Cricket Analytics using SQL

Uncovering Insights from IPL Data for Royal Challengers Bangalore

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Every match tells a story. Every number hides a clue. Let's decode what the data reveals about one of IPL's most unpredictable teams — RCB.

The Beginning: Why This Project?

➜ The IPL is a data treasure.

➜ This project analyzes match stats, player performance, and team strategies using SQL

➜ To uncover the key patterns behind RCB's wins and losses.

RCB — a team with legends, firepower, and passion. Yet the trophy cabinet stays empty. Why? Maybe, the answers lie in the data.

Objectives & Problem Statement

Problem Statement:

You've been hired as a sports data analyst by RCB to identify top-performing and cost-effective players for the 2017 mega auction. Your task is to develop data-driven strategies and suggestions to help the team build a winning squad.

Objectives:

Decode team & player patterns across seasons.

Identify KPIs that influence wins and losses.

Study how age, venue, and playing style impact outcomes.

Recommend a data-backed strategy for future success.

Knowing the Data
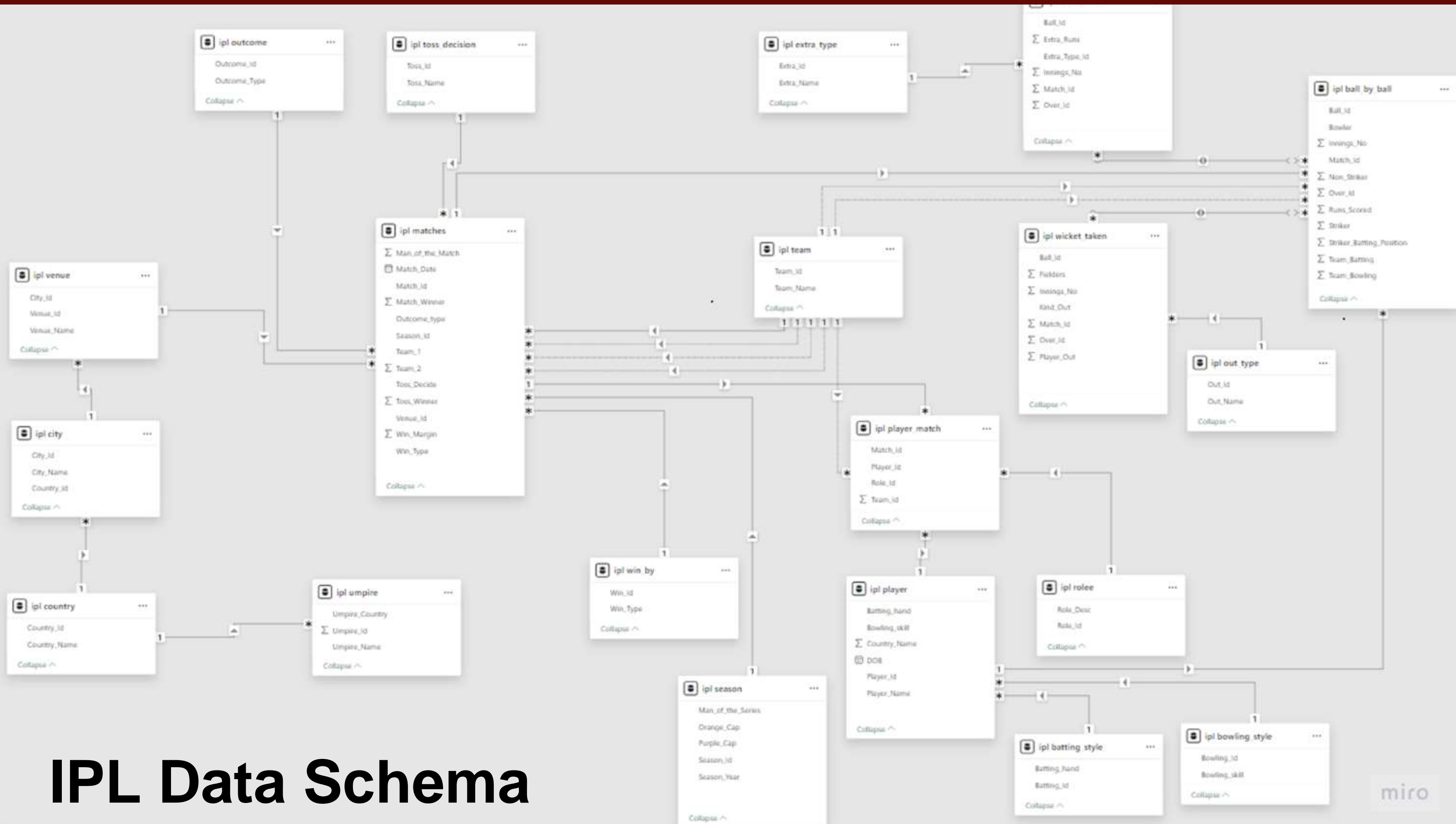
Dataset Summary:

Tables Used: 20

Size: 50,000+ records across multiple seasons

Data Scope: Batting, bowling, match outcomes, player demographics

Importance:

Enables end-to-end match analytics — from every ball to every player.

Every great story starts with understanding its characters. For us, that's the data.

IPL Data Schema

The Game Plan (Methodology)

Steps Taken:

- Cleaned and validated data (team names, nulls).
- Linked tables using joins and CTEs for structured queries.
- Analyzed performance trends, player metrics, and venue outcomes.
- Created new KPIs to evaluate team strategy.

Tools:

- SQL for analysis
- Excel / Power BI for visualization

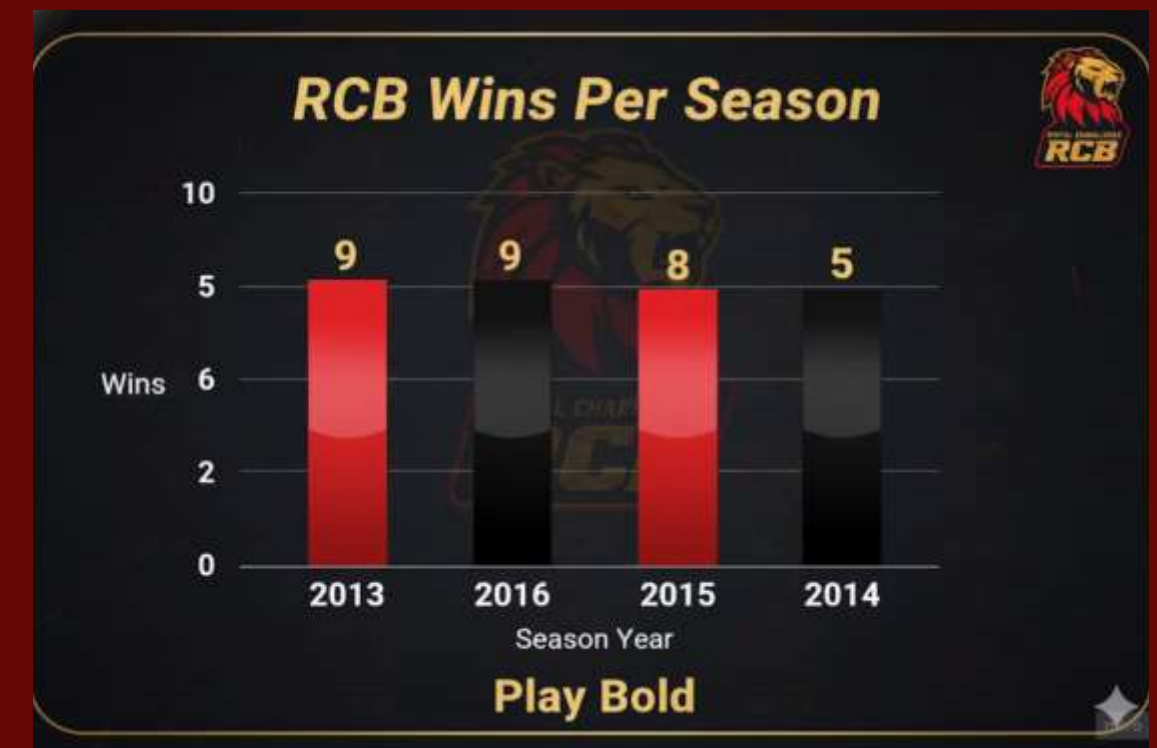Just like a cricket match, analysis needs a game plan. Here's how we set up the innings.

Reading the Scorecard (Findings 1)

Key Findings:

- Season 1 data was incomplete, showing 0 runs for RCB.
- In 2013, RCB won 9 matches — a mid-table performance.
- In 2014, 89 players were over 25, indicating an experience-heavy squad.

Takeaway:

Experience alone didn't ensure consistent wins — the team needed better balance.

The scoreboard starts to speak. Let's see what the early numbers told us.

Powerplay of Insights (Findings 2)

Batting Analysis:

- Calculated average runs per batsman across seasons.

- Identified top 10 players by strike rate (last 4 seasons).

player_name	total_runs
V Kohli	1243
AB de Villiers	1010
CH Gayle	981
Yuvraj Singh	289
DA Warner	260
KL Rahul	255
Q de Kock	183
SR Watson	166
PA Patel	158
AM Rahane	154

Bowling Analysis:

- Right-arm medium and fast-medium bowlers took the most wickets.

- Spinners performed steadily but with fewer key breakthroughs.

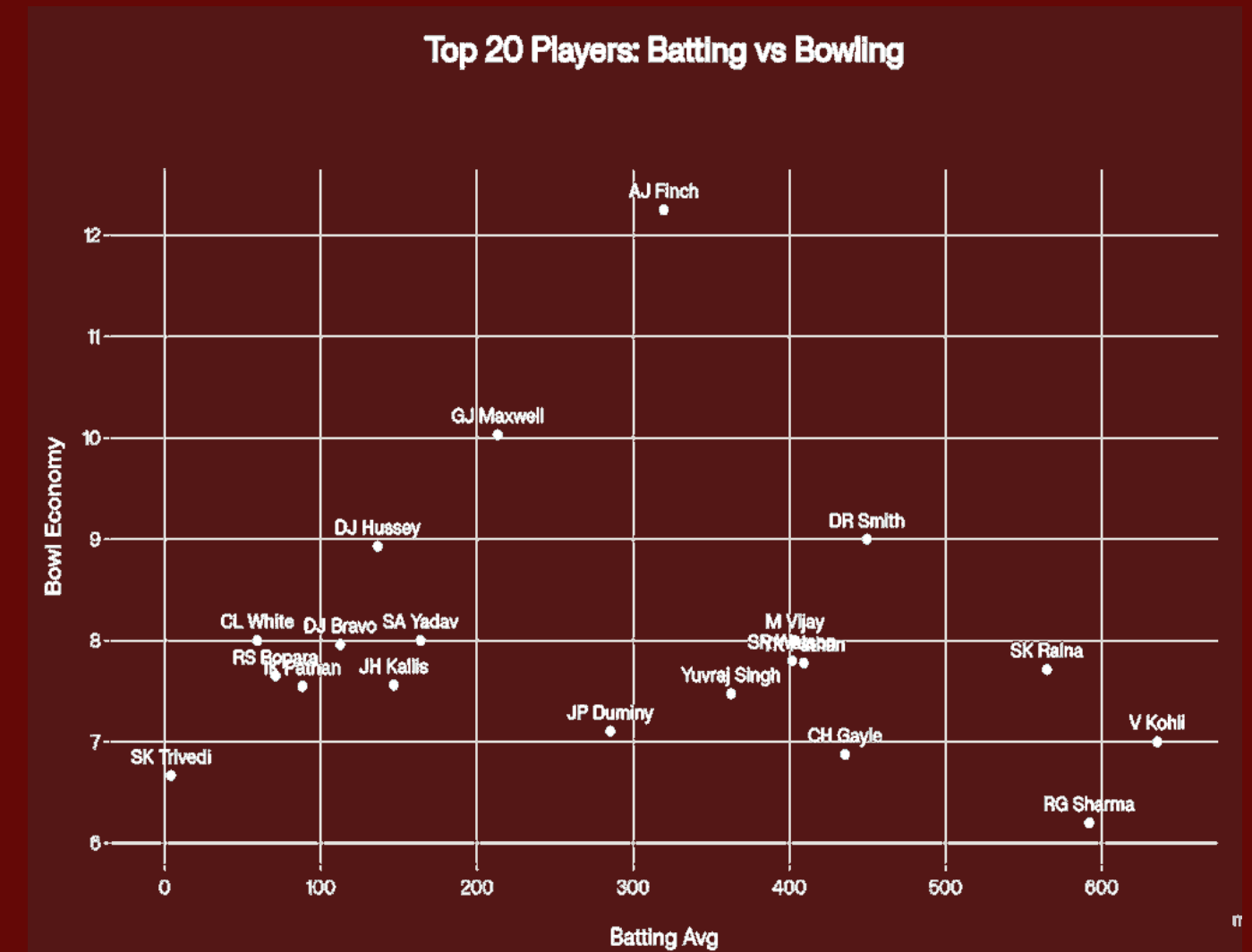Now the data begins to reveal patterns — who shines, who struggles, and where momentum shifts.

The Turning Point: Derived KPIs

Derived KPIs:

Win/Loss Ratio
Bowling Economy Rate
Average Runs per Wicket
Wicket-Taking Frequency

Key Insights:

Medium pacers led in wicket-taking.
Strong batting averages couldn't offset weak bowling economy.
All-rounders (measured by runs + wickets × 20) delivered the best overall impact.

Top 20 Players: Batting vs Bowling

Now the story shifts from stats to strategy — the data starts suggesting what wins matches.

Strategic Recommendations (1/3)

Focus: Auction & Team Composition

- Retain core players who consistently boost win percentage.
- Prioritize all-rounders for both batting depth and bowling options.
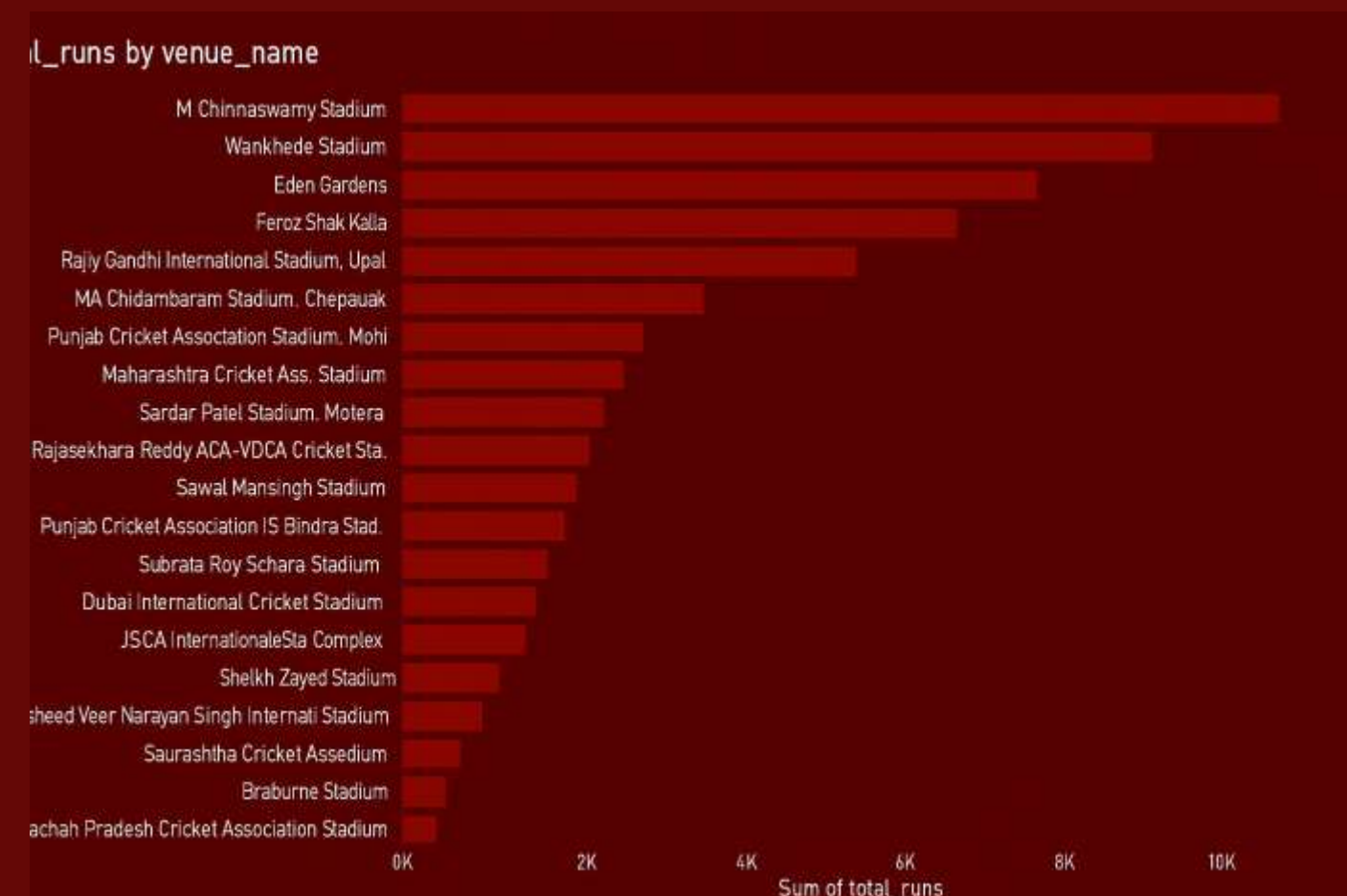- Strengthen the fast-medium bowling unit, RCB's most reliable wicket source.

Every insight now becomes a piece of strategy — it's time to rebuild RCB's winning blueprint.

Focus: Venue & Conditions Strategy

- Maximize home advantage at Chinnaswamy, which favors strong batting.
- Target bowlers who perform well in high-scoring grounds.
- Use venue-specific player stats to guide selection and rotation.

l_runs by venue_name

Sum of total_runs

Cricket is a game of context — pitches, crowds, and stadiums tell their own stories.

Strategic Recommendations (3/3)

Focus: Data-Driven Decision Making

• Use strike rate + economy KPIs before match selections.

• Track morale impact players — those whose presence boosts win %.

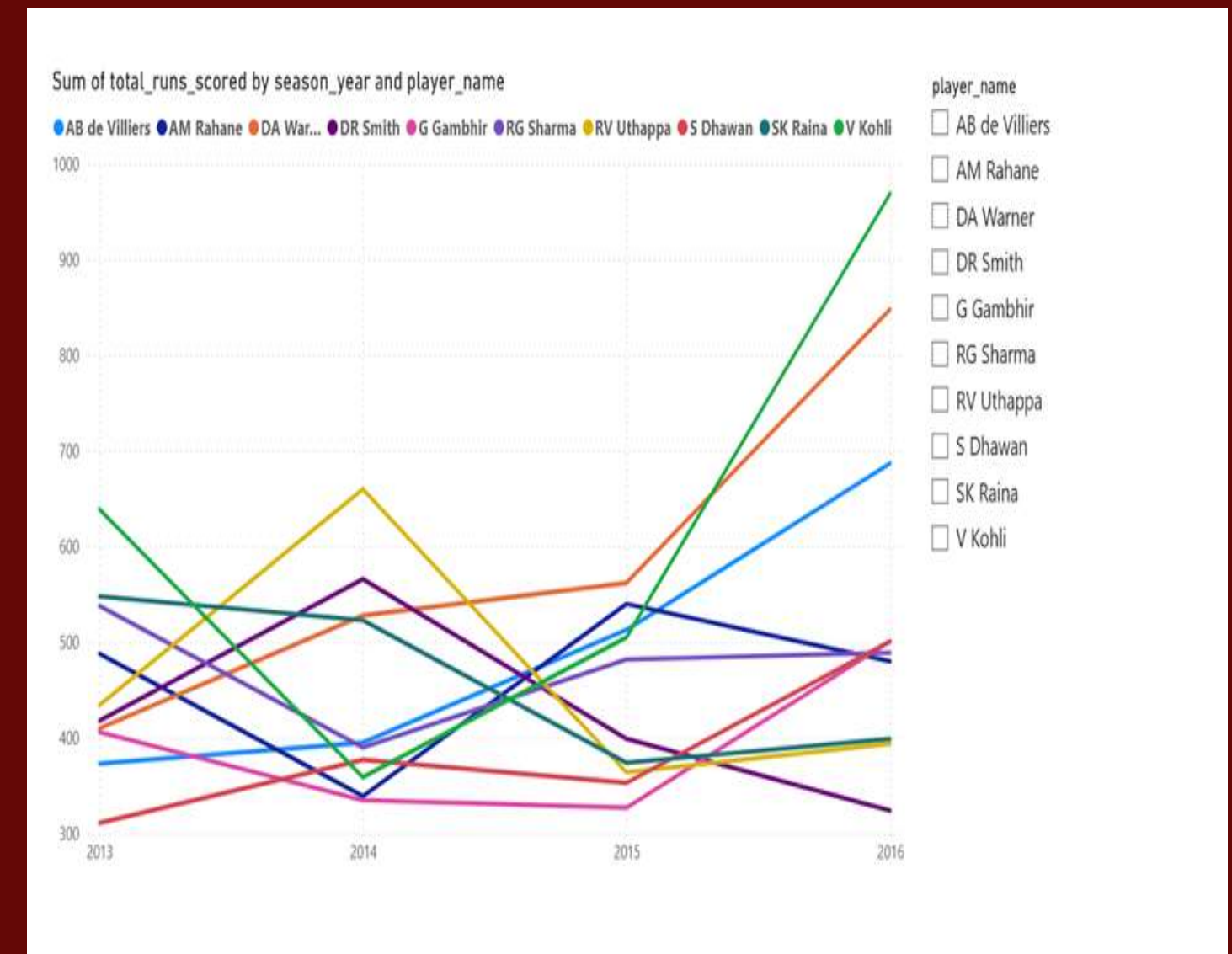• Integrate SQL dashboards with live team analytics.

Data isn't just a backend task — it's the 12th man on the field.

Players who performed consistently well

- **Every IPL season tells its own story — of rising stars, fading forms, and rare consistency.**
- From 2013 to 2016, few players like **Virat Kohli** and **AB de Villiers** made consistency their trademark — their runs reflecting focus, adaptability, and hunger to improve.
- **Rohit Sharma** and **David Warner** showed flashes of brilliance, each with their own rhythm and impact.
- In the end, it wasn't just about runs — it was about **reliability when it mattered most.**

Sum of total_runs_scored by season_year and player_name

● AB de Villiers ● AM Rahane ● DA War... ● DR Smith ● G Gambhir ● RG Sharma ● RV Uthappa ● S Dhawan ● SK Raina ● V Kohli

player_name
☐ AB de Villiers
☐ AM Rahane
☐ DA Warner
☐ DR Smith
☐ G Gambhir
☐ RG Sharma
☐ RV Uthappa
☐ S Dhawan
☐ SK Raina
☐ V Kohli

Consistency is what transforms average into excellence.

Conclusion

- SQL analysis showed RCB's imbalance between batting strength and bowling depth.
- Venue conditions, player roles, and bowling styles significantly influenced match results.
- All-rounders and pace bowlers emerged as the key contributors to success.
- Data-driven strategies can redefine team composition and match planning.

Numbers don't lie — and in cricket, they tell the story behind every victory.

After every match, there's reflection. After every analysis, there's clarity.