Home advantage in EuroLeague basketball: Quantifying the interactions between team quality, competitive balance, and season dynamics

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ABSTRACT

Home advantage (HA) remains a persistent phenomenon in elite basketball. This study quantified HA across eight EuroLeague seasons (2016–2025) and examined how team quality (TQ) and competitive balance (CB) influence it. Data from 2,154 regular-season games were obtained from the official EuroLeague website. HA% and home win percentage (HW%) were calculated, while CB was measured using the Standard Deviation Ratio (SDR). TQ was determined using a Two-Step Cluster Analysis based on win percentage (W%), classifying teams into high, medium, or low-quality groups. One-way ANOVA examined seasonal and TQ variation, while Spearman's correlation and multiple regression assessed relationships among the variables. The results showed that EuroLeague teams won 62.9% of home games on average. HA% peaked in 2021–2022 and dropped in 2020–2021, reflecting the impact of pandemic-related spectator restrictions. CB fluctuated moderately, with a notable imbalance in 2018–2019 (CB = 2.17). Regression results showed that TQ significantly predicted HA% ($p < .01$), with lower-quality teams exhibiting greater HA% effects (B = 10.06, SE = 2.15), whereas CB was not a significant predictor ($p = .088$). HA remains a consistent structural phenomenon in EuroLeague basketball, more likely due to psychological and situational factors, resilient to changes in league parity.

Keywords: Performance analysis, Game location, Home-away, Basketball.

INTRODUCTION

The strength and consistency of home advantage (HA) are among the most enduring and extensively studied phenomena in sports science (Dosseville, Edoh, & Molinaro, 2015; Gómez, Pollard, & Luis-Pascual, 2011; Jamieson, 2010; Nevill & Holder, 1999; Pollard, Prieto, & Gómez, 2017; Yang & Kolbinger, 2024). Despite significant changes in sports over the years, HA has remained notably consistent. It describes the tendency for teams to perform better at home than on the road (Allen & Jones, 2014; Pollard & Gómez, 2015a). This is evident when home teams win more than half of their games in a home-and-away schedule (Courneya & Carron, 1992). In many team sports, such as basketball, handball, soccer, and baseball, numerous studies indicate that home teams win significantly more often than visiting teams. Several factors contribute to this advantage, including familiarity with the playing environment, support from the home crowd, reduced travel fatigue, officials' decisions, and the psychological comfort associated with routine and local support (Bilalić, Gula, & Vaci, 2021; Leite, Pollard, & Gómez, 2021; McHill & Chinoy, 2020; Pollard & Pollard, 2005).

In basketball, HA has been widely studied (Alonso et al., 2024a; Alonso, Lorenzo, Ribas, & Gómez, 2022; Pollard & Gómez, 2007; Pollard & Gómez Ruano, 2013). The standard method for measuring HA follows Pollard's approach, which calculates the number of home games won as a proportion of all games won at home and away (Pollard & Gómez, 2007), usually expressed as a percentage (Alonso et al., 2022). This measure indicates overall success, not just home performance, and provides a standard numerical value for HA. Another popular metric is the home win percentage (HW%), which shows the percentage of games won by the home team (Alonso et al., 2024a; López-García, Alonso-Pérez-Chao, Navarro Barragán, & Jiménez-Sáiz, 2024). Research across various basketball leagues consistently confirms the existence of HA (Cabarkapa et al., 2023; Góes & Almeida, 2025; Kulenović & Demšar, 2024; López-García et al., 2024; Pojskić, Šeparović, & Užičanin, 2011).

A key factor in understanding how HA varies across seasons is competitive balance (CB), which measures the level of parity in skill and performance potential among teams. When games are played under a balanced home-and-away schedule, CB acts as a moderating factor for HA (Fort, 2017). Leagues with greater competitive imbalance, where a few teams dominate, may show smaller or more stable HA, as stronger teams can often win regardless of venue (Pollard & Gómez, 2014). Conversely, in leagues with higher parity, HA can significantly affect game outcomes (Leite & Diniz da Silva, 2022; Pollard et al., 2017). Additionally, team quality (TQ), which assesses a team's combined skill and performance during a season or tournament, also influences home-court advantage. Better teams generally depend less on home conditions, while weaker teams may benefit more from playing at home. TQ is usually measured using indicators such as win percentage (W%), representing the ratio of games won to total games played (Alonso et al., 2024a).

The EuroLeague provides a unique setting for studying HA, as it unites top teams from across Europe, each with their own fan cultures, extensive travel demands, tactical intricacies, varying rules, and diverse playing styles (Foteinakis et al., 2025). Known as Europe's premier basketball competition, it employs a double-round-robin format that requires teams to adapt to various environments and travel schedules. The EuroLeague is often regarded as more tactical and team-oriented than the NBA (Foteinakis and Pavlidou, 2025). Unlike domestic leagues, EuroLeague teams frequently cross borders and time zones, which can either bolster or diminish home advantage due to travel fatigue, affecting player performance and recovery during a busy international season (Gasperi et al., 2025). This arrangement offers an ideal setting for studying HA, especially since the EuroLeague grants home-court advantage to the top regular-season teams in the playoffs, making consistent home wins a crucial competitive aim.

Despite the league's international prominence and the abundance of detailed performance data, systematic research into the factors, development, and interactions among HA, CB, and TQ remains limited in EuroLeague basketball compared to studies in the NBA or national leagues. Earlier studies have mainly focused on descriptive win–loss records or overall statistics, without combining contextual and structural elements into a comprehensive analytical framework.

The present study employs a multidimensional approach to (a) measure the extent of HA across recent EuroLeague seasons and (b) examine how CB and TQ interact to influence HA effects. This research aims to expand the current literature on European basketball by providing new insights into how league structure, team quality, and competition parity collectively impact HA outcomes. The results are expected to improve both theoretical understanding and practical applications, offering coaches, analysts, and sports scientists an evidence-based model for analysing contextual factors that affect team performance and for guiding strategies to enhance competitive success and playoff positioning.

METHODS

Sample and data acquisition

The dataset included all EuroLeague teams that participated in the championship, covering eight seasons, excluding the 2019–2020 season, which was suspended due to the COVID-19 pandemic. Data were collected from the 2016–2017 to the 2024–2025 seasons and obtained from the open-access official EuroLeague website (https://www.euroleaguebasketball.net/, accessed on September 1st, 2025). Only regular-season games were analysed, since the regular season follows a balanced round-robin format in which each team plays every other team twice, once at home and once away. Playoff and Top 16 phases were excluded to prevent bias from unequal home–away distributions.

The final dataset included 2,154 games across eight seasons, involving 28 teams that participated during the study period, yielding a total of 135 aggregated team-season cases. Because the study used publicly available, televised, and non-identifiable data, no ethical approval or informed consent was required, in accordance with the American Psychological Association's Ethical Principles of Psychologists and Code of Conduct (APA, 2002).

Procedure

For each team and season, the following variables were collected: total wins (W) and losses (L), total home wins (HW) and home losses (HL), total away wins (AW) and away losses (AL), total home games (HG), total away games (AG), and total games played (G). The data were organized and processed following the procedure described by Leite and Silva (2022). All values were compiled into a custom Microsoft Excel spreadsheet (version 16.0; Microsoft Corporation, Redmond, WA, USA) for subsequent analysis.

Variables and Computations

The HA% magnitude was calculated for each team and season. The formula for this method is: HA% = [(HW/W) × 100] (Alonso et al., 2022; Pollard & Gómez, 2015b), where HW is the number of home wins and W is the total number of wins. Additionally, the percentage of home wins was calculated as HW(%) = [(HW/HG) × 100], where HW represents the number of home wins and HG is the total number of home games played (Gómez & Pollard, 2011). To assess the league's competitive balance (CB) for each season, the method proposed by Fort (2017) was used, calculating the Standard Deviation Ratio (SDR), defined as: SDR = ASD/ISD, where ASD is the actual standard deviation of the win percentages across all teams in each season, and ISD is the ideal standard deviation assuming equal winning probabilities (50%) for all teams.

Higher SDR values indicate greater competitive inequality (lower parity), while lower SDR values suggest a more balanced competition.

Team quality (TQ) was determined by calculating the overall winning percentage (W%) across all seasons for each team: (W%) = [(HW+AW)/G] × 100 (Alonso et al., 2022; Alonso et al., 2023), where AW stands for away wins and G is the total number of games played. Then, a Two-Step cluster analysis was conducted to classify teams into different quality levels. The analysis automatically identified an optimal three-cluster solution, as shown by the Bayesian Information Criterion (BIC) and the silhouette measure of cohesion and separation. The average silhouette coefficient was 0.60, indicating a moderate level of cluster quality (Kaufman & Rousseeuw, 2005). This suggests that the clusters were reasonably well-separated and internally consistent, reflecting meaningful patterns in team performance profiles. The distribution of clusters, along with the sample size and proportion of teams, was as follows: Cluster 1 (high-quality teams): W% = 65.9% ± 6.6%, n = 49 teams, making up 36.3% of the dataset, consisting of teams with higher winning rates that consistently perform at elite levels. Cluster 2 (medium-quality teams): W% = 50.03% ± 4.5%, n = 44 teams, representing 32.6% of the dataset, composed of teams with moderate success. Cluster 3 (low-quality teams): W% = 31.3% ± 5.2%, n = 42 teams, representing 31.1% of the dataset, made up of teams with limited success across seasons.

Statistical analysis
Normality was assessed using the Shapiro–Wilk test. Both HA% and HW% displayed normal distributions ($p > .05$), while CB exhibited a non-normal distribution ($p < .05$). Therefore, both parametric and non-parametric analyses were conducted to ensure reliability. Descriptive statistics were calculated for all variables, including HA%, HW%, CB, and TQ. A one-way ANOVA tested whether levels of HA% and HW% differed across EuroLeague seasons and TQ. When a significant main effect was found, Tukey's post hoc tests were used to compare group means pairwise (Field, 2018). To evaluate the practical significance of the findings, effect sizes (ES) were interpreted using Cohen's (1988) benchmarks: negligible ($\eta^2 < 0.01$), small ($0.01 \leq \eta^2 < 0.06$), medium ($0.06 \leq \eta^2 < 0.14$), and large ($\eta^2 \geq 0.14$). To explore the relationship between CB and HA%, a Spearman rank-order correlation was performed, with correlation strength interpreted as follows (Cohen, 1988): < 0.20 (very weak), 0.20 - 0.39 (weak), 0.40 - <0.59 (moderate), 0.6 - < 0.79 (strong), and ≥ 0.80 (very strong).

To further identify the determinants of HA% across EuroLeague seasons, a multiple linear regression analysis was conducted with HA% as the dependent variable and CB and TQ as predictors. TQ was included as a categorical variable with three levels, based on the previous Two-Step Cluster Analysis of team performance profiles. The model was estimated using the Enter method, and bootstrapping (5000 samples) was applied to obtain bias-corrected and accelerated (BCa) 95% confidence intervals for all coefficients.

Multicollinearity was assessed using the Variance Inflation Factor (VIF), with VIF values below 2 indicating no multicollinearity issues. Model fit was evaluated through the coefficient of determination (R^2, adjusted R^2), ANOVA F-statistics, and information criteria such as AIC and BIC. Predictive accuracy was measured by the Root Mean Square Error (RMSE), which measures the average prediction error of the model. The strength and significance of each predictor were determined by unstandardized regression coefficients (B), bootstrap significance levels (p), and 95% confidence intervals (CI).

The level of statistical significance was set at $p < .05$. JASP software (Version 0.18, JASP-Team, Netherlands) was used for the data analysis.

RESULTS

A total of 2,154 games across eight seasons of the EuroLeague Championship were analysed, during which 1,349 home wins and 805 home losses were recorded. Table 1 shows descriptive statistics for the studied seasons, including the number of games, home wins and losses per season, HA% and HW%, and the league's CB for each season.

Table 1. Descriptive statistics, HA%, HW%, and CB in the EuroLeague championship, divided by season.

Season	Games (n)	HW	HL	HA% (M ± SD)	HW% (M ± SD)	CB
2016-2017	240	152	88	63.75 ± 8.16	63.33 ± 20.51	1.73
2017-2018	240	151	89	63.94 ± 9.37	62.91 ± 17.29	1.71
2018-2019	240	155	85	68.53 ± 13.86	64.58 ± 19.88	2.17
2020-2021	306	167	139	56.44 ± 9.17	54.59 ± 14.99	1.84
2021-2022	210	143	67	69.15 ± 10.78	68.01 ± 18.13	1.77
2022-2023	306	194	112	63.40 ± 7.51	63.40 ± 17.76	1.64
2023-2024	306	200	106	66.67 ± 8.83	65.35 ± 18.91	1.90
2024-2025	306	187	119	62.24 ± 10.30	61.11 ± 16.40	1.73
T/A	2154	1349	805	64.26 ± 9.75	62.91 ± 16.18	1.81

Note: n – total number of games per season; M ± SD – Mean ± Standard Deviation; HW – home wins; HL – home losses; HA% – home advantage %; HW% – home winning %; CB – competitive balance per season; T/A –total or average.

A one-way ANOVA examined whether HA% differed across seasons. The results were statistically significant, $F_{(7, 127)} = 2.86$, $p < .001$, indicating that mean HA% varied by season. The effect size was medium ($\eta^2 = .136$), suggesting practically meaningful differences between seasons. Figure 1 displays the HA% for each season. The shaded band around the line represents the standard deviation (SD) above and below each season's HA% and illustrates seasonal variability. The long-term average HA% is 64.26% (dashed red line). Seasons with higher HA% included 2021–2022 and 2018–2019, both well above the average, while 2020–2021 had the lowest HA%, well below the long-term average. Most other seasons clustered between approximately 63–67% (Figure 1).
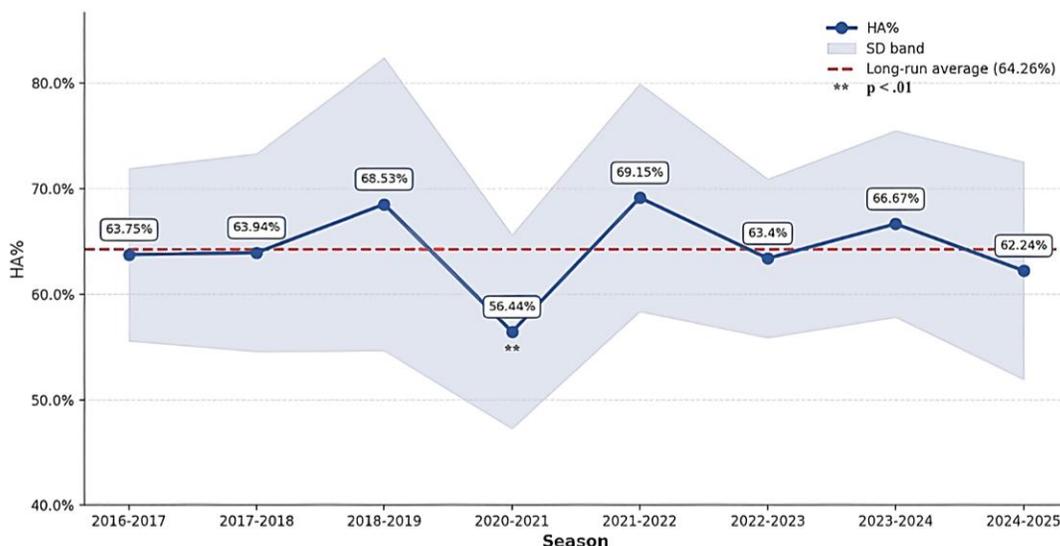

Figure 1. EuroLeague HA% by season.

Tukey post hoc pairwise comparisons primarily revealed differences involving the 2020–2021 season: HA% was significantly lower in 2020–2021 compared to 2018–2019 (mean difference = −12.09, $p < .01$) and 2021–2022 (mean difference = −12.71, $p < .01$). A smaller, marginal pattern was observed with 2023–2024 exceeding 2020–2021 (mean difference = 10.24, $p < .05$). No other pairwise comparisons showed statistically significant differences.

Regarding HW%, a one-way ANOVA tested whether HW% varied across the 8 seasons. Despite visible year-to-year differences, HW% did not change significantly across seasons, $F (7, 127) = 0.82$, $p = .57$, $\eta^2 = .04$. Season HW% ranged from 54.59% (2020–2021) to 68.01% (2021–2022). For the remaining seasons, HW% remained near the long-term average (62.9%), showing a stable pattern (Figure 2).
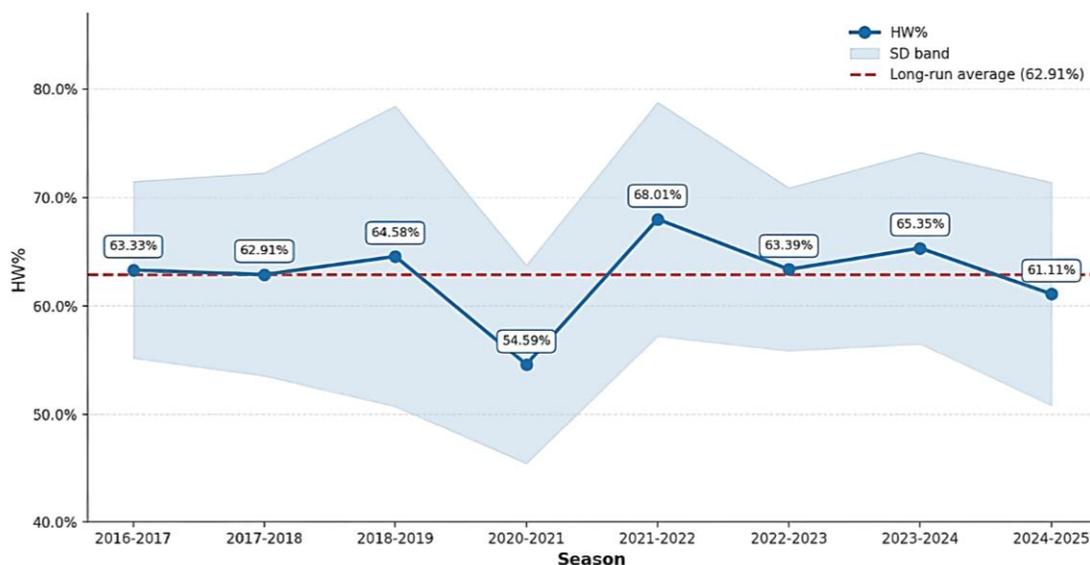

Figure 2. EuroLeague HW% by season.

Tukey post hoc comparisons showed that the largest observed, but not significant, difference ($p = .40$) was between the 2021–2022 and 2020–2021 seasons, with the 2021–2022 season showing a 13.41% higher HW%. Another relatively large but nonsignificant difference was between the 2023–2024 and 2020–2021 seasons (mean difference = 10.76, $p = .625$). All other pairwise differences were minor, with wide confidence intervals that crossed zero.

Figure 3 shows the mean values of HA% and HW% regarding the TQ. The one-way ANOVA revealed that differences in HA% were statistically significant, $F(2, 132) = 12.56$, $p < .001$, indicating that mean HA% varied across TQs. The effect size was large ($\eta^2 = .16$), suggesting practically large and significant differences between the groups. Tukey post hoc pairwise comparisons revealed that HA% were significantly different between the high and low-quality groups ($p < .01$). At the same time, smaller differences were observed between the high– medium and medium–low quality groups ($p < .05$). Significant differences ($F (2, 132) = 110.06$, $p < .001$, $\eta^2 = .62$, big) were also observed between the groups for HW%, with all pairwise comparisons significant at $p < .001$, revealing the superiority of HW% of the higher-quality teams than medium and lower-quality teams.
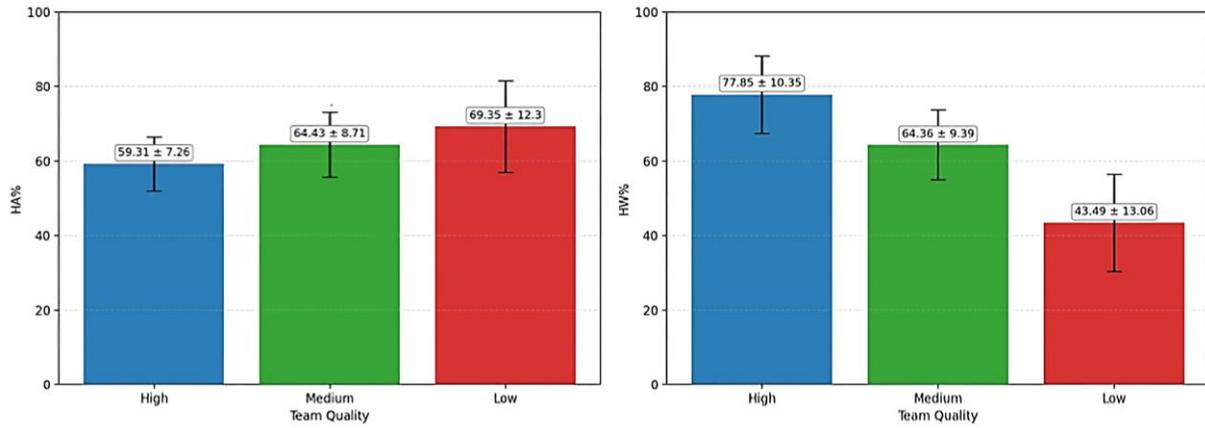
Figure 3. Comparisons in HA% and HW% between high, medium and low-quality groups.
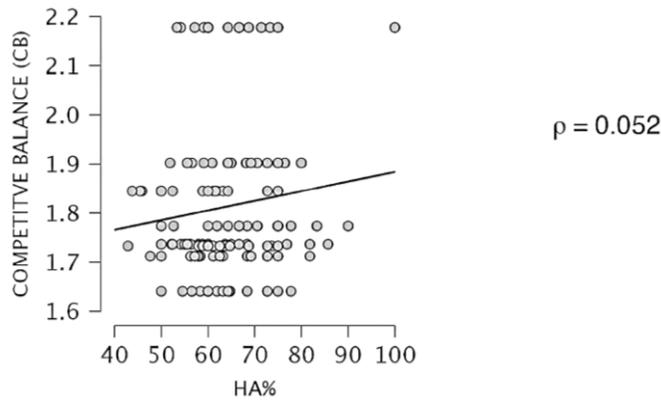

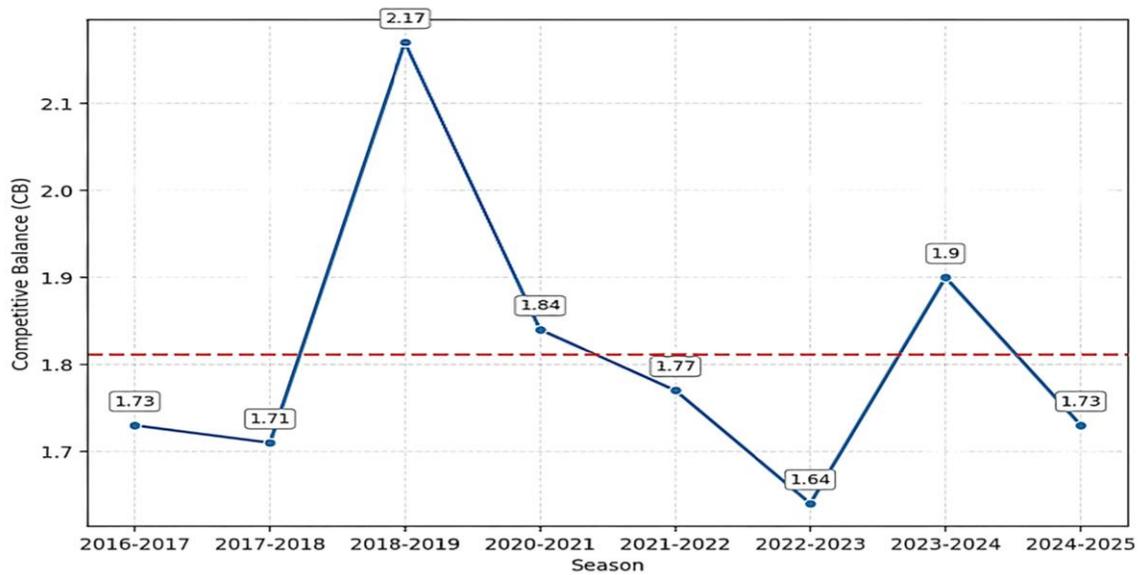Figure 4. Association between HA% and CB in EuroLeague.

Figure 5. EuroLeague CB by season.

A Spearman rank-order correlation (Figure 4) was used to examine the relationship between HA% and Competitive Balance (CB). The correlation was small and not statistically significant (ρ = 0.052, p = .548), indicating no association between HA% and CB in the EuroLeague data. In practical terms, variation in CB does not seem to be meaningfully related to changes in HA.

Figure 5 displays the longitudinal variation of CB observed in the EuroLeague over the seasons analysed. CB showed a 10.3% effect (R^2 = 0.103; weak) for HA.

CB shows slight variation across the 8 seasons, with no major year-to-year shifts, indicating relative stability during the period. The only exception was the 2018-2019 season, which dips below the usual range but isn't different enough to suggest a regime change in parity, meaning overall league CB doesn't drastically change from one season to the next.

A multiple linear regression analysis was performed to determine whether TQ and CB predicted HA% magnitude across EuroLeague basketball seasons. Preliminary assumption testing confirmed that the data met the requirements of normality, linearity, and homoscedasticity. Multicollinearity diagnostics were within acceptable limits (VIF < 2). Bootstrapping with 5000 resamples was used to address minor non-normality in CB and to obtain bias-corrected confidence intervals.

The regression model was statistically significant, $F_{(3,131)}$ = 9.48, p < .001, explaining 17.9% of the variance in HA% (R^2 = .179, AdjR² = .160). The model's predictive accuracy was adequate (RMSE = 9.47). On average, the predicted HA% differed from the observed HA% by ± 9.47 percentage points, indicating moderate predictive accuracy. Bootstrapped coefficients confirmed the robustness of the findings, with nearly identical estimates and bias-corrected confidence intervals (Table 2).

Overall, the findings showed that TQ, but not CB, was a key factor affecting HA% in EuroLeague basketball. Compared to high-quality teams (reference group), medium-quality teams exhibited a 5.02% higher HA% (p = .007), while low-quality teams had a 10.06% higher HA% (p < .001). These results suggest that teams with lower competitive strength gain a greater home advantage. Regarding CB, the results indicated a positive but nonsignificant relationship with HA% (p = .088), implying that league balance did not systematically influence the extent of home advantage.

Table 2. Results of bootstrapped multiple linear regression examining the effects of TQ and CB on HA%.

Predictor	B (Bootstrap)	SE	*p*-Value	95% CI	
				Lower	Upper
Intercept	43.16	10.89	.003	17.82	61.25
Team Quality (Medium)	5.02	1.67	.007	1.65	8.20
Team Quality (Low)	10.06	2.15	<.001	5.98	14.38
Competitive Balance (CB)	8.96	5.98	.088	-1.07	23.05

Note. B (Bootstrap) – Bootstrapped unstandardized coefficient; SE – Standard error; p – significance level; 95% CI – 95% confidence intervals.

DISCUSSION

This study aimed to quantify the extent of HA in EuroLeague basketball and to evaluate how the quality of teams and the championship's CB influence and predict this phenomenon. Our analysis showed that EuroLeague teams won 62.9% of their home games (HW%), consistent with previous research (Jiménez,

Valido, & Jiménez, 2025; Kulenović & Demšar, 2024). The home court advantage, measured by both HA% and HW%, peaked during the 2021-2022 season and was lowest during the post-pandemic 2020-2021 season. Meanwhile, HA remained relatively stable across other seasons, maintaining a consistent overall trend.

The significant decline in HA during the 2020–21 season can be linked to disruptions caused by pandemic restrictions, especially the absence of spectators. Research indicates that the lack of fans significantly reduces HA in European basketball (Alonso et al., 2022; Alonso et al., 2024a; Durmuş & Gülü, 2022; Paulauskas, Stumbras, Coutinho, & Figueira, 2022). While factors such as technical and tactical elements, familiar court routines, and travel fatigue remained steady contributors to HA, the limited or non-existent attendance of fans, along with their psychological influence on players, coaches, and referees, seems to be the main reason for this decline.

On the other hand, the rebound in HA during the 2021-22 season likely reflects the return of spectators to arenas, the reestablishment of home routines, and fewer disruptions compared to the pandemic season. These factors restored many of the advantages that home teams usually enjoy, bringing HA back toward pre-pandemic levels. Notably, the impact of spectators was especially significant, as players had been without fans for a long period, a trend also seen in football (Schank, Voigt, & Orthey, 2024). However, Leite, Silva, and Almeida (2025) suggested that fluctuations in home advantage during COVID-19 were more closely related to team performance than to the absence of a crowd, indicating that changes in home advantage may differ across various leagues.

The CB in the EuroLeague has shown a nonlinear evolution, with significant imbalance observed during the 2018–2019 season, followed by a gradual stabilization in subsequent years. While no statistically significant correlation was found between CB and HA%, seasons marked by greater inequality, such as 2018–2019 (CB = 2.17), tended to show a higher HA% (68.53%). This suggests that dominant teams were better able to leverage home conditions to maintain their superiority. In contrast, during seasons with greater parity, such as the 2022–2023 season (CB = 1.64), where 42% of regular-season games were decided by two possessions or fewer (Foteinakis, Pavlidou, & Stavropoulos, 2024), the level of HA% did not show a notable decline. This indicates that improved team balance and tactical homogenization across clubs did not necessarily reduce the relative impact of HA. Other contextual factors, such as fan presence, scheduling, officiating, and travel, may have a greater influence on HA.

The significant decline in CB during the 2018–2019 season can likely be linked to structural and organizational factors, including the stabilization of the 16-team round-robin format and the presence of long-term licenses that ensure participation for top clubs. Basketball attracts audiences because of its unpredictable outcomes. According to Pivovarnik, Lamb, Zuber, & Gandar (2008), low CB results in decreased fan engagement, which then lowers revenue from spectators and viewers, leading to minimal market value (Brandes & Frank, 2006). Therefore, a certain level of competitive uncertainty is vital across all sports (Brandes & Frank, 2006). The narrowing gap between top and bottom teams, as shown by the relatively stable CB, indicates a more dynamic and unpredictable competition. This trend is encouraging for the league, as it creates more exciting matchups and reduces predictability in team hierarchies.

The regression analysis examining the factors influencing HA in the EuroLeague showed that TQ is a significant predictor of HA, while CB is not. Specifically, lower-quality teams exhibited significantly higher HA than medium and high-quality teams. This suggests that the contextual and psychological factors associated with the home setting particularly benefit less competitive teams. These findings align with previous research

in elite European basketball, which has identified TQ as a key moderator of home performance (Alonso et al., 2023; Alonso et al., 2024b; Pojskić, Šeparović & Užičanin, 2011). Additionally, earlier studies (Pollard & Gómez, 2014) indicate that lower-ranked teams benefit more from situational home factors, such as crowd influence and travel comfort, and depend more heavily on familiar environments to secure victories. Factors like limited resources to handle travel-related stress and other challenges that can impair away performance may explain these patterns among lower-quality teams (Alonso et al., 2024b). In contrast, higher-quality teams, which tend to have more consistent performance and superior skills, tactics, and overall quality, appear less reliant on the home environment to maintain their competitive advantage (Alonso et al., 2023). Ultimately, differences in team quality seem to outweigh home-court advantage, as stronger teams are more likely to win both at home and away (Alonso et al., 2022).

In contrast, the non-significant relationship between CB and HA indicates that changes in league parity do not directly affect home-court advantage. The correlation analysis conducted in this study also supports this conclusion. Evidence from other European basketball leagues shows that CB generally influences overall league unpredictability rather than home performance trends across seasons (Pollard & Gómez, 2013). The persistent presence of HA, even as competitive levels vary, suggests that this phenomenon stems from the structural and situational dynamics of the EuroLeague, including officiating tendencies, fan engagement, and travel demands, rather than fluctuations in competitive equality from one season to the next.

From an applied perspective, the findings have important implications for coaches, analysts, performance staff, and team stakeholders. The observation that lower-tier teams benefit more from home conditions highlights the importance of situation-specific tactical preparation, especially for away games where they lose their home-court advantage. The persistence of a significant HA, even in well-balanced competitive environments like the EuroLeague, emphasizes the need for comprehensive preparation for away games. Coaches should design training and tactical routines that simulate high-pressure away environments, focusing on building psychological resilience and adaptability to crowd influence and officiating dynamics. Additionally, recognizing that the home advantage is more affected by situational and psychological factors than by the level of competition reinforces the importance of integrating sports psychology, crowd management, and officiating research into performance optimization and season planning at the EuroLeague level.

The generalizability of these findings is limited by the study's focus solely on the EuroLeague and by unmeasured factors known to influence HA. To enhance external validity, future research should examine various leagues and geographic contexts to determine if the findings remain consistent. Additionally, employing multilevel models that include psychological, tactical, and situational factors could offer a more complete understanding. Combining contextual data—such as crowd density, travel fatigue, and officiating tendencies—with performance metrics would help clarify the underlying mechanisms of HA in elite basketball. This approach is particularly important given the sport's strategic evolution, including the documented rise in three-point shooting in modern basketball (Foteinakis & Pavlidou, 2024, Karamousalidis et al., 2025), and its impact on HA.

CONCLUSION

This study used a dataset of EuroLeague home and away game results from the 2016-17 to 2024-25 seasons. The main aim was to measure the size of the home advantage (HA) in EuroLeague basketball and, second, to analyse how TQ and CB affect HA. EuroLeague teams won about 62.9% of their home games, showing a steady home advantage. The biggest change in this trend occurred during the COVID-19-affected

2020-2021 season, when HA dropped sharply due to spectator restrictions. However, HA bounced back in the 2021-2022 season with fans returning, highlighting the important role of crowd presence in shaping game results.

Regression analysis showed that TQ is a key factor influencing HA, with lower-quality teams experiencing greater HA. This is probably because they rely more on psychological and environmental factors. In contrast, CB did not significantly predict HA, suggesting that differences in league parity across seasons do not significantly affect the home-court advantage. HA in the EuroLeague appears to be a consistent, contextually rooted feature, influenced more by psychological factors, officiating patterns, and logistical factors than by shifts in league competitiveness. Future research could explore combining performance data with other contextual metrics and officiating trends to understand better the mechanisms underlying home advantage in top-tier European basketball.

AUTHOR CONTRIBUTIONS

P.F.F: conceptualization, data collection, data analysis, formal analysis, investigation, methodology, project administration, supervision, validation, visualization, writing –original draft, writing – review & editing. S.P: data collection, data curation, methodology, writing – original draft, writing –review & editing. G.K: data collection, validation, writing –review & editing, N.Z.: formal analysis, investigation, methodology, writing – review & editing, T.S.: data collection, data curation, writing –review & editing, C.K.: methodology, writing – review & editing, A.A.: data collection, validation, visualization, writing – review & editing, A.C.: conceptualization, methodology, supervision, writing – review & editing. All authors have read and agreed to the published version of the manuscript

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No potential conflict of interest was reported by the authors.

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