**NBA 3-Point Era Analysis- Case Study**

**Project Summary**

This project analyzes how the rise of 3-point shooting has reshaped modern NBA strategy and scoring. Using player- and team-level data from 2012–2024, the analysis examines trends in shot volume, accuracy, and total scoring output. Statistical models and clustering techniques were used to identify performance patterns and forecast future scoring trends.

**Key Questions**

How has 3-point volume and accuracy evolved across NBA seasons?

Is there a significant relationship between 3-point attempts and total scoring?

Can players be grouped into performance archetypes based on 3-point behavior?

What do time-series forecasts suggest about future league scoring trends?

**Key Skills**: Data Cleaning, Exploratory Analysis (EDA), Regression Analysis, Clustering, Time-Series Forecasting, Tableau Storytelling

**Code Overview**

* Data Cleaning- Standardized, merged and filtered player stats.
* EDA- 3-point trends, correlations, and scoring patterns.
* Regression- Measured how 3-point attempts influence total points.
* Clustering- Grouped players into 3 offensive archetypes.
* Forecasting- Predicted league scoring trends through 2027.

**Key Findings**

* The NBA’s offensive evolution is trend-driven, not cyclical, rooted in increased reliance on 3-point volume.
* Teams emphasizing perimeter shooting achieve consistently higher scoring averages.
* Player roles have diversified into distinct archetypes, reflecting specialization in offensive strategy.

**Disclaimer**

This project was completed for educational purposes as part of Career Foundry Data Analytics Program. Data was sourced from Basketball Reference.

**Limitations**

* Data covers 2012-2024 seasons only, limited historical context
* Minor inconsistencies may exist in aggregated player totals due to team changes or missing entries.
* Forecast results are illustrative and not intended for predictive betting or professional use.
* League trends could be influenced by external factors (rule changes, injuries)