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Shot Selection Trends in Euroleague Basketball from 2013 to 2023

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Abstract

This study provides an extensive assessment of the trends in offensive shot selection in Euroleague basketball during a ten-year period, spanning from the 2013-2014 to the 2022-2023 seasons. The following game-related statistics from 1899 games were examined in this study: two-point attempts (2PA), three-point attempts (3PA), and free-throw attempts (FTA). Mean statistics were employed, and the percentage of each shot selection was calculated to offer a understanding of evolving team strategies. The results show a constant and significant shift in the preferences for shot selection, with a noticeable decrease in two-point attempts and a concurrent increase in three-point attempts. Three-pointers made per game had a significant increase, going from 20.86 in the first season to 25.10 in the most recent. The observed trends suggest that Euroleague teams are progressively adapting to the success of three-point shooting in modern basketball. The implications extend beyond the court, influencing team efficiency, player development, and the overall landscape of global basketball. Future research may delve into defensive adaptations in response to increased three-point attempts and compare trends observed in the Euroleague with other prominent basketball leagues globally.

Keywords: Basketball, game trends, shot selection

INTRODUCTION

Sports analytics and data-driven forecasting constitute a rapidly expanding field with versatile applications across various perspectives. This dynamic field is characterized by rapid growth and offers a range of methodologies to explore (3). Research in sports performance analysis aims to identify key performance indicators and effective offensive strategies for coaches. By accumulating data from a substantial number of games, teams can discern patterns in both offensive and defensive aspects. This data-driven approach enables teams to prepare for upcoming games by anticipating the expected offensive and defensive strategies of their opponents (11). Additionally, it aids in monitoring both teams and individual players, contributing to optimum performance and even injury prevention.

Numerous approaches exist for monitoring and enhancing sports performance, with one prevalent method involving the use of game-related statistics to assess technical and tactical aspects. These statistics are invaluable for evaluating team efficiency over the course of a season. Certain research in basketball has employed game-related statistics as a means to quantify player performance. The outcomes resulting from such analyses enable the assessment and definition of performance results across various competition standards. Scoring in a basketball game is entirely achieved through shooting and successful shooting stands as the ultimate goal of offense in basketball (6). In the course of a basketball game, the selection of an appropriate offensive strategy holds paramount importance in determining a team's success. The success of elite basketball teams appears to hinge not solely on the quantity of scoring opportunities a team encounters, but rather on how effectively the team capitalizes on the existing scoring chances (7). Studies have proved that in basketball, the scoring both two- and three-point field goals significantly influences game outcomes and rankings (5). Another study disclosed that three-point performance and successful free throws played a decisive role in determining the outcomes of wins and losses in basketball games (1).

One of the most noticeable trends in basketball in recent times is the emphasis on three-point shooting. Once considered a specialist's domain, the three-point shot has now become a foundation of offensive schemes (4). This trend has not only altered the way teams approach offensive play but has also redefined player roles and skill sets. While the three-point field goal may not be the sole determinant of a basketball game's winner, it undeniably exerts a significant impact on the overall results of basketball games (8). Studies demonstrated that there was a significant increase in the number of three-point attempts (3PA) over time, accompanied by a decrease in the number of two-point attempts (2PA) in the National Basketball Association (NBA) over the course of 40 seasons (14). The global shift in basketball trends exceeds specific leagues or regions, signifying a universal transformation in the way the sport is played and appreciated worldwide. During the 2001-2002 season, teams in the Euroleague attempted an average of 18,5 three-point shots per game. In contrast, this number increased to 24,8 by the conclusion of the 2020 season, proving a notable evolution in the strategic approach to three-point shooting over the years (2). While the game trends in basketball widely suited in the last decade, there is still need for deeper analysis to understand the variety of changes occurred over the years. Therefore, the aim of this study is to conduct a comprehensive offensive shot selection analysis through the game-related statistics within the Euroleague basketball competition across the last ten seasons.

METHODS

Study Design

This study analyzed the game-related statistics from ten (2013-2014 - 2022-2023) Euroleague regular seasons. Game-related statistics of 1899 games has been analyzed in this study. Parameters used to analyze shot selection in this study were: two-point attempts (2PA), three-point attempts (3PA) and free-throw attempts (FTA). All statistics obtained from publicly accessible official website of Euroleague website (*euroleaguebasketball.net/euroleague/stats*).

Statistical Analyses

Mean statistics of each parameter has evaluated in order to compare the game-related statistics collected between ten seasons. Each number of shot selection is divided by the total number of shots taken in a game to calculate the percentage of a specific shot. All analyses were made in SPSS software (IBM SPSS Statistics for Windows, Ver. 22.0. Armonk, NY: IBM Corp.).

FINDINGS

This study is aimed to analyze the shot selections of teams within the Euroleague basketball competition throughout the last ten seasons. Table 1 presents the average number of shots taken in seasons.

Table 1. Average number of field goals and free throw attempts for each season

SEASON	2PA	3PA	FTA
2013-2014	39.68	20.86	16.58
2014-2015	39.48	22.58	18.17
2015-2016	38.40	22.39	17.69
2016-2017	38.96	22.61	17.75
2017-2018	38.55	22.82	18.93
2018-2019	38.34	23.14	17.86
2019-2020	36.97	24.76	17.70
2020-2021	36.33	23.86	16.81
2021-2022	36.38	24.17	15.82
2022-2023	35.72	25.10	18.34

2PA: two-point attempts; 3PA: three-point attempts; FTA: free-throw attempts

As can be seen in Table 1, there is a general decreasing trend in 2PA over the seasons and it might indicate a shift in playing style or strategy. Overall shot distribution is changed

throughout the seasons, it may indicate a potential shift towards more emphasis on three-point shooting.

Table 2. Distributions of field goals and free throw attempts for each season

SEASON	% of 2PA	% of 3PA	% of FTA
2013-2014	51.00%	27.00%	22.00%
2014-2015	49.21%	28.14%	22.64%
2015-2016	48.93%	28.53%	22.54%
2016-2017	49.12%	28.51%	22.37%
2017-2018	48.00%	28.42%	23.58%
2018-2019	48.32%	29.17%	22.51%
2019-2020	46.54%	31.17%	22.29%
2020-2021	47.18%	30.98%	21.84%
2021-2022	47.64%	31.64%	20.72%
2022-2023	45.12%	31.71%	23.17%

2PA: two-point attempts; 3PA: three-point attempts; FTA: free-throw attempts

It is possible to notice the changing offensive focus of teams in Table 2. There is a consistent decrease in the percentage of 2PA over the years. Teams has been shifting towards a greater reliance on three-pointers, as reflected in the increasing percentage of 3PA.



Figure 1. Trends of field goals and free throw attempts over the years

DISCUSSION

The primary objective of this research was to conduct a comprehensive offensive shot selection analysis within the Euroleague basketball competition over the last ten seasons. By leveraging game-related statistics, the study aimed to discern patterns and trends in offensive strategies, with a particular focus on the evolution of three-point shooting. Results showed consistent and notable decrease in two-point attempts (2PA) across the seasons, accompanied by a simultaneous increase in three-point attempts (3PA). This trend suggests a fundamental alteration in the shot selection preferences of teams. Notably, the average number of three-point attempts per game has seen a substantial rise from 20.86 during the 2013-2014 season to 25.10 in the most recent 2022-2023 season. Similar results were found in earlier studies suggesting that the 3PA has increased over the years in Euroleague (2) and the NBA (10).

The percentage of two-point attempts has experienced a gradual decline, starting from 51.00% in the 2013-2014 season and reaching 45.12% in the 2022-2023 season. Concurrently, the percentage of three-point attempts exhibits a steady increase, rising from 27% to 31.71% over the same period. This consistent shift towards a higher reliance on three-pointers underlines a strategic evolution in offensive play. According to another study, offensive factors play a pivotal role in determining success in the Euroleague between 2003-2016 were the number of midrange shots made and attempted (2PT-made, 2PT-attempts), the quantity of free throws made (1PT-made), the number of successful long-distance shots and attempted shots (3PT-made, 3PT-attempts) (13). Research indicates that the playing style of the current pace-and-space era differs significantly from that of the mid-2000s, playing a major role in the decline of the mid-range jump shots and long two-point attempts (10). Studies also compared NBA to Euroleague to gain insight about the changing dynamics of basketball. Results showed that the quantitative differences have decreased over time, but offensively, NBA exhibits more possessions, and free throws per foul committed (12). Another study compared the structural differences between NBA and Euroleague and conclude that the fundamental offensive structures, including transition, early offense, and set plays, differ between the two styles of play. European basketball emphasizes set plays and control, especially through the pick-and-roll, while American basketball relies more on transition and early offense, emphasizing one-on-one situations (9).

The observed trends suggest that teams in the Euroleague have been progressively favoring a perimeter-oriented offensive strategy, possibly influenced by the success of three-point

shooting in contemporary basketball. This shift poses implications for team dynamics, player roles, and overall game outcomes. The strategic emphasis on three-point shooting warrants further exploration into its impact on team efficiency, player performance, and the evolving nature of basketball as a global sport.

CONCLUSION

The data consistently demonstrates a significant and overarching trend – a notable shift towards three-point shooting. Both the average number of three-point attempts and the percentage distribution of three-point attempts exhibit a steady increase across the seasons. This emphasizes a strategic preference for perimeter shooting, reflecting a departure from traditional two-point-centric playing styles. The shift towards a three-point-centric strategy not only influences offensive play but also redefines player roles and skill sets. Coaches may need to adapt their strategies to accommodate this evolving landscape, and players may find themselves increasingly valued for their three-point shooting proficiency. This study provides insights for coaches, teams, and analysts, prompting further exploration into the impact of this strategic shift on team performance, player development. Further research can investigate the defensive side of the game by analyzing how teams adjust their defensive strategies in response to the rise in three-point attempts. Additionally, there is still need for analysis to compare the trends observed in the Euroleague with other prominent basketball leagues globally.

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