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Visualization and Analysis of Pro Kabaddi League Data Across All Seasons Using Tableau

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Abstract- Every PKL match across multiple seasons outcomes, dates, venues, scores, teams in one place. That's what this dataset is. What you can actually do with it is more interesting than the description suggests. Win/loss trends show which teams hold up across a full season and which ones are inconsistent. Scoring patterns reveal whether a team plays the same way regardless of opponent or adjusts. Venue data is underrated — some teams genuinely perform differently away from home, and the numbers show it. Zoom out across seasons and the league's own growth becomes visible too. More cities, more matches, more structure. PKL didn't stay the same sport it was in its first season, and this data captures that shift better than any summary could.

Keywords- Pro Kabaddi League, Data Visualization, Sports Analytics, Team Performance, Match Analysis, Scoring Trends, Player Performance, Visualization Techniques, Seasonal Analysis.

I. INTRODUCTION

PKL works well as a subject for sports analytics because the data is actually there — structured, multi-season, detailed enough to do real work with. Studies have shown that visualization and analysis can clarify match outcomes, team performance, and scoring trends [1]. Player-level data adds another dimension; individual raiders and tacklers often decide matches in ways that team aggregates don't capture [3]. And across seasons, the league's own trajectory becomes part of the story — kabaddi went from semi-professional to genuinely competitive fast enough that the data reflects a sport still figuring itself out.

For students and researchers, that's what makes it worth digging into. Not just the match results, but the shift underneath them — from instinct-based coaching to something more quantifiable, from local sport to nationally tracked competition. The analytical tools exist. The data exists. What's still developing is how well kabaddi-specific research uses both.[4]

II. LITERATURE SURVEY

Kabaddi analytics got a proper starting point in 2018, when researchers ran PKL match data through visualization tools and found that metrics like raid points and tackle success could actually explain why teams win or lose — not just describe what happened [1].

Kumar (2020) covered the structural side: rules, player roles, match formats. Dry reading, but the underlying point matters — kabaddi didn't professionalize by accident. Someone had to standardize it [2].

Sharma (2024) confirmed something that's pretty obvious if you've watched PKL closely — matches aren't won by committees. A small number of players, through raids and tackles, end up deciding most of what happens on the mat. The study puts numbers to it, which is useful, but the real value is in which players those are and when they show up [3]. Reddy et al. (2026) went furthest with this — an AI platform that predicts raid success using machine learning. Whether it holds up in real match conditions is a fair question, but the approach is more useful than post-hoc analysis [4].

Patil (2022) compared IPL and PKL to see which does more for local development. The honest answer: both do, in pretty similar ways — jobs, money circulating locally, more kids picking up a sport. It's not a groundbreaking finding, but having actual data behind it beats assuming [5].

Singh (2025) went through kabaddi player testing and the real issue isn't what gets measured — agility, strength, endurance, everyone agrees on those. It's that no two teams test the same way, which makes comparing players across squads pretty meaningless [6]. Joseph (2021) looked at PKL's marketing and found that branding and media deals did most of the heavy

lifting. Fan engagement helped too, but it was the media exposure that actually grew the audience [7].
Verma (2015) caught something interesting early on — young people were already warming up to kabaddi, and PKL's media presence was the main reason. That was 2015. The trend clearly continued [8].

Khan (2022) put basketball and kabaddi players through the same fitness tests and the gaps were pretty telling. Kabaddi players were built for short explosive bursts — the kind you need when you're charging into a defensive line and getting back out. Basketball players had the endurance edge. Different sports, different bodies [9].

Rao (2020) traced kabaddi from village courtyards to prime-time television. The interesting part isn't that it grew — it's what got left behind in the process. Commercialization cleaned it up, professionalized it, made it watchable for millions. Whether it's still the same sport is a harder question [10].

Mehta (2023) ran logistic regression on PKL match data to see if outcomes could be predicted before they happened. They can, reasonably well — historical performance and player stats turned out to be the most reliable inputs. Not a surprise, but it's useful proof that machine learning has a real role here beyond just crunching post-match numbers [11].

Das (2019) tracked how PKL grew between its early seasons — bigger crowds, more sponsors, better infrastructure. What's worth noting is how fast it moved. The league didn't slowly build an audience; it manufactured one, and the money followed [12].

Gupta (2021) covered PKL's growth in India — viewership up, commercial deals up, kabaddi suddenly relevant to sponsors who wouldn't have looked twice a decade earlier. The numbers back it up, but the more interesting story is how quickly the league normalized. It stopped being a novelty [13].

Shinde (2019) looked at what happens to public interest in kabaddi and football after major tournaments. Predictably, it spikes. What's actually useful in the research is the scale of that spike — big events don't just remind people a sport exists, they pull in people who'd never engaged with it before [14].
Yadav (2022) compared kabaddi players from different regions and found real physical differences — strength and endurance varied in ways that tracked back to environment and training conditions. It raises an uncomfortable question for national selectors: are you picking the best players, or the best-prepared ones [15]. Kumar and Singh (2023) tested agility in professional and non-professional kabaddi players. Professionals were more agile — nobody's shocked. What matters is the gap. If training alone accounts for it, that's actually good news for development programs trying to bring non-pro players up to speed [16].

Patel (2026) put kabaddi players through structured training programs and measured what changed. Strength, speed, and overall performance improved which is exactly what you'd expect, but having controlled data behind it matters more than it sounds. Coaches running on instinct and coaches running on evidence[17].

Nair (2023) argued for bringing proper statistical models into kabaddi — using numbers to shape strategy before a match, not just explain what went wrong after. Cricket and football have been doing this for years. Kabaddi is behind, and that gap is closing slower than it should [18].

Ramesh (2020) looked at how playing on mats changed things for kabaddi players. Fewer injuries, cleaner skill execution — the surface matters more than people probably assumed. It's one of those unglamorous infrastructure changes that quietly improves the sport [19].

Suresh (2020) trained raiders specifically on raiding — not general fitness, just the skills that matter in that role. Speed improved, decision-making sharpened, accuracy went up. Focused training beats generic conditioning. Obvious in theory, but it's good to have kabaddi-specific data backing it [20].

III. METHODOLOGY & MATERIAL

This study uses the PKL All Seasons dataset to look at match outcomes, team performance, and scoring patterns across seasons. Team names, results, scores, dates, venues — the dataset has both categorical and numerical data, enough to track how teams perform over time and how the league itself has changed.
The data needed cleaning first. Missing values, duplicates, inconsistent formats — standard problems with real-world sports data. Once sorted, it was ready to work with.

Python did the heavy lifting. Pandas and NumPy for the data work, Matplotlib and Seaborn for charts. Bar charts, line graphs, pie charts, heatmaps — depending on what each question actually needed.

The result is a fairly complete picture of PKL across seasons. Which teams win consistently, how scoring behavior shifts, what venue does to results. The visualizations make patterns visible that raw numbers don't.

Table-1: dataset Attributes

Attribute Name	Description (What it Represents)	Attribute Type
Season	Represents the season number of the Pro Kabaddi League	Categorical
Date	Indicates the date on which the match was played	Date/Temporal
Team 1	Name of the first team participating in the match	Categorical
Score 1	Total points scored by Team 1 in the match	Numerical
Team 2	Name of the second team participating in the match	Categorical
Score 2	Total points scored by Team 2 in the match	Numerical
Venue	Location or stadium where the match was conducted	Categorical

IV. DATA VISUALIZATION

1. KPI Cards:

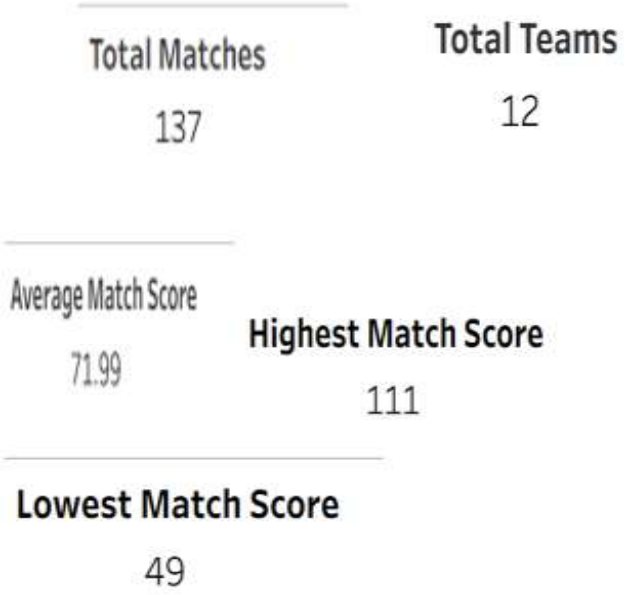

Figure-1: KPI Cards of Match

The KPI cards cover the basics at a glance — total matches, teams participating, highest score, lowest score. Four numbers that tell you the scale and range of Season 10 before you look at anything else.

That's the point of them. Not analysis, just orientation. You know immediately how many matches were played, how many teams were involved, and how wild or tight the scoring got. Everything else in the dashboard builds from there.

2. Which Team Has Highest Wins

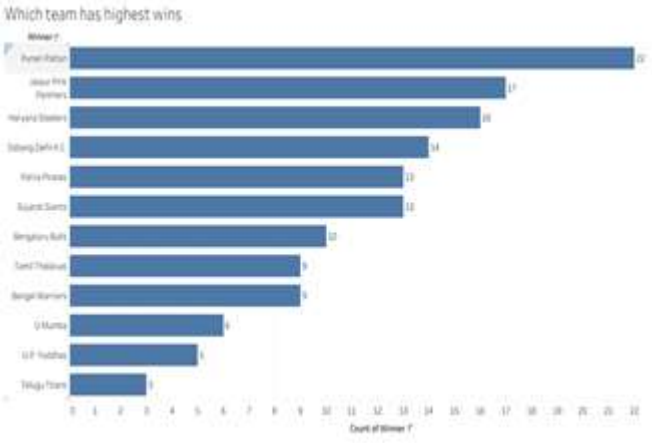

Figure-2: Which Team Has Highest Wins

This chart ranks teams by total wins in Season 10. Sorted highest to lowest, so the competitive gap between teams is

immediately obvious — who dominated, who kept pace, and who struggled to get results consistently.

3. Lowest Performing Team

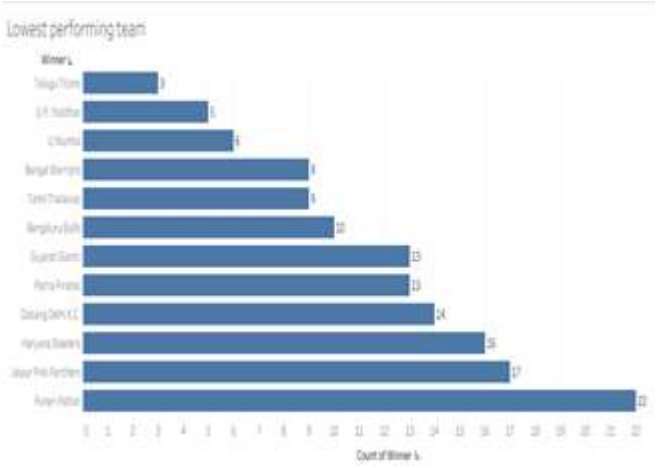

Figure-3: Lowest Performing Team

The flip side of the previous chart. Same data, sorted the other way — fewest wins at the top, which puts the struggling teams front and center. Season 10 had clear gaps between the competitive and the rest, and this is where that shows.

4. Close vs One-Sided Matches

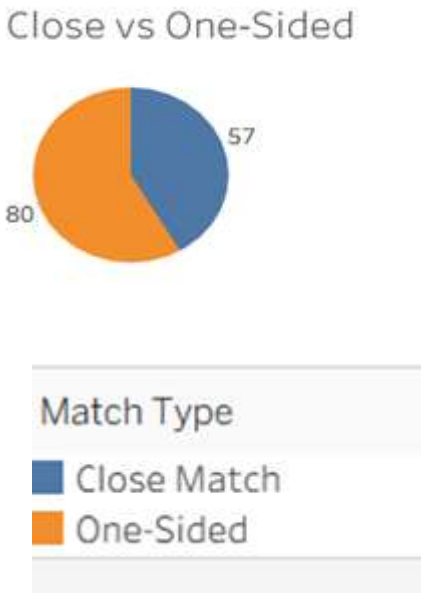

Figure-4: Close vs One-Sided Matches

This chart splits matches into close contests and one-sided games. Season 10's mix of the two says something about how competitive the tournament actually was — a lot of blowouts points to a few dominant teams, a lot of close finishes means the field was fairly level. Worth checking before drawing any conclusions about team strength.

5. Score Distribution

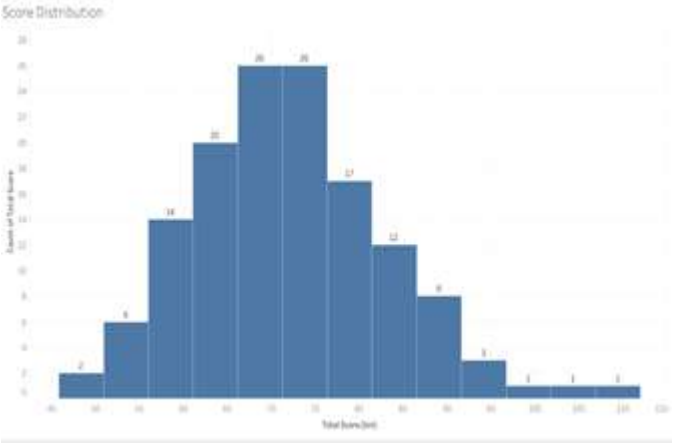

Figure-5: Score Distribution

This chart shows where match scores actually landed in Season 10. Most games bunched around a typical range, or did scoring vary wildly? The shape of the distribution answers that. Outliers stick out too — and those are usually the matches worth looking at twice.

6. Score Difference Distribution

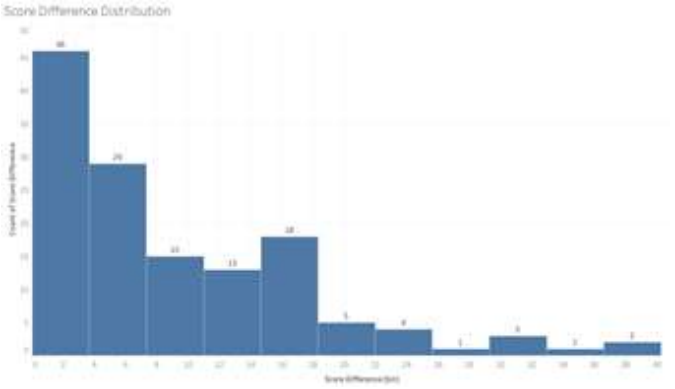

Figure-6: Score Difference Distribution

This chart shows the margin of victory across Season 10 matches. Narrow margins mean tight finishes, big ones mean somebody got dominated. The distribution tells you which was more common — and whether PKL Season 10 was genuinely competitive or quietly one-sided.

7. Matches Per Venue

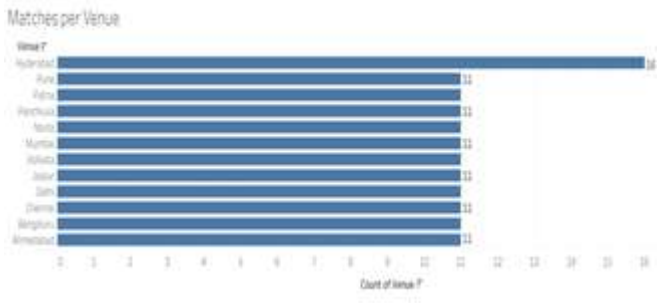

Figure-7: Matches Per Venue

This chart shows which venues hosted the most matches in Season 10. Some cities carried more of the schedule than others — whether that reflects capacity, logistics, or league preference is a separate question, but the distribution is uneven enough to notice.

8. High Scoring Venues

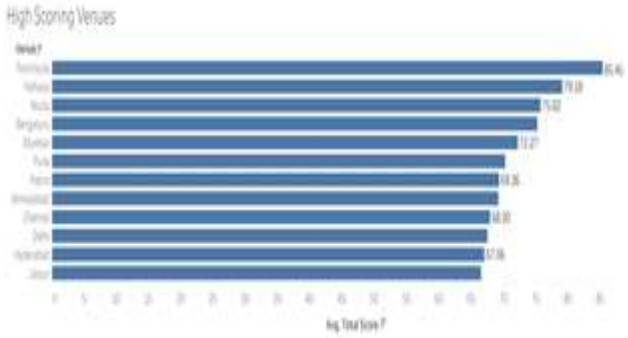

Figure-8: High Scoring Venues

Some venues produce higher scoring matches than others — this chart shows which. Whether that's crowd noise, mat conditions, or teams playing differently away from home is hard to pin down, but the pattern is real enough to be worth questioning.

9. Venue Impact on Outcome

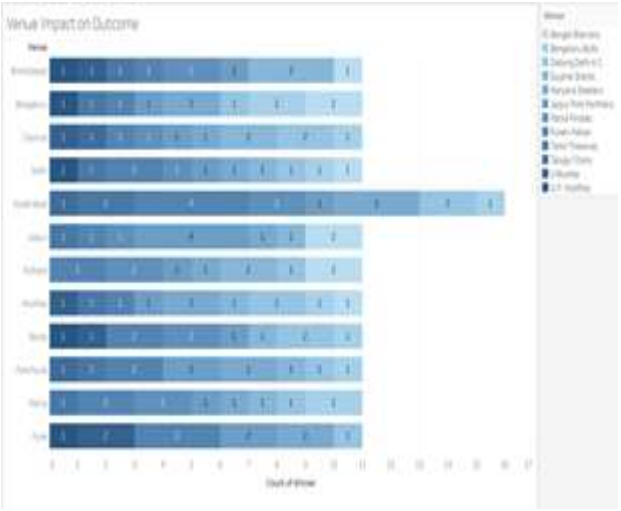

Figure-9: Venue Impact on Outcome

This chart breaks down which teams won at each venue in Season 10. Some teams show up differently depending on where they play — this is where that becomes visible. Home advantage in PKL is debated, but if it exists, the winning patterns across venues are where you'd first spot it.

10. Are Matches Competitive

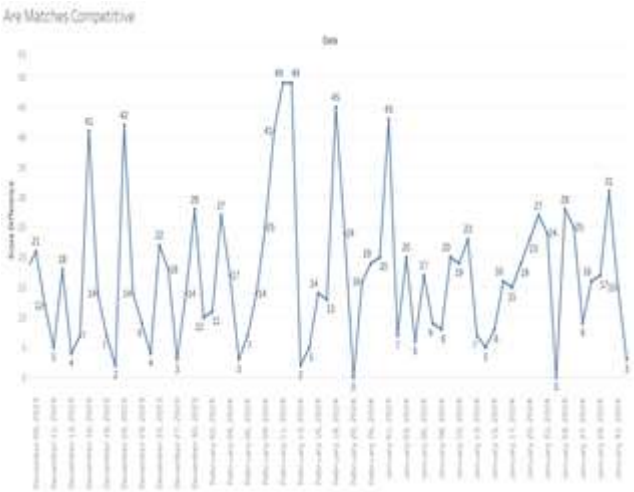

Figure-10: Are Matches Competitive

Two ways of looking at the same question — how competitive were Season 10 matches really? The pie chart gives you the split between close games and blowouts. The distribution

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shows how extreme the margins got. Together they give a clearer answer than either would alone.

11. DashBoard:

Figure-11: Pro Kabaddi Dashboard

The dashboard pulls everything together in one place — team performance, match competitiveness, venue patterns, scoring trends. No switching between charts or cross-referencing separate reports. Season 10 in full, from the headline numbers down to the margins that decided individual matches.

12. Story Board:

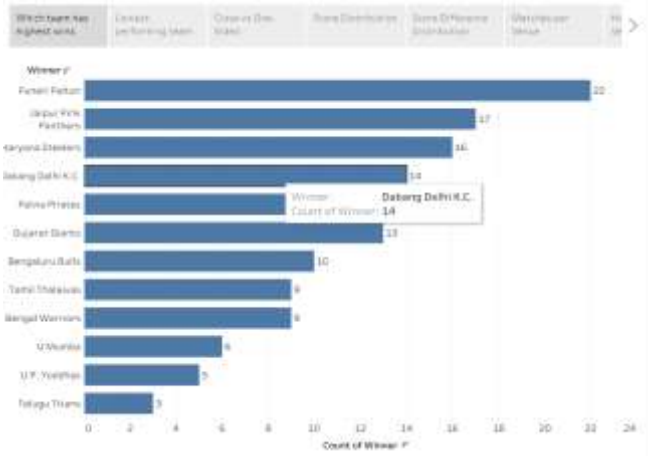

Figure-12: Story Board of Which Team Has Highest Wins

Which team won the most in Season 10? This chart answers that directly — teams ranked by total wins, highest to lowest. The gap between the top team and the rest is visible immediately, and that gap is usually more telling than the number itself.

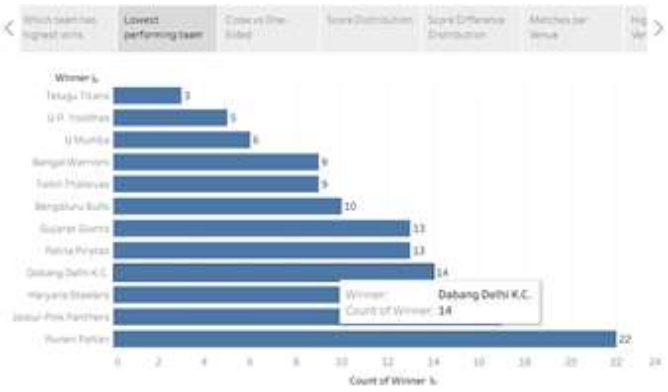

Figure-13: Story Board of Lowest Performing Team

Same chart, another end of the table. Which team won the least in Season 10 — and by how much did they trail the rest? The gap at the bottom is often as revealing as the gap at the top, sometimes more so.

Figure-14: Story Board of Close vs Onesided

Were Season 10 matches actually competitive, or did a handful of teams just run over everyone else? This chart splits matches into close finishes and blowouts. The ratio between the two tells you more about the tournament's character than any single result does.

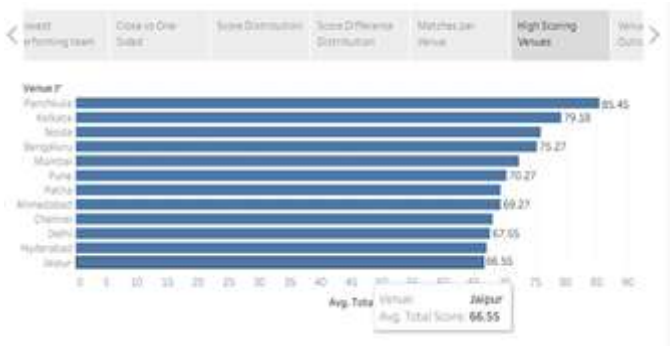

Figure-15: Story Board of High Scoring Venues

Not all venues played the same in Season 10. This chart shows where scoring was highest on average — and some locations stand out enough to suggest the venue itself is a factor, not just the teams that happened to play there.

V. CONCLUSION

PKL data responds well to visualization. Team performance, scoring patterns, venue effects, match competitiveness — the charts made patterns visible that raw numbers wouldn't. That's not a minor point. Most sports data sit unused not because it's unavailable, but because it's never made legible.

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