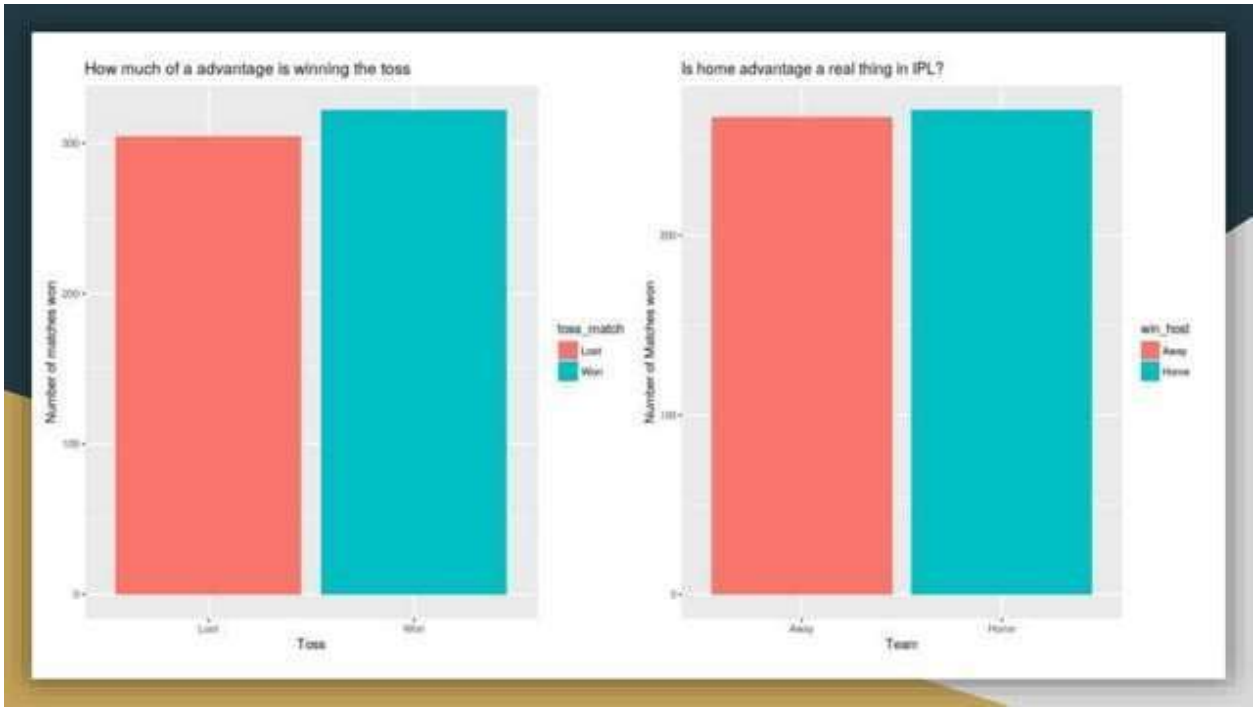
All Properties

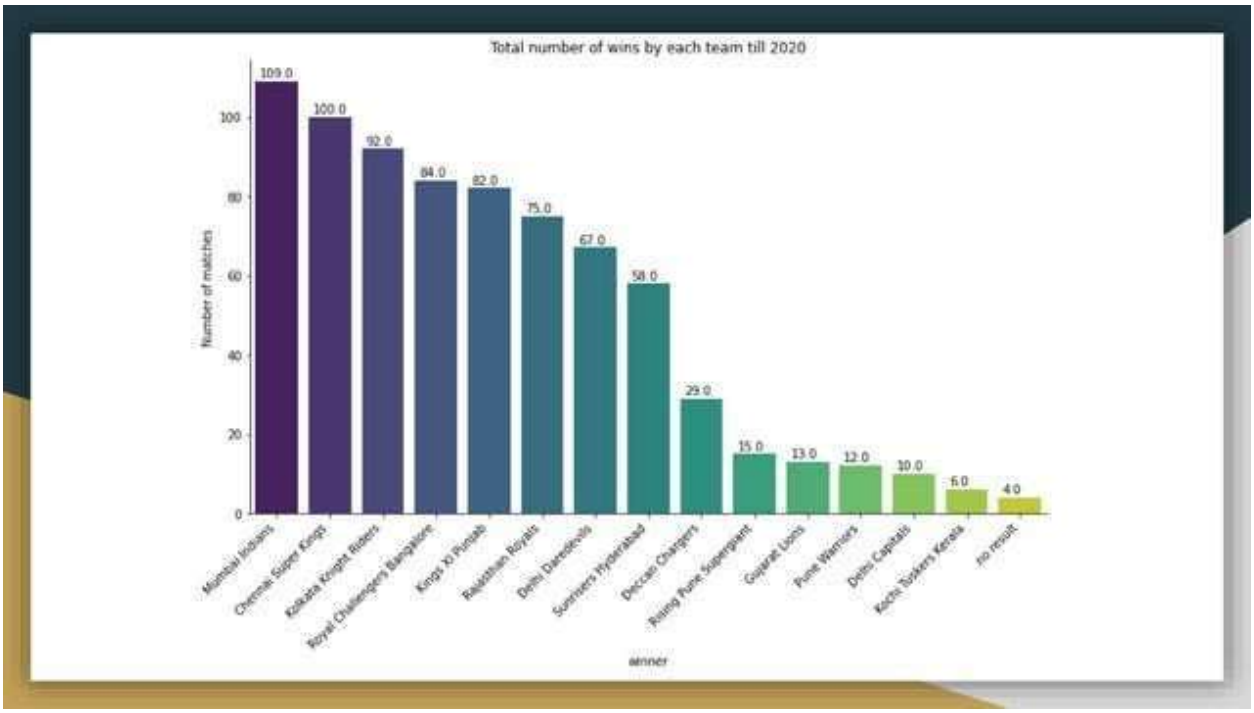
APPLIED STEPS

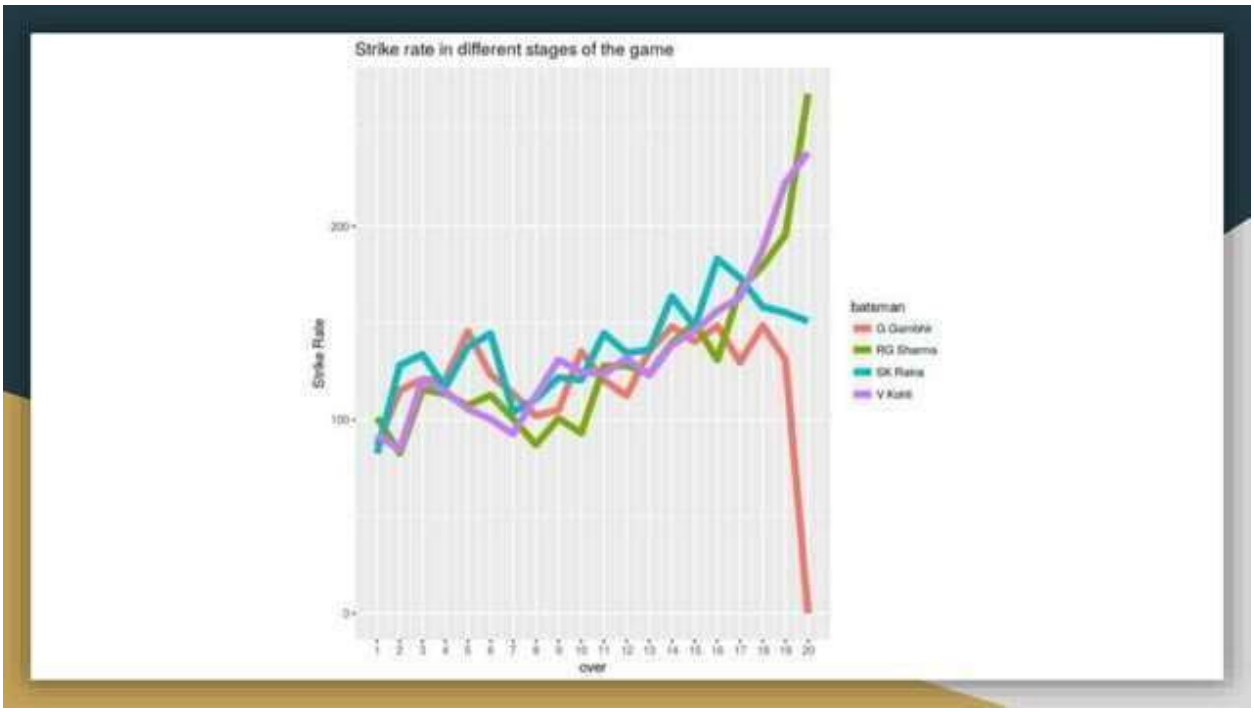
- Source
- Navigation
- Promoted Headers
- Changed Type
- Removed Columns
- Merged Queries
- Expanded Sales

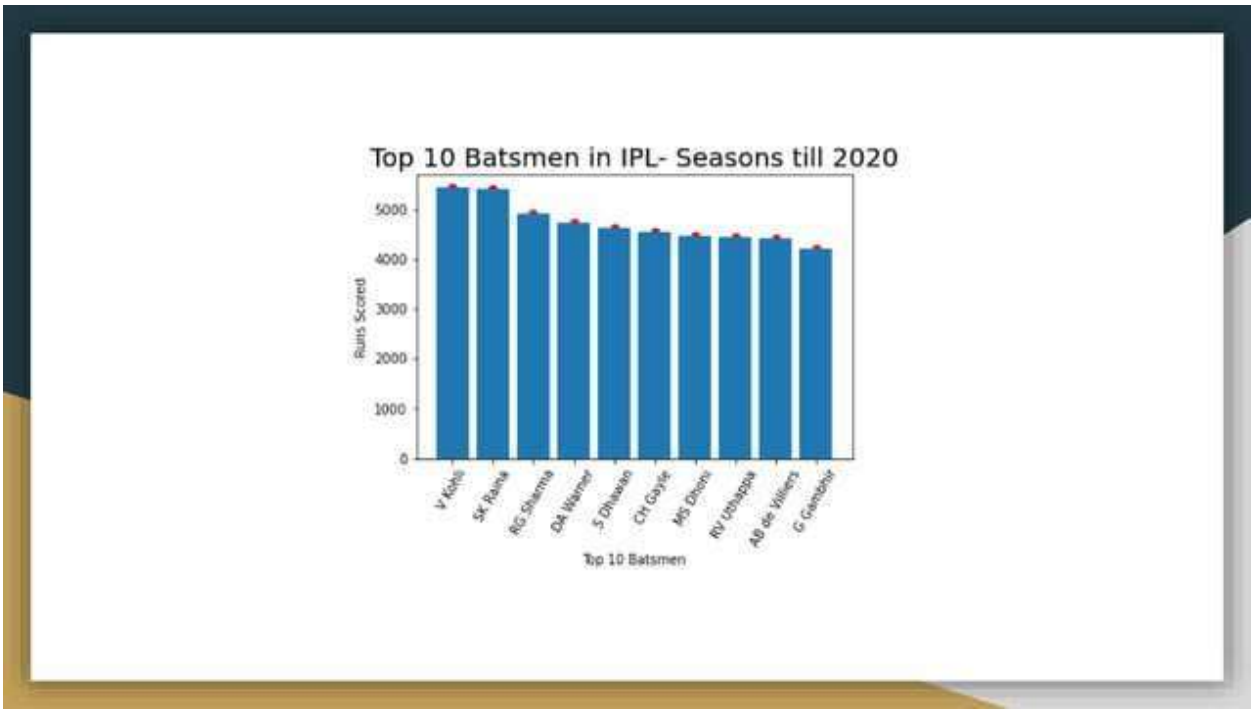


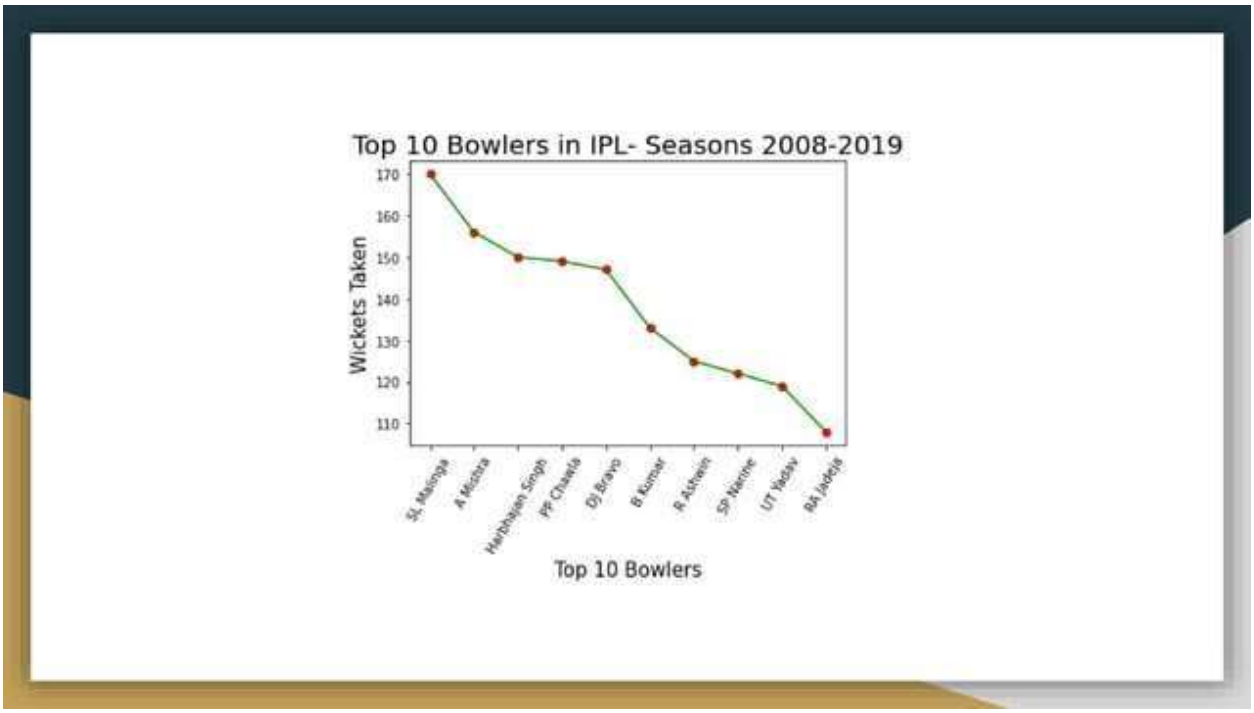

Number of Matches Played
60
40
20
0
venue


How much of a advantage is winning the toss
Number of matches won
300
200
100
0
Lost
Won
Toss
toss_match
Lost
Won
Is home advantage a real thing in IPL?
Number of Matches won
Away
Home
Team
win_host
Away
Home


Total number of wins by each team till 2020
Number of matches
109.0
100.0
92.0
84.0
82.0
75.0
67.0
58.0
29.0
15.0
13.0
12.0
10.0
6.0
4.0
Mumbai Indians
Chennai Super Kings
Kolkata Knight Riders
Royal Challengers Bangalore
Kings XI Punjab
Rajasthan Royals
Delhi Daredevils
Sunrisers Hyderabad
Deccan Chargers
Rising Pune Supergiant
Gujarat Lions
Pune Warriors
Delhi Capitals
Kochi Tuskers Kerala
no result
winner


Strike rate in different stages of the game
Strike Rate
over
batsman
G Gambhir
RG Sharma
SK Raina
V Kohli


Top 10 Batsmen in IPL- Seasons till 2020
Runs Scored
5000
4000
3000
2000
1000
0
V Kohli
SK Raina
RG Sharma
DA Warner
S Dhawan
CH Gayle
MS Dhoni
RV Uthappa
AB de Villiers
G Gambhir
Top 10 Batsmen


Top 10 Bowlers in IPL- Seasons 2008-2019
Wickets Taken
170
160
150
140
130
120
110
SL Malinga
A Mishra
Harbhajan Singh
PP Chawla
DJ Bravo
B Kumar
R Ashwin
SP Narine
UT Yadav
RA Jadeja
Top 10 Bowlers

CONCLUSION

In today's sports world with the aid of analysis, we can determine the player's strengths and weaknesses which will in turn help to improve both individual player performance and team performance. This will aid in optimum decision-making. Working on player and team performance and predicting future performance is beneficial for all types of games. Other T20 leagues around the world, like the PSL, LPL, CPL, BBL, T20 Blast, BPL, and World League CLT20, benefit from the following methodology. Data Analytics have thus taken sports analytics to greater heights and thus selection of players in the teams and selection teams have become easy and accurate. Analyzing performance of individual players and teams over time have made accurate predictions over time possible.

FUTURE SCOPE

In today's data-driven world, data visualization is an essential tool, and the sports industry is no different. Man- agreement would need a lot of time to sift through all the data and understand the content when using raw data in tabular format, which prevents them from getting clear insights. In order for management to understand analytics given visually through graphs and plots or to discover new insights, the data must be presented in a graphical way. It is essential to comprehend the technicalities in order to fully utilize the sports industry's data analytics potential in order to get the highest player performance and increased likelihood of winning.