



DATA ANALYSIS FOR BETTER PERFORMANCE IN SPORTS

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Abstract

Data Analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense & recap, and evaluate data. It is a kind of quantitative research, which seeks to quantify the data, and typically, applies some form of statistical analysis. It is a kind of quantitative research, which seeks to quantify the data, and typically, applies some form of statistical analysis. Quantitative data basically involves descriptive data, such as survey data and observational data. Sports analytics can be explained as using data related to any sports or game. Like statistics of players, Weather conditions, Team's recent wins/lose, etc. With this data, we can create predictive machine learning models to make informed decisions on behalf of the management. The main objective of sports analysis is to improve team performance and enhance the chances of winning the game. This research article aims to describe the data analysis in sports.

Keywords: *Data analysis, Player analysis, Team analysis, Spectators analysis*

INTRODUCTION

Data analysis is a **procedure of performing various statistical operations**. It is a kind of quantitative research, which seeks to quantify the data, and typically, applies some form of statistical analysis. Quantitative data basically involves descriptive data, such as survey data and observational data. Data Analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data.

According to Shamo and Resnik (2003) various analytic procedures “provide a way of drawing inductive inferences from data and distinguishing the signal (the phenomenon of interest) from the noise (statistical fluctuations) present in the data”.

A simple example of Data analysis is whenever we take any decision in our day-to-day life is by thinking about what happened last time or what will happen by choosing that particular decision. This is nothing but analyzing our past or future and making decisions based on it. For that, we gather memories of our past or dreams of our future. So that is nothing but data analysis. Now same thing analyst does for business purposes, is called data analysis.

Popular sports like football, soccer, cricket, tennis, and hockey are watched by audiences all over the globe. There's big money involved, and larger teams are always looking to find a chink in their

opponent's armor. Thanks to comprehensive Sports Data Analytics, that is now more possible than ever.

With increased spending, sports teams are now able to move away from more conventional methods of analyzing the opposition. Instead of simply limiting research to watching how certain teams play, sports teams are able to invest in comprehensive analytical data that they can use to evaluate their competitors' performance.

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The purpose of Data Analysis is to extract useful information from data and taking the decision based upon the data analysis. This article will provide you with an in-depth understanding of what Sports Data Analytics is, how numerous sports teams are using it to their advantage along with a list of predictions that can be made using Sports Data Analytics

Major Teams and their Analytics Partner

Real Madrid and Microsoft

One of the world's greatest football clubs — Real Madrid — is using Microsoft technology to transform its operations, performance, fitness, and relationships with 500 million global fans.

Manchester United and Aon

Manchester United and Aon, Like thousands of businesses across the globe, Manchester United Football Club relies on Aon as a long-term trusted advisor to find innovative solutions that allow them to stay head of the competition.

THE PREDICTIVE ANALYSIS

The primary use case is doing the predictive analysis, which can deliver insights on how the team should be on game day. Which intern gives better team performance and increases the team's win probability.

We can predict which player performs better at which position, on the match day. Our model will be built on the player's stats as the base, how well he performed against the rival team, match conditions like the game is home or away, etc. So, we can predict which players fit into which position, given the game condition and opponents we are facing.

- **Player analysis**, We can improve each player's game on the pitch and his fitness level by analyzing his training pattern and diet chart then revamp those with the insights from our analysis.
- **Team analysis**, Using the team stats, we can build state-of-art machine learning models like deep neural networks, SVMs, etc to help the team management to figure winning combinations with their probabilities.

- **Fans management analysis**, With the social handle data, we can find patterns and form clusters/groups using clustering algorithms, within the fans base and run campaigns on targetted groups. Knowing factors which attract s the fans most, team management can focus on improving that aspect, which leads to gaining new fan base and retain the older ones.

Sports Data Analytics can be leveraged for the following applications:

1. Injury Predictions
 2. Player Valuations
 3. Team Strategy
 4. Evaluating Ticket Churn
 5. Ticket Pricing
 6. Sport Betting
- **Team manager Dashboard**, Players match performance stats will be represented in an interactive dashboard format for the better understanding of the game played.
 - **Fans Dashboard**, Fans can be feed with their favorite player’s stats of the match and can compare his game play with others in the rival team or the same team.

Tracking software and machine learning have taken sports analytics to the next level. Companies like Genius Sports are able to generate statistical breakdowns from video footage to help coaches optimize their play calling during games or generate post-game takeaways. Others use cameras and machine learning software to track things like ball speeds, spin rates and player movement, which regularly factor into both broadcasts and team decisions. Baseball players, for example, are regularly seen using tablets to review data like pitch distributions to make adjustments mid-game.

CONCLUSION

This article provided you with a comprehensive understanding of how sports teams across the world are leveraging Sports Data Analytics to improve their performance. It also provided you with a list of the key predictions that can be made using Sports Data Analytics.

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