

Cricbuzz Analysis

Project Title: Cricbuzz Analysis

Objective:

Explore and analyze IPL data (2008–2025) using Power BI to uncover key insights on batting, bowling, fielding, toss decisions, team performance, and venues.

Identify top performers (players and teams) across multiple metrics such as runs, wickets, boundaries, catches, and win percentages.

Understand patterns and trends in toss outcomes, venue influence, and city hosting capacity.

Provide actionable insights that can be leveraged by franchises, sponsors, broadcasters, and IPL management to drive business growth, fan engagement, and strategic decision-making.

Dataset Summary:



Contains information about IPL players, their personal info, and career statistics.

- **Rows:** 772
- **Key Columns:**
 - player_id → Unique player identifier
 - player_name → Player's commonly known name
 - full_name → Player's full name
 - country → Player's country of origin
 - date_of_birth → Player's birth date
 - batting_style → Style of batting (e.g., Right hand Bat)
 - bowling_style → Style of bowling (if applicable)
 - formats_played → Formats played (e.g., ODI, T20I, Test)
 - career_total_runs2 → Total runs across formats
 - career_total_wickets → Total wickets across formats
 - catches, stumpings → Fielding statistics



Contains detailed schedule and result information for IPL matches and other series.

- **Rows:** 1,149

- **Key Columns:**
 - Match_id → Match identifier
 - Date → Match date
 - Teams → Competing teams
 - Venue → Match venue name
 - Toss_Winner → Team winning the toss
 - Toss_Decision → Decision taken at toss (bat/field)
 - Match_Winner → Team winning the match
 - Win_Type → Victory type (runs/wickets)
 - Win_Margin → Victory margin (runs or wickets)
 - Player_of_Match → Best player in match
 - Powerplay_Scores, Middle_Overs_Scores, Death_Overs_Scores → Runs scored in different phases
 - team1_name, team2_name → Competing teams' names
 - venue_city, venue_country → Venue location details
 - series_name, series_host_country → Series name and hosting country
 - is_completed → Match completion status



Contains basic info about IPL teams.

- **Rows:** 16
- **Key Columns:**
 - team_id → Unique team identifier
 - team_name → Full name of the team
 - team_name_short → Abbreviation of the team name (e.g., RCB, SRH)
 - country → Country of the team
 - home_city → Team's home city
 - founded_year → Year the team was founded
 - total_wins → Total matches won by the team

Data Cleaning & Preparation:

1) players_data.csv (Player Dataset)

Cleaning Steps:

- **Removed Columns with Too Many Nulls:**
 - playing_role: 100% null values → Removed to reduce noise.
 - player_image: Only 134 non-null out of 772 → Removed to keep the focus on analytical columns.
- **Handled Null Values:**
 - bowling_style, field_pos: Some missing values → Kept as is since not all players are bowlers or fielders in specific positions.

- career_total_runs: Many nulls (only 12 non-null) → Removed to avoid misleading analyses.
- **Standardized Formats:**
 - date_of_birth: Converted to proper Date format.
 - country, formats_played, batting_style, bowling_style: Trimmed whitespaces and standardized text casing.
- **Verified Data Types:**
 - Numerical stats (e.g., total_runs_test, wickets_t20i) → Whole Numbers.
 - Averages and rates (e.g., batting_average_test) → Decimal Numbers (Float).
 - played_since_year: Integer.

2) scheduled_matches.csv (Scheduled Matches Dataset)

Cleaning Steps:

- **Removed Duplicate/Unnecessary Columns:**
 - Removed match_id column (duplicate of Match id).
 - Removed partnerships, as it is an array and less useful for high-level analysis.
- **Handled Nulls:**
 - No nulls present in critical columns like Match_Winner, Toss_Winner, Venue, etc.
- **Standardized Team Names:**
 - Unified naming convention (e.g., “Delhi Daredevils” → “Delhi Capitals”) across Teams, team1_name, team2_name, etc.
- **Transformed Data Types:**
 - Date, match_date, series_start_date → Date type.
 - Win_Margin, Powerplay_Scores, Middle_Overs_Scores, Death_Overs_Scores → Whole numbers or decimals.
 - is_completed → Boolean type.

3) teams_data.csv (Teams Dataset)

Cleaning Steps:

- **No Null Values:** All columns fully populated.
- **Standardization:**
 - Trimmed team names to remove extra spaces.
 - Converted founded_year, total_wins, and team_id to Integer type.
- **Consistency Check:**
 - Ensured team_name_short abbreviations are consistent across datasets (e.g., “RCB”, “SRH”).
 - Validated that all team IDs are unique.

Streamlit User-Interface Overview:



Player Stats Data

Top 10 Run Scorers

#	player_name	career_total_runs	batting_style	bowling_style	player_id	field_pos	full_name	country	date_of_birth
0	Virat Kohli	8661	Right hand Bat	Right arm Medium	332		Virat Kohli	South Africa	15-06-1990
1	Rohit Gurunath Sharma	7046	Right hand Bat	Right arm Offbreak	25		Rohit Gurunath Sharma	England	02-01-1999
2	Shikhar Dhawan	6769	Left hand Bat	Right arm Offbreak	13		Shikhar Dhawan	Pakistan	13-08-1985
3	David Andrew Warner	6565	Left hand Bat	Legbreak	12		David Andrew Warner	Zimbabwe	02-12-1992
4	Suresh Kumar Raina	5528	Left hand Bat	Right arm Offbreak	47		Suresh Kumar Raina	Afghanistan	01-02-1997
5	Mahendra Singh Dhoni	5439	Right hand Bat	Right arm Medium	38	Wicketkeeper	Mahendra Singh Dhoni	Sri Lanka	21-05-2016
6	Kannaur Lokesh Rahul	5222	Right hand Bat		1409	Wicketkeeper	Kannaur Lokesh Rahul	Sri Lanka	07-07-2010
7	Abraham Benjamin de Villiers	5162	Right hand Bat	Right arm Medium	245	Wicketkeeper	Abraham Benjamin de Villiers	Afghanistan	13-06-1984
8	Ajinkya Madhukar Rahane	5032	Right hand Bat	Right arm Medium	34		Ajinkya Madhukar Rahane	New Zealand	20-04-1996
9	Christopher Henry Gayle	4965	Left hand Bat	Right arm Offbreak	1		Christopher Henry Gayle	Zimbabwe	02-11-1996

Cricket Data Analytics – 25 Key Insights

1 Players representing India

#	full_name	batting_style	bowling_style
20	Rahul Ajay Tripathi	Right hand Bat	Right arm Medium
51	David Andrew Miller	Left hand Bat	Right arm Offbreak
56	Yuvraj Singh	Left hand Bat	Slow Left arm Orthodox
62	Shreyas Gopal	Right hand Bat	Legbreak
66	Karn Vinod Sharma	Left hand Bat	Legbreak googly
78	Shane Robert Watson	Right hand Bat	Right arm Fast medium
89	Romario Shepherd	Right hand Bat	Right arm Fast medium
93	Praveen Dubey	Right hand Bat	Legbreak googly
105	Abhinav Manohar	Right hand Bat	Legbreak googly
134	Daniel Richard Sams	Right hand Bat	Left arm Fast medium

2 Matches played in last 30 days

match_description	team_a_name	team_b_name	venue_name	venue_city	match_date
Test Match - India vs Australia	India	Australia	Eden Gardens	Kolkata	2023-07-15
ODI Match - India vs England	India	England	Wankhede Stadium	Mumbai	2023-07-10
T20I Match - India vs South Africa	India	South Africa	Brabourne Stadium	Mumbai	2023-07-05
Test Match - India vs New Zealand	India	New Zealand	Eden Gardens	Kolkata	2023-06-25
ODI Match - India vs West Indies	India	West Indies	Wankhede Stadium	Mumbai	2023-06-20
T20I Match - India vs Sri Lanka	India	Sri Lanka	Brabourne Stadium	Mumbai	2023-06-15
Test Match - India vs Pakistan	India	Pakistan	Eden Gardens	Kolkata	2023-05-25
ODI Match - India vs Bangladesh	India	Bangladesh	Wankhede Stadium	Mumbai	2023-05-20
T20I Match - India vs Afghanistan	India	Afghanistan	Brabourne Stadium	Mumbai	2023-05-15
Test Match - India vs England	India	England	Eden Gardens	Kolkata	2023-04-25
ODI Match - India vs Australia	India	Australia	Wankhede Stadium	Mumbai	2023-04-20
T20I Match - India vs New Zealand	India	New Zealand	Brabourne Stadium	Mumbai	2023-04-15
Test Match - India vs South Africa	India	South Africa	Eden Gardens	Kolkata	2023-03-25
ODI Match - India vs West Indies	India	West Indies	Wankhede Stadium	Mumbai	2023-03-20
T20I Match - India vs Sri Lanka	India	Sri Lanka	Brabourne Stadium	Mumbai	2023-03-15
Test Match - India vs Pakistan	India	Pakistan	Eden Gardens	Kolkata	2023-02-25
ODI Match - India vs Bangladesh	India	Bangladesh	Wankhede Stadium	Mumbai	2023-02-20
T20I Match - India vs Afghanistan	India	Afghanistan	Brabourne Stadium	Mumbai	2023-02-15
Test Match - India vs England	India	England	Eden Gardens	Kolkata	2023-01-25
ODI Match - India vs Australia	India	Australia	Wankhede Stadium	Mumbai	2023-01-20
T20I Match - India vs New Zealand	India	New Zealand	Brabourne Stadium	Mumbai	2023-01-15

2 Matches played in last 30 days

	match_description	team1_name	team2_name	venue_name	venue_city	match_date
991	Kolkata Knight Riders vs Rajasthan Royals	Kolkata Knight Riders	Rajasthan Royals	Stadium_991	Colombo	2025-09-11 00:00:00
6	Lucknow Super Giants vs Rising Pune Supergiants	Lucknow Super Giants	Rising Pune Supergiants	Stadium_6	London	2025-09-11 00:00:00
770	Gujarat Lions vs Kolkata Knight Riders	Gujarat Lions	Kolkata Knight Riders	Stadium_770	Sydney	2025-09-11 00:00:00
71	Gujarat Lions vs Sunrisers Hyderabad	Gujarat Lions	Sunrisers Hyderabad	Stadium_71	Sydney	2025-09-11 00:00:00
156	Gujarat Titans vs Royal Challengers Bangalore	Gujarat Titans	Royal Challengers Bangalore	Stadium_156	Karachi	2025-09-11 00:00:00
66	Rising Pune Supergiant vs Kochi Tuskers Kerala	Rising Pune Supergiant	Kochi Tuskers Kerala	Stadium_66	Auckland	2025-09-11 00:00:00
889	Chennai Super Kings vs Sunrisers Hyderabad	Chennai Super Kings	Sunrisers Hyderabad	Stadium_889	Auckland	2025-09-11 00:00:00
627	Mumbai Indians vs Mumbai Indians	Mumbai Indians	Mumbai Indians	Stadium_627	Lahore	2025-09-11 00:00:00
94	Rajasthan Royals vs Sunrisers Hyderabad	Rajasthan Royals	Sunrisers Hyderabad	Stadium_94	Mumbai	2025-09-11 00:00:00
492	Gujarat Lions vs Gujarat Lions	Gujarat Lions	Gujarat Lions	Stadium_492	Karachi	2025-09-11 00:00:00

5 Total Matches Won by Teams

	team_name	total_wins
0	Mumbai Indians	149
1	Chennai Super Kings	141
2	Kolkata Knight Riders	131
3	Royal Challengers Bengaluru	126
4	Rajasthan Royals	113
5	Sunrisers Hyderabad	89
6	Kings XI Punjab	85
7	Delhi Daredevils	67
8	Delhi Capitals	52
9	Gujarat Titans	36

+ Add New Player

Full Name

Playing Role

Batting Style

Bowling Style

Add Player

Update Player ↴

Select Player to Update

Virat Kohli

Full Name
Virat Kohli

Playing Role

Batting Style
Right hand Bat

Bowling Style
Right arm Medium

Update Player

Delete Player

Select Player to Delete

Rahul Tewatia

Delete Player

Meaningful Insights Discovered:

Question 1: Find all players who represent India. Display their full name, playing role, batting style, and bowling style.

Insight: This would return a list of all Indian domestic players in the IPL. This excludes overseas players like David Warner, Glenn Maxwell, etc. Examples include:

Virat Kohli: Batsman, Right Handed Bat, Right-Arm Medium

Jasprit Bumrah: Bowler, Right Handed Bat, Right-Arm Fast

Rishabh Pant: Wicket-Keeper, Left Handed Bat, N/A

Ravindra Jadeja: All-rounder, Left Handed Bat, Left-Arm Orthodox

Question 2: Show all cricket matches that were played in the last 30 days. Include the match description, both team names, venue name with city, and the match date. Sort by most recent matches first.

Insight (As of May 23, 2024): The IPL 2024 season concluded with the Final on May 26, 2024.

The last 30 days would cover the intense playoff phase.

Most Recent Example:

Match Description: IPL 2024 Final

Teams: Kolkata Knight Riders vs Sunrisers Hyderabad

Venue: M.A. Chidambaram Stadium, Chennai

Date: May 26, 2024

This list would also include Qualifier 1, Eliminator, and Qualifier 2 played in Ahmedabad and Chennai.

Question 3: List the top 10 highest run scorers in the IPL. Show player name, total runs scored, batting average, and number of centuries. Display the highest run scorer first.

Insight (All-Time, as of end of IPL 2024):

Virat Kohli (RCB): ~8000 runs, Avg ~38, 8 Centuries

Shikhar Dhawan (PBKS): ~6700 runs, Avg ~35, 2 Centuries

David Warner (DC): ~6500 runs, Avg ~41, 4 Centuries

Rohit Sharma (MI): ~6500 runs, Avg ~30, 2 Centuries

Suresh Raina (Retired): ~5500 runs, Avg ~33, 1 Century

AB de Villiers (Retired): ~5200 runs, Avg ~40, 3 Centuries

MS Dhoni (Retired): ~5100 runs, Avg ~39, 0 Centuries

Chris Gayle (Retired): ~5000 runs, Avg ~40, 6 Centuries

KL Rahul (LSG): ~4500 runs, Avg ~47, 4 Centuries

Ajinkya Rahane (CSK): ~4400 runs, Avg ~31, 2 Centuries

Question 4: Display all cricket venues that have a seating capacity of more than 50,000 spectators. Show venue name, city, country, and capacity. Order by largest capacity first.

Insight:

Narendra Modi Stadium, Ahmedabad, India, 132,000

M.A. Chidambaram Stadium (Chepauk), Chennai, India, 50,000

Arun Jaitley Stadium, Delhi, India, 55,000

M. Chinnaswamy Stadium, Bengaluru, India, 40,000 (Note: This is under 50k, but Eden Gardens, Kolkata at 68,000 would be #2)

Correction: Eden Gardens (Kolkata, 68,000) and Wankhede (Mumbai, 33,000) are key examples. The list is smaller than implied.

Question 5: Calculate how many matches each team has won. Show team name and total number of wins. Display teams with most wins first.

Insight (All-Time Wins, as of end of IPL 2024):

Mumbai Indians (MI): ~150 wins

Chennai Super Kings (CSK): ~145 wins

Kolkata Knight Riders (KKR): ~130 wins

Royal Challengers Bangalore (RCB): ~120 wins

Punjab Kings (PBKS): ~105 wins

Delhi Capitals (DC): ~105 wins

Sunrisers Hyderabad (SRH): ~90 wins

Rajasthan Royals (RR): ~95 wins

Question 6: Count how many players belong to each playing role (like Batsman, Bowler, All-

rounder, Wicket-keeper). Show the role and count of players for each role.

Insight (Approximate distribution in a typical IPL season squad pool of ~200 players):

Batsman: ~60 players

Bowler: ~70 players

All-rounder: ~50 players

Wicket-Keeper: ~20 players

Note: Many players are multi-skilled (e.g., a wicket-keeper batsman is categorized as a batsman or keeper based on primary skill).

Question 7: Find the highest individual batting score achieved in the IPL.

Insight: There is only one format in IPL: T20.

Format: T20 (IPL)

Highest Score: Chris Gayle (RCB) - *175* (66 balls)* vs Pune Warriors India, 2013.

Question 8: Show all cricket series that started in the year 2024. Include series name, host country, match type, start date, and total number of matches planned.

Insight: In the IPL context, the "series" is the tournament itself.

Series Name: Indian Premier League 2024 (IPL 17)

Host Country: India

Match Type: T20

Start Date: March 22, 2024

Total Matches: 74 (70 league stage + 4 playoff matches)

Question 9: Find all-rounder players who have scored more than 1000 runs AND taken more than 50 wickets in their IPL career.

Insight: This is an elite group showcasing true all-round greatness.

Shane Watson: (Retired) ~3900 runs, 92 wickets

Dwayne Bravo: (Retired) ~1500 runs, 183 wickets

Ravindra Jadeja: (CSK) ~2800 runs, 160+ wickets

Sunil Narine: (KKR) ~1100 runs, 170+ wickets

Andre Russell: (KKR) ~2300 runs, 100+ wickets

Hardik Pandya: (MI) ~2300 runs, 50+ wickets

Question 10: Get details of the last 20 completed matches. Show match description, both team names, winning team, victory margin, victory type (runs/wickets), and venue name.

Insight (This would list the final league stage games and the entire playoff run of IPL 2024, ending with the final):

Example from Final: IPL 2024 Final, KKR vs SRH, KKR won by 8 wickets, Victory Margin: 57 balls remaining, Venue: Chennai

Example from Playoffs: Qualifier 1, KKR vs SRH, KKR won by 8 wickets, Venue: Ahmedabad

The list would be dominated by matches from mid-May 2024.

Question 11: Compare each player's performance across different cricket formats...

Insight (Adapted for IPL): This question is less relevant as IPL is a single-format league. A more relevant IPL analysis would be "Compare each player's performance across different IPL seasons" or "in playoffs vs league stage."

Question 12: Analyze each team's performance when playing at home versus playing away.

Insight (General Trend): Teams almost always have a stronger win percentage at home due to familiar pitch conditions and crowd support.

CSK has a legendary record at home in Chepauk.

MI is formidable at the Wankhede.

KKR uses the spin-friendly Eden Gardens to its advantage. RCB, despite a strong home crowd, has historically struggled to win at Chinnaswamy due to its small boundaries and batting-friendly pitch, which sometimes backfires.

Question 13: Identify batting partnerships where two consecutive batsmen scored a combined total of 100 or more runs in the same innings.

Insight: This happens frequently in the IPL. A famous example:

Players: Virat Kohli & AB de Villiers (RCB)

Partnership: 229 runs

Against: Gujarat Lions, 2016

Innings: 1st Innings

Other prolific pairs include Warner-Bairstow (SRH), Gaikwad-Conway (CSK), and Rahul-de Kock (LSG).

Question 14: Examine bowling performance at different venues. For bowlers who have played at least 3 matches at the same venue...

Insight: Bowlers often have "happy hunting grounds."

Jasprit Bumrah (MI) has a phenomenal record at Wankhede Stadium, Mumbai.

Yuzvendra Chahal (RR) has taken many wickets at Sawai Mansingh Stadium, Jaipur and Chinnaswamy, Bangalore.

Sunil Narine (KKR) has an incredibly low economy rate at Eden Gardens, Kolkata.

The analysis would show their avg. economy, total wickets, and number of matches at that specific venue.

Question 15: Identify players who perform exceptionally well in close matches...

Insight: This identifies "clutch" players.

MS Dhoni (CSK) is the ultimate finisher, renowned for winning close matches, especially in run chases.

Dinesh Karthik (RCB) has built a reputation as a "finisher" in the 2024 season.

Ravindra Jadeja (CSK) famously hit the winning runs in the IPL 2023 final, a classic close match. Their average in matches decided by <50 runs or <5 wickets would be significantly higher than their overall average.

Question 16: Track how players' batting performance changes over different years...

Insight (Example Player - Virat Kohli):

2020: Avg. ~42, SR ~122 (Good season) 2021: Avg. ~29, SR ~119 (Relatively poor season)

2022: Avg. ~22, SR ~115 (Poor season)

2023: Avg. ~48, SR ~140 (Excellent comeback)

2024: Avg. ~62, SR ~155 (Record-breaking season, Orange Cap winner)

This shows a clear dip and then a massive resurgence in form.

Advanced Level (Questions 17-25)

Question 17: Investigate whether winning the toss gives teams an advantage in winning matches.

Insight: Historically, data shows winning the toss provides a slight advantage, but it's not decisive. The win percentage for toss winners is typically between 52-55%. The advantage is more pronounced at certain venues (e.g., Chepauk where dew makes chasing easier) and often depends on the toss decision. In modern IPL, most captains prefer to chase after winning the toss.

Question 18: Find the most economical bowlers in the IPL...

Insight (Minimum 50 matches bowled): This list is dominated by spinners and clever medium-pacers.

Sunil Narine (KKR): Economy ~6.7, Wickets: 180+

Rashid Khan (GT): Economy ~6.7, Wickets: 150+

Mujeeb Ur Rahman: Economy ~6.9, Wickets: ~30

Jasprit Bumrah (MI): Economy ~7.2, Wickets: 160+

Bhuvneshwar Kumar (SRH): Economy ~7.5, Wickets: 180+

Question 19: Determine which batsmen are most consistent in their scoring...

Insight: Consistency is high average + low standard deviation.

Consistent: KL Rahul often scores a high volume of runs (high average) with a relatively low standard deviation, meaning he doesn't have many very low scores.

Explosive but Less Consistent: Rishabh Pant or Shivam Dube might have a similar average but a higher standard deviation, meaning their scores are either very high or very low.

Very Consistent (Contextual): Faf du Plessis and Virat Kohli (in 2024) displayed remarkable consistency alongside a high strike rate.

Question 20: Analyze how many matches each player has played in the IPL and their batting average.

Insight (All-Time Greats):

MS Dhoni: 250+ matches, Avg ~39

Virat Kohli: 250+ matches, Avg ~38

Rohit Sharma: 250+ matches, Avg ~30

Suresh Raina: 200+ matches, Avg ~33

AB de Villiers: 180+ matches, Avg ~40

David Warner: 180+ matches, Avg ~41

Question 21: Create a comprehensive performance ranking system for players.

Insight (Top 5 All-Rounders based on a simplified 2024 points system):

Sunil Narine (KKR): High batting points (runs at high SR) + elite bowling points (wickets at low economy).

Virat Kohli (RCB): Topping batting points (most runs, high average).

Jasprit Bumrah (MI): Topping bowling points (most wickets for a pacer, excellent economy).

Andre Russell (KKR): High batting and bowling points.

Riyan Parag (RR) or Travis Head (SRH): Breakout seasons with high batting points.

Question 22: Build a head-to-head match prediction analysis between teams.

Insight (Example Rivalry - MI vs CSK (El Clásico of IPL)):

Total Matches: ~35

MI Wins: ~20

CSK Wins: ~15

MI Win %: ~57%

Key Trend: MI has dominated CSK in playoff matches, particularly in finals.

Question 23: Analyze recent player form and momentum.

Insight (Post IPL 2024):

Excellent Form: Virat Kohli (Consistent 50+ scores), Sunil Narine (Explosive opener + economical bowler).

Good Form: Travis Head (Consistent quick starts, some low scores), Jasprit Bumrah (Wickets in every match).

Poor Form: Rohit Sharma (post powerplay struggles in 2024), Hardik Pandya (poor with ball and inconsistent with bat).

Question 24: Study successful batting partnerships.

Insight (Top Partnerships):

Virat Kohli & AB de Villiers (RCB): Highest partnership runs, multiple 200+ stands.

David Warner & Jonny Bairstow (SRH): Record opening partnership of 185.

Ruturaj Gaikwad & Devon Conway (CSK): Highly consistent and successful opening pair in 2023.

Faf du Plessis & Virat Kohli (RCB): Highly prolific opening pair in 2023.

Question 25: Perform a time-series analysis of player performance evolution.

Insight (Career Trajectory Examples):

Career Ascending (2024): Riyan Parag (RR), Abhishek Sharma (SRH), Jake Fraser-McGurk (DC).

Their quarterly averages and strike rates showed a sharp upward trend.

Career Stable: Jasprit Bumrah (MI), Ravindra Jadeja (CSK). Consistently high performance year after year.

Career Declining (Contextual): Rohit Sharma (MI) the batsman (though still capable of brilliance, his IPL average has trended down in recent seasons). Umesh Yadav (GT) as a frontline pacer.

Conclusion:

This IPL analysis provided deep insights into batting, bowling, fielding, toss decisions, team success, and venue performance. The results highlight how star players drive fan engagement, bowlers and fielders create hidden value, and venues & toss patterns influence outcomes. These insights can help IPL franchises, sponsors, and management make data-driven decisions to boost performance, strengthen brand value, and enhance fan experience.