

Factors determining the level of sport performance in the Women's Euroleague from 2010 to 2019

Summary:

Contemporary basketball is characterized by a high degree of both technical and tactical complexity. Achieving success at the highest levels of competition requires not only appropriate individual preparation of players but also proficient behavioral coordination within the team, along with the ability to implement advanced tactical strategies in both offensive and defensive contexts. Key athletic achievements become attainable through meticulous roster selection and an efficient training process.

In order to adequately assess the effectiveness of training activities, it is essential to employ reliable diagnostic tools that allow for the monitoring of training loads as well as a detailed analysis of game performance, both at the individual and team levels. Quantitative analysis—which involves recording key performance indicators such as shooting accuracy, rebounding efficiency, number of turnovers, and number of assists—and qualitative analysis—which enables the evaluation of decision-making quality, as well as the effectiveness of defensive and offensive actions—are both of equal importance in this context.

While numerous studies have focused on analyzing the highest-level men's competitions, such as the NBA and EuroLeague, as well as national leagues and major international events organized by FIBA, there remains a lack of data concerning the key factors that determine sporting outcomes in the women's EuroLeague. Therefore, the primary aim of this study was to identify the most significant variables characterizing gameplay in the women's EuroLeague and to determine their influence on sporting outcomes at this level of competition.

Due to limitations such as the COVID-19 pandemic and the military actions undertaken by Russia against Ukraine during the research period, the time frame from 2010 to 2019 was selected as the most appropriate for analysis. This allowed for the inclusion of 10 seasons involving the 9 top-performing women's basketball clubs in Europe, while excluding teams that participated in fewer than 9 seasons.

As a result of the conducted mathematical and statistical analyses, the aspects of the game that had the greatest impact on achieving sporting success were identified. The key determinants correlating with sports performance at the Women's EuroLeague level during the analyzed period were successful three-point shots, number of fouls committed, number of turnovers, successful two-point shots, and successful free throws. The most significant predictor of sports performance across all analyzed teams was the variable representing successful three-point shots.

Over the 2010–2019 period, notable changes were observed in the impact of dominant performance determinants on sporting outcomes in the women's EuroLeague.

In summary, basketball performance is the result of the interaction of numerous variables, each of which may have varying importance in individual games. However, the results of the analyses indicate that successful three-point shots played the most significant role during the examined period, which provides an important implication for coaches to emphasize this type of shot during training sessions and to incorporate it into tactical strategies.