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Mini Project Idea 2

Research Question/Explanation

How does player efficiency differ from older NBA players to current NBA players and does that have anything to do with changes in playstyle?

The exploration of Player Efficiency Rating (PER) and associated metrics across the extensive dataset aims to uncover nuanced insights into the ever-evolving landscape of the NBA. With an array of statistical measures spanning decades, this analysis seeks to decipher how playing styles, individual performances, and team dynamics have transformed over time.

Implications

**Strategic Evolution through True Shooting Percentage (TS%):** Analyzing TS% can provide deeper insights into the shooting efficiency of players, going beyond traditional field goal percentages. Discovering how TS% has changed over eras may show shifts in shooting strategies, adaptation to rule changes, and the evolution of offensive efficiency.

**Usage Percentage (Usg%) and Its Impact on Player Contributions**: Usg% provides a unique perspective on the utilization of players in team plays. Examining how Usg% correlates with performance metrics can offer insights into the roles players have played in different eras, shedding light on offensive strategies and team dynamics.

**Value Over Replacement Player (VORP) as a Measure of Player Impact**: Delving into VORP allows us to assess the value that players bring to their teams beyond a replacement-level player. Understanding how VORP has changed over time can highlight the evolution of player contributions and the increasing specialization of player roles in the modern NBA.

Data Source

The dataset available that is available on Kaggle (<https://www.kaggle.com/datasets/drgilermo/nba-players-stats?select=Seasons_Stats.csv>) was scraped from [Basketball-reference](http://www.basketball-reference.com/) which was self-described as " an invaluable resource for writers, number-crunchers and fans. It puts all the necessary statistical and biographical information on NBA and ABA players and coaches a mouse click away." and “Basketball-Reference.com is the single most valuable reference tool for anyone who is a fan of the NBA.

Methodology

**Correlation Analysis:**

Correlation Matrix: Examine correlation coefficients between PER and playstyle metrics to identify relationships and potential influencers on player efficiency.

Regression Analysis: Consider regression models to understand the impact of playstyle metrics on PER, controlling for other relevant factors.

**Comparative Analysis:**

Comparison Metrics: Conduct statistical tests to compare the means of PER and other metrics between older and current NBA players.

Effect Size: Assess the effect size of observed differences to determine the practical significance of the findings.

**Descriptive Analysis:**

Statistical Summary: Provide descriptive statistics for relevant variables within each era, such as mean, median, and standard deviation of PER, age, and other key metrics.

Visualization: Utilize visualizations (line charts, bar graphs) to illustrate trends in PER, playstyle metrics, and player statistics over different eras.