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Performance Profiles Differentiating Winning and Losing Teams in the 2025 FIBA 3x3 Asia Cup

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Abstract. 33 basketball is competing at the Olympics, but the performance factors are not clear. Structure limitations such as fewer players, 12 seconds shot clock and two-point field goals valued at one point indicate that success factors may differ from 55 basketball. We recorded all eight knockout games of the 2025 FIBA 33 Asia Cup video observation. Core statistics and efficiency (offensive and defensive ratings) were also recorded. Independent t-tests and Linear Mixed Models were used, Cohen's d was reported. Two-point attempts did not differ significantly between winners and losers. Winners reached the free-throw line more often (3.75 1.28 vs 2.25 1.83, p = 0.045, d = 1.10) and they played better defensively (d = 0.79), assists (d = 0.75), steals (d = 0.97) and turnovers (d = 0.82). Efficiency measures are also consistent with these results: winners received higher offensive ratings (d = 1.36), allowed less points per possession (d = 1.55) and recovered more balls per possession (d = 1.21). Success in elite 33 basketball is driven less by the frequency of long range shooting and more by interior pressure, disciplined possession, and defensive disruption.

Keywords: 3x3 basketball, performance analysis, game statistic, FIBA 3x3 Asia Cup

1. Introduction

33 basketball has evolved from a recreational version of the game of basketball to a sport of athletics and has been the subject of a very rapid change since the Tokyo 2020 Games. With the introduction of the game of 33 basketball in the Olympic games, entry paths to 33 competition, professional circuits and continental championships have accelerated [1]. With this institutional change there has also been demand for performance models based on the empirical data rather than on extrapolations from 55.The question remains however: what distinguishes winners from losers in elite 33 competition?

The literature presents only partial results. International tournaments show differences in game statistics and phase behavior [2], while other studies have focused on tactical aspects (such as screening before perimeter shots [3]. While these studies provide useful preliminary direction, they do not provide a complete performance framework that combines shot selection patterns with efficiency measures. One-point attempts, two-point attempts, and free throws have little relevance for elite Asian countries.

This gap is more evident when looking at the structure of 33 and 55 basketball games. Matches are played half-court with 3 players per team, 12 seconds shot clock and a scoring system that gives

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one point for inside shots and two points for outside shots [4,5]. Possessions are shorter, spatial coverage is smaller and transitions occur almost immediately after rebounds or turnovers. Because of these constraints, the value of each possession can be higher than in full-court games. Performance factors found in 55 games, such as rebounding dominance or 3 point shooting volume, are not predictive.

Advanced efficiency measures also complicate the problem. In 55 basketball, offensive rating and effective field goal percentage are well-known to distinguish winning teams [6-8]. It is still unclear whether these measures have similar power for 33 basketball, where 33 basketball has less possessions and longer game duration. First, free throw frequency and ball recovery may play a greater role in compressed formats [2]. However, integration of box-score and possession-adjusted variables is not available.

We investigated performance profiles from the knockout stage of the 2025 FIBA 33 Asia Cup, with high tactical discipline and high outcome pressure. Two goals of this study were to compare shot selection patterns (one point, two points and free throws) between winning and losing teams, and to test game statistics along with efficiency indicators to identify the most strongly related variables to victory. Rather than assume higher-value two-point shooting automatically gives rise to better win, we investigated whether interior offensive aggression and possession efficiency could explain better win. By focusing on high stakes elimination matches, we aim to capture performance behavior when strategy is clear and execution precision are important. In this way we aim to refine the evidence for 33 basketball and contribute to a context sensitive model of elite performance.

2. Materials and methods

2.1. Participants and data source

The dataset contains all eight knockout stage matches (quarterfinals, semifinals, final) during the 2025 FIBA 33 Asia Cup in Singapore. By focusing on elimination games, we investigated performance behavior under increased competition, where tactical execution is more outcome driven and less experimental. All games were recorded as publicly available high-definition clips on the official FIBA YouTube channel.Openly available broadcast material satisfies the standards for observational sports performance studies. In accordance with the Belmont Report and similar ethical guidelines for secondary analyses of public data, no direct interaction with participants was involved, therefore formal approval and informed consent were unnecessary.

2.2. Data collection and variables

The notation was applied to both traditional box score variables and possession variables. The definitions were strictly strictly enforced under the official FIBA 33 rules. Field-goal attempts outside the arc were coded as 2PA and attempts inside the arc were coded as 1PA. Free throw attempts (FTA) were recorded when awarded after defensive fouls. For each team in each match, the following statistics were used: successful attempts of 2PA, 1PA and FTA, offensive and defensive rebounds, assists, turnovers, steals and blocked shots, representing the key performance components traditionally associated with possession starting, continuing, and ending of basketball. Video analysis was performed using LongoMatch (version 1.3). Footage was reviewed at standard playback speed, with slow motion and frame-by-frame advancement to verify key events such as shot location, rebound attribution, turnover causation and turnovers were minimized. This method

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minimized classification errors, especially in high-tempo sequences typical of 33 competition, where rapid transitions can obscure event boundaries.

In addition to primary statistics, seven performance indicators were calculated to summarize results in terms of possession volume according to the formulae described in basketball analytics research [6-10], [4,7,10]. Ball Possessions = Field Goals attempted + offensive rebound + turnover + (0,4 Free Throws attempted) + (Points Scored / Ball Possessions) + (Points Allowed / Ball Possessions) + (Points Allowed / Ball Possessions) + Effective Field Goal Percentage (EFG%) = Total Field Goals made + (0,0 Two-Pointers made) + Total Field Goals Attempted; Offensive Rebound Percentage (OREB%) = Offensive rebound + Opponent's Defensive rebound); Recovered Balls per Possession (RB/Poss) = Steals + Blocked Shot + Opponent Turnover / Ball Possessions; Free Throw Rate (FTr) = Free Throws made / Total Field Goals Attempted. Due to the small number of free-throw events typical in 33 matches, teams with zero attempts were treated as missing data for the free-throw percentage calculation. This prevented the effects of the division by zero. By combining absolute frequency with possession-adjusted measures, the analysis captured not only the actions that occured but also the efficiency with which they were performed in the condensed game.

2.3. Reliability

Notational analyses depend on observer judgment, and a reliability test was needed to ensure stability. The primary analyst coded 20% of the sample after 2 weeks. We chose to avoid recall bias and preserve familiarity with the data. The Intraclass Correlation Coefficients (ICC) for all primary variables ranged between 0.92 and 0.98. Inter-observer reliability was assessed using the same randomly selected 20%. A second analyst trained under the same operational definition coded the footage independently. The ICC values ranged from 0.89 to 0.94, representing strong consistency among observers. Any differences were reviewed together and consensus was obtained by video re-examine. The following procedure was applied to ensure that comparisons did not reflect performance differences rather than variability.

2.4. Statistical analysis

The descriptive statistics are mean standard deviation (M SD). Inferential tests assume normality and homogeneity of variance using Shapiro–Wilk and Levene's tests. No significant violations were observed. Comparisons between winning teams and losing teams for primary game variables were performed using independent sample t-tests. Effect sizes were calculated using Cohen's d interpreted as |d| 0.2 (trivial), 0.2 |d| 0.5 (small),0.5 |d| 0.8 (moderate) and |d| 0.8 (large) [11]. Ninety percent CI (90% CI) were computed to provide precision estimates [12]. Since teams could play multiple matches and performance nested in games, Linear Mixed Models (LMMs) were used for seven derived performance indicators (ORtg,DRtg, EFG%,OREB%, RB/Poss, and FTr). Game Outcome (winning vs. losing) was specified as a fixed effect, Match and Team were included as random intercepts for contextual and repeated measure variance. Models were fitted using Restricted Maximum Likelihood (REML) estimation in lme4 package (version 1.1-35.1) in R (version 4.5.2). Effect sizes of fixed effects were obtained using the emmeans package.

Residue distributions were visualized using Q–Q plots and residual-versus-fitted value plots to confirm normality assumptions and homoscedasticity assumptions. No systematic deviations were observed. To study shooting trends in the tournament, Pearson's chi-square test was used to investigate whether the distribution of shot types (2PA, 1PA, FTA) varied across the eight matches.

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Relationship between one-point attempts and free throw attempts was also evaluated by Pearson correlation coefficient (r).Statistical significance was = .05.

3. Results

Comparisons revealed inequal distribution of performance among variables. Some shooting measures seemed identical between winged teams and loser teams, but possession measures showed a more different distribution. Collectively, we conclude that outcomes differed not only depending on shooting frequency, but also on the start, prolongation and end of possessions.

Table 1. Comparison of game-related statistics between winning and losing teams in the 2025 FIBA 3x3 Asia Cup

Variable	Winning Team	Losing Team	p-value	Cohen's d (90% CI)	Interpretation
Two-point attempts	10.63 ± 2.93	11.50 ± 4.84	.668	0.21 (-0.65, 1.07)	Trivial
One-point attempts	17.63 ± 7.31	13.50 ± 5.16	.213	0.64 (-0.26, 1.54)	Moderate
Free throw attempts	3.75 ± 1.28	2.25 ± 1.83	.045	1.10 (0.21, 1.99)	Large
One-point FG%	0.60 ± 0.15	0.56 ± 0.15	.505	0.27 (-0.39, 0.93)	Small
Free throw%	0.56 ± 0.15	0.52 ± 0.20	.505	0.24 (-0.36, 0.84)	Small
Offensive rebounds	6.00 ± 4.24	4.38 ± 2.97	.350	0.45 (-0.37, 1.27)	Small
Defensive rebounds	10.75 ± 2.55	8.13 ± 3.94	.103	0.79 (-0.10, 1.68)	Moderate
Assists	3.25 ± 1.04	1.88 ± 2.42	.128	0.75 (-0.15, 1.65)	Moderate
Turnovers	3.50 ± 1.93	5.50 ± 2.78	.093	0.82 (-0.08, 1.72)	Large
Steals	2.25 ± 1.58	0.88 ± 1.13	.056	0.97 (0.06, 1.88)	Large

Note: M = Mean; SD = Standard Deviation; CI = Confidence Interval. Bold denotes statistical significance (*p* < .05). Cohen's *d* interpretation: <0.2 (trivial), 0.2–0.59 (small), 0.6–1.19 (moderate), ≥1.2 (large). Free throw% for teams with zero attempts is treated as missing data.

Table 2. Comparison of derived performance indicators using Linear Mixed Models

Metric	Winning Teams (Mean ± SD)	Losing Teams (Mean ± SD)	Mean Difference	% Difference	P-value (LMM)	Cohen's d [90% CI]	Effect Size Interpretation
Number of Possessions	31.850 ± 2.608	29.750 ± 4.418	2.100	7.06%	0.291	0.62 [0.04, 1.19]	Moderate
Offensive Rating	0.565 ± 0.083	0.470 ± 0.060	0.095	20.21%	0.034	1.36 [0.72, 1.99]	Large
Defensive Rating	0.458 ± 0.111	0.617 ± 0.108	-0.159	-25.77%	0.015	-1.55 [-2.20, -0.89]	Large
Effective Field Goal %	0.448 ± 0.078	0.408 ± 0.107	0.040	9.80%	0.387	0.44 [-0.18, 1.05]	Small

DOI: 10.54254/2753-7048/2026.32367

Table 2. (continued)

Offensive Rebound %	0.216 ± 0.136	0.380 ± 0.124	-0.164	-43.16%	0.029	-1.27 [-1.90, -0.64]	Large
Recovered Balls/Possession	0.342 ± 0.087	0.218 ± 0.114	0.124	56.88%	0.042	1.21 [0.57, 1.84]	Large
Free Throw Rate	0.119 ± 0.065	0.066 ± 0.040	0.053	80.30%	0.072	1.05 [0.43, 1.66]	Large

Note: LMM = linear mixed model, M = mean, SD = standard deviation. Bold indicates statistical significance (*p* .05). Cohen's *d* interpretation: 0.2 (trivial), 0.2–0.59 (small), 0.6–1.19 (moderate), 1.2 (large). Negative *d* indicates winning teams.

Table 3. Chi-square test of independence for shot type distribution

Test Type	Value	Degrees of Freedom	Asymptotic Significance (2-sided)	Test Type	Value
Pearson Chi-Square	18.573	14	.182	Pearson Chi-Square	18.573
Likelihood Ratio	18.026	14	.206	Likelihood Ratio	18.026
Number of Valid Cases	474	-	-	Number of Valid Cases	474

Note: χ^2 = Chi-square test statistic; df = degrees of freedom. Asymptotic Significance represents the p-value for the test of independence between game identity and shot type distribution.

3.1. Primary game-related statistics

The shot selection pattern was distinct: The number of two-point attempts was not different between winning and losing teams (10.63 2.93 vs. 11.50 4.84, p = .668, d = 0.21), suggesting that the number of long-range shots did not distinguish winning teams at this level (Table 1), both groups showed similar willingness to choose the higher-value scoring option. The winning teams had a higher number of free-throw attempts than losing teams (3.75 1.28 vs. 2.25 1.83) with statistically significant variance (p = .045) and large effect size (d = 1.10 (95%CI = 0.25, 1.99). Given the number of possessions typical in 33 games, even small differences in free-throw opportunities can lead to significant changes in scoring possibilities.

In addition to shooting frequency, successful teams had higher success rates in some possession stability factors.fensive rebounds (10.75 2.55 vs 8.13 3.94; d = 0.79), assists (3.25 1.04 vs 1.88 2.42; d = 0.75); steals (2.25 1.58 vs. 0.88 1.13; d = 0.97) had moderate to large effects, while turnovers were less frequent among the winning teams (3.50 1.93 vs 5.50 2.78; d = 0.82; although some of these comparisons were not statistically significant, consistent and substantial differences suggest more effective possession control in successful teams. There were no significant differences in one-point shooting percentage, free throw percentage, offensive rebounds or blocked shots (all p > .05). Thus accuracy alone did not explain the variations in results; rather, the number and quality of opportunities created in possessions seemed more important.

DOI: 10.54254/2753-7048/2026.32367

3.2. Derived performance indicators (Linear Mixed Models)

Linear Mixed Models were used to investigate the nested structure of the data, and the teams participated in different matches. Performance per possession was different (Table 2). Winning teams had high OFs (0,565 0.083 vs 0.470 0.060) (0.21% relative increase ($p = .034$, $d=1.36$). Points per possession were lower for winning teams (0,458 0.111 vs. 0.667 0.108) ($p = .015$, $d=1.55$). This suggests that differences are more pronounced when compared to possession frequency rather than absolute numbers. Recovered Balls per possession were 56.88% higher for winning teams ($p = .042$, $d= 1.21$), suggesting that more defensive disruptions lead to more scoring opportunities. Given average of around 30 possession per team, even slight improvement in recovery rates can have significant competitive impact.

Offensive rebound percentage favors losing teams (0.380 0.124 vs 0.216 0.136), 43.16% relative difference ($p = .029$, $d = 1.27$) contrary to 55 expectations Effective field goal percentage ($p = .387$) and Free Throw rate ($p = .072$) are not statistically significant (though Free Throw rate has large effect size ($p = 1.05$)), which is practical in the sample size limitations. possession adjusted measures show that the difference between results was more influenced by efficiency and defensive actions than individual shooting precision.

3.3. Shot selection distribution and correlation

A chi-square test was performed to investigate the variation in offensive behavior during the knockout stages by looking at the relation between game identity and shot type distribution. No significant association was found between game identity and shot type distribution ($2(14) = 18.57$, $p =.182$), suggesting the same shot selection pattern during the tournament stage. The number of shot types used in tactical strategies was constant during all matches. Strong positive correlation was found between one-point shots attempts and free throws attempts ($r = .72$, $p =.008$), suggesting that teams making more close attempts tend to draw more fouls. This suggests that offensive plays near the basket often lead to defensive contact and thus the frequency of penetration leads to fouls.

4. Discussion

This paper sought to establish the performance characteristics of successful teams from poor teams in the knockout stage of elite 3x3 basketball. Instead of supporting a simple scoring-based view, it suggests a complex competition influenced by generation, control and end of possessions. Analysis of the statistics in the context of the unique time and space constraints of the 3x3 format shows that the trends remain consistent.

4.1. Free throws as a marker of offensive intent

Free-throw attempts were the most important primary factor in distinguishing games, especially balanced games. Team fouls and additional free throws were considered as factors that could improve the game differentiation [15]. Victorious teams visited the free-throw line more frequently ($d = 1.10$) than losing teams. In a game where possessions happen in 12 seconds and chances for scoring are limited, fouling can serve many other purposes than scoring points, disrupting defense, setting pace, and decreasing the risk of fast breaks.

Probabilistically, possession that ends with free throws tends to produce higher expected output than contested field goal attempts. Previous tournament analyses [2] mentioned this trend, but we now have data that confirm this trend in an elite Asian context. Csataljay et al [13]. found that

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number of successful free throws and free throw percentage influence scoring output, which determines performance in postseason play. Malarranha et al [10]. pointed out that free throws are vital to score in the final 5 minutes of a closely contested game. Strong correlation between one point shots and free throw attempts (r = .72) reveals the mechanism: driving into the paint seems to be the main method to draw fouls, suggesting aggressive play near the basket, rather than the number of perimeter shots, plays plays an important role in offensive effectiveness in top 3x3.

This pattern is consistent with basketball research. In 5x5, we found that short distances are essential in close games [14]. In the condensed 3x3, with tight score differentials and games ending 21 points or earlier, contact is also important. Thus, we see that offensive strategies should not focus on a frequency of two-point shot attempts but rather on consistently challenging defenses near the basket.

4.2. The two-point shot: necessary but not sufficient

Given the twofold scoring value of long range shots in 3x3, one would expect to see high numbers of attempts and conversions of two-point shots from the winning teams. However, the data does not confirm that this is not true, since both frequency and effectiveness of attempts were identical across outcomes. In fact, it is likely that perimeter shooting is a fundamental skill needed in this game. We found that the successful teams scored better shots due to better teamwork, allowing them to exploit more open scoring opportunities without a strong defensive pressure. For example, 3x3 basketball defensive strategies often favor shots outside the arc and miss the relatively lesser value one-point shots. What distinguishes the successful use of the two-point shot is not its frequency, but rather how often it is taken. In high-level settings, outside shots are often driven by drives-and-kick maneuvers, transitional mismatches, or screens for open looks. While no detail of play types is given, the difference in shot volume suggests quality of shot creation is more important than quantity. The small preference of successful teams for one-point shots suggests a versatile offensive strategy that forces defensive breakdowns from inside out. In fact, long-range shooting is regarded as a complementary strategy. Although perimeter shooting opens the gap, inside game appears to have the advantage.

4.3. Possession control and defensive activity

Ball possession and key assists significantly influence match results [16]. Teams with more secondary assists strategically create space in high expected points areas, leading to better shot quality. Quantity of secondary assists is one of the key indicators of ball movement [17]. Possessing the ball lays the foundation for scoring, while key passes translate possession into points, minimizing players' physical strain and enhancing scoring opportunities. Possession-related measures together clarify the winning criteria. Successful teams have advantages in defensive rebounding, assists, steals, and turnovers, suggesting control of possession sequences is more important than sporadic scoring surges in short format invasion sports.

Defensive rebounds in 3x3 basketball stop opponent attacks and often start quick offensive transitions due to continuous-flow nature of the game. Teams that had good 2-point and free-throw shooting accuracy in Under-16 male junior level tournaments had better fouls and turnovers, less personal fouls and turnovers, more assists, steals and defensive rebounds [18]. Assumptions may seem small, but they signify cohesive ball circulation under time constraints. Combined with lower turnover frequency, the difference in steals and turnover frequency indicates that teams used defensive pressure while maintaining offensive composure.

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The efficiency results further support this explanation. Significant effect sizes were observed in offensive and defensive rating, suggesting that competitive advantage depends more on per possession effectiveness than raw totals. Winners also had higher Recovered Balls per possession (stealing, blocks, forced turnover). Each team has 30 possessions per game, and even slight variations in the number of recoveries can lead to crucial scoring opportunities.

4.4. Reconsidering offensive rebounding

The most unexpected result was offensive rebounding. Losing teams had higher offensive rebound percentage. In typical 5-on-5 basketball, having offensive boards usually leads to more chances of winning because more points were scored. In 3-on-3 play, the opposite is true. With less players on the court and no defensive safety net, putting multiple players in offensive rebounding increases the risk of fast counterattack. In half-court, transitions happen quickly after changing possession.There is little recovery time. Our results suggest that winning teams prefer maintaining defensive stability over aggressive pursuit of rebounds. This is consistent with previous studies that showed that offensive rebounding effectiveness is strongly affected by player positioning [19]. In 3-on-3 basketball, with limited floor coverage, assigning two players in contest rebounds may leave the winning teams numerically vulnerable if defensive retreats occur. Thus, the lower offensive rebound rate observed in winning teams seems to be a strategic adjustment rather than a deficit. This subtle but important sign shows that in condensed formats, managing risks may preced over maximising possessions.

4.5. Integrating findings into practice

The statistical patterns suggest that training approach is different for practitioners.Rather than drills, the data support a combination of tactical approaches. Offensive training should simulate contact situations that motivate drawing fouls. Defensive training should prioritize anticipatory positioning to turn stops into transitions and vice versa. Decision efficiency under time pressure is essential, especially in terms of reducing turnovers. The limited scope of the study (only eight knockout games in one tournament), makes it hard to generalize. In addition, spatial tracking or play type categorization makes micro-tactical analysis irrelevant. Expanding the analysis to different competitions and adding positional tracking would enable us to better understand dynamic interactions between penetration, spacing, and defensive rotations. Nevertheless, for all these limitations, we have presented a coherent performance model supported by evidence.

5. Conclusion

The results of the knockout phase of the 2025 FIBA 33 Asia Cup show a deviation from the assumptions made in the 55. The difference is that the winning team did not get more 2point shots than expected. The winning team did not get more than a few free throws, but kept pushing inside, capitalized on free throws and tended to have more possessions. The winning teams shared common characteristics regarding control: less turnovers, more defensive recoveries, more balanced scoring per possession, and more offensive rebounding. All these factors together contributed to higher offensive productivity and lower defensive concession rates. However, numerical metric may differ by team strategy and opponent quality. Therefore, a more objective interpretation of the data and experience from the field are required for understanding the key success factors in 33 basketball.

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The results theoretically contribute to the literature by highlighting the structural uniqueness of 3x3 basketball. Practically, they indicate that elite competition readiness should prioritize foul generation, defensive positioning with transition awareness and controlled possession control. Nevertheless, additional multi-tournament studies are needed, but this work establishes a performance framework based on evidence that mirrors the demands of top 3x3 competitions. The analysis of variances between the statistical variables has tactical and situational relevance to the goal of a detailed understanding of success in this dynamic format.

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References

[1] FIBA. FIBA Introduction basketball 3x3 [Internet]. [cited 2018 Jul 20]. Available from: http: //www.fiba.basketball/3x3/introduction
[2] Conte, D., Straigis, E., Clemente, F. M., et al. Performance profile and game-related statistics of FIBA 3x3 Basketball World Cup 2017. Biology of Sport. 2019; 36(2): 149–154.
[3] Iba´ñezSJ, Garcı´a-Rubio J, Rodrı´guez-Serrano D, Feu S. Development of a knockout competition in basketball: a study of the Spanish Copa del Rey. Front Psychol. 2019; 10: 2457.
[4] Mikołajec, K.; Gabryś, T.; Gryko, K.; Prończuk, M.; Krzysztofik, M.; Trybek, G.; Maszczyk, A. Relationship among the change of direction ability, sprinting, jumping performance, aerobic power and anaerobic speed reserve: A cross-sectional study in elite 3 × 3 basketball players. J. Hum. Kinet. 2023, 85, 105–113.
[5] FIBA. Rules of the game. [cited 2018 Jul 20]. Available from: http: //www.fiba.basketball/3x3/rules
[6] Conte D, Tessitore A, Gjullin A, Mackinnon D, Lupo C, Favero T. Investigating the game-related statistics and tactical profile in NCAA division I men's basketball games. Biol Sport. 2018; 35(2): 137–43.
[7] Gómez MA, Lorenzo A, Barakat R, Ortega E, José M P. Differences in game-related statistics of basketball performance by game location for men's winning and losing teams. Percept Mot Skills. 2008; 106(1): 43–50.
[8] Çene E. What is the difference between a winning and a losing team: insights from Euroleague basketball. Int J Perform Anal Sport. 2018 Jan 2; 18(1): 55–68
[9] Scanlan TA, Teramoto M, Delforce M, Dalbo JV. Do better things come in smaller packages? Reducing game duration slows game pace and alters statistics associated with winning in basketball. Int J Perform Anal Sport. 2016; 16(1): 157–7
[10] Malarranha J, Figueira B, Leite N, Sampaio J. Dynamic modeling of performance in basketball. Int J Perform Anal Sport. 2013; 13(2): 377–87.
[11] Hopkins WG, Marshall SW, Batterham AM, Hanin J. Progressive statistics for studies in sports medicine and exercise science. Med Sci Sports Exerc. 2009 Jan; 41(1): 3-13.
[12] Hopkins WG. A spreadsheet to compare means of two groups. Sportscience. 2007; 11: 22–4.
[13] Csataljay G O'Donohue P, Huges M, Dancs H. Performacne indicators that distinguish winning and losing teams in basketball. Int J Perf Anal Sport. 2009; 9: 60–66.
[14] Garcia J, Ibanez SJ, De Santos RM, Leite N, Sampaio J. Identifying basketball performance indicators in regular season and playoff games. J Hum Kinet. 2013; 36: 161–168.
[15] Csataljay G, James N, Hughes M, Dancs H. Effects of defensive pressure on basketball shooting performance. Int J Perform Anal Sport. 2013; 13(3): 594-601.
[16] Chen K, Memmert D, Garnica Caparrós M. The emerging basketball discipline: unpacking game outcomes in the 3×3 basketball professional league based on performance indicators and contextual variables. Int J Perform Anal Sport. 2024; 24(4): 314–330.
[17] Supola B, Hoch T, Baca A. The role of secondary assists in basketball – an analysis of its characteristics and effect on scoring. Int J Perform Anal Sport. 2022; 22(2): 261-276.
[18] Lorenzo A, Gomez MA, Ortega E, Ibanez SJ, Sampaio J. Game related statistics which discriminate between winning and losing under-16 male basketball games. J Sport Sci Med. 2010; 9: 664–668.
[19] Csataljay G, James N, Hughes M, Dancs H. Analysis of influencing factors behind offensive rebounding performacne in elite basketball. Int J Sports Sci Coach. 2017; 12: 777–781.

DOI: 10.54254/2753-7048/2026.32367

[20] Dong R, Lian B, Zhang S, Zhang M, Huang SZY, O'Donoghue P. Addressing opposition quality in basketball performance evaluation. Int J Perform Anal Sport. 2021; 21(2): 263–276.