Article Classification:
Research article

OPPONENT QUALITY ASSOCIATED WITH ATTACKING TYPE DISTRIBUTION AMONG SUCCESSFUL SCORING POSSESSIONS IN COLLEGIATE BASKETBALL

Taiki Miyazawa[1], Taiga Kato[2], Mirai Mizutani[3], Daisuke Ichikawa[4]

[1] Department of Sports and Physical Education, Faculty of Wellness, Shigakkan University, Obu, Japan
[2] Graduate School of Wellness, Shigakkan University, Obu, Japan
[3] Department of Sports and Physical Education, Faculty of Wellness, Shigakkan University, Obu, Japan
[4] Department of Biomedical Engineering, Faculty of Science and Engineering, Toyo University, Kawagoe, Japan

OPEN ACCESS

Submitted: 19 March 2026
Accepted: 06 August 2026

ORCID
Taiki Miyazawa
https://orcid.org/0000-0001-8966-6535
Daisuke Ichikawa
https://orcid.org/0000-0003-2987-1689

Cite this article as:
Miyazawa, T., Kato, T., Mizutani, M., Ichikawa, D. (2026). Opponent quality associated with attacking type distribution among successful scoring possessions in collegiate basketball. *Journal of Applied Sports Sciences*, *10*(2), 16 − 27.
DOI: *10.37393/JASS.2026.10.02.2*

This work is licensed under Attribution-Non Commercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

ABSTRACT

This study examined the association between opponent quality and the distribution and structural characteristics of attacking types among successful scoring possessions in collegiate basketball. A total of 4,309 made field goals from 97 games in the 2022 Kansai Intercollegiate Basketball League Division 1 were analyzed. Scoring possessions were classified into four attacking types: immediate attacks (<3 s), primary fast breaks (PFB), secondary fast breaks (SFB), and set offenses (SO), according to tactical characteristics, possession duration, and numerical situations. Opponent quality was defined relative to each team's final league standing. Chi-square tests of goodness of fit and independence were conducted, and attacking time, number of attacking players, and number of completed passes were compared between opponent groups.

SO accounted for the largest proportion of successful scoring possessions. Attacking type distribution was significantly associated with opponent quality ($\chi^2(3) = 84.51$, $p < .001$, Cramer's $V = 0.14$), with PFB more frequent among successful scoring possessions against lower-ranked opponents and SO more frequent against higher-ranked opponents. Possession duration during SO was longer against higher-ranked opponents ($p < .01$, $d = 0.26$), whereas completed passes during SFB were greater against lower-ranked opponents ($p < .05$, $d = 0.31$).

These findings suggest that the distribution and structural characteristics of successful scoring possessions are associated with opponent quality.

Keywords**:** *Opponent Quality, Fast Break, Set Offense, Tempo Control, Performance Analysis*

INTRODUCTION

Basketball is an invasion sport characterized by continuous transitions between offense and defense, in which tactical decision-making during games is highly dynamic and context-dependent (Ávila-Moreno et al., 2018; McGarry et al., 2002). Traditionally, performance indicators associated with game outcomes have primarily focused on game-related statistics such as field-goal percentage, rebounds, and turnovers (Gómez et al., 2008; Ibáñez et al., 2008). However, recent advances in performance analysis research have moved beyond the accumulation of isolated statistical indicators, placing greater emphasis on the structural and temporal characteristics of offensive possessions in order to achieve a more comprehensive understanding of game

dynamics (Conte et al., 2017; Evangelos et al., 2005; Matulaitis & Bietkis, 2021; Sampaio, Lago, et al., 2010).

Offensive play in basketball is generally categorized into transition phases, in which teams attempt to score before the defensive formation is fully established, and positional phases, in which teams organize their offense against a set half-court defense (Conte et al., 2017; Evangelos et al., 2005). In particular, the fast break (FB) has been conceptualized as a tactical strategy designed to exploit numerical superiority and defensive imbalance in order to generate high-percentage scoring opportunities (Evangelos et al., 2005; Garefis et al., 2007; Ortega et al., 2007). Furthermore, recent studies have distinguished between primary (PFB) and secondary fast breaks (SFB), analyzing their situational characteristics and finishing patterns (Conte et al., 2017; Evangelos et al., 2005; Odaka et al., 2008; Refoyo et al., 2009; Uchiyama, 2004). These findings suggest that FBs should not be considered a single offensive action but rather a phase-based tactical structure that unfolds progressively in response to temporal constraints and defensive organization. In addition, studies on possession duration have suggested that offensive possessions ending early in the shot clock may be associated with scoring outcomes (Gómez et al., 2013; Matulaitis & Bietkis, 2021). Therefore, possession duration can be considered an important perspective that complements tactical classifications. In other words, the distinction between FBs and set offenses (SO) should not be treated merely as a spatial or formation-based categorization, but rather as a tactical concept that inherently includes temporal constraints and the timing of offensive resolution (Courel-Ibáñez et al., 2016; Ibáñez et al., 2019).

On the other hand, the selection of offensive strategies may be influenced by external constraints, such as the opponent's competitive level. In performance analysis research, opponent quality has been reported to affect game-related statistics and tactical structures (Gómez et al., 2008; Sampaio, Lago, et al., 2010). When facing high-quality opponents, increased defensive pressure may limit transition opportunities, whereas matches against relatively lower-quality opponents may facilitate a faster game tempo and greater occurrence of transition phases (Gómez et al., 2008; Sampaio, Drinkwater, et al., 2010). However, studies examining the relationship between opponent ranking and offensive patterns—while simultaneously distinguishing between PFB and SFB and incorporating possession duration as a classification criterion—remain limited.

In particular, clarifying how the distribution of scoring offensive tactics varies with the opponent's competitive level is essential to understanding the nature of tactical adaptation in basketball. When facing higher-ranked opponents characterized by greater defensive intensity, teams may rely more heavily on structured half-court offense. In contrast, matches against lower-ranked opponents may be associated with a higher proportion of PFB due to reduced defensive pressure and increased transition opportunities. From this perspective, this study assumes that opponent ranking is associated with the distribution of scoring offensive tactics. Specifically, it is hypothesized that possessions resulting in scores against higher-ranked opponents will show a greater proportion of SO, whereas possessions against lower-ranked opponents will show a greater proportion of PFB.

Therefore, the purpose of this study was to examine the relationship between opponent ranking (higher- vs. lower-ranked groups) and the distribution of scoring offensive possessions in a university basketball league. Scoring

possessions were categorized into four tactical types: (1) possessions completed within three seconds (immediate attack, IA), (2) PFB, (3) SFB, and (4) SO. By statistically analyzing the association between opponents' rankings and these tactical classifications, this study aims to clarify how the temporal and structural characteristics of successful scoring possessions relate to opponents' competitive level. In doing so, the findings are expected to contribute to the theoretical framework of performance analysis research and provide practical implications for coaching in the university basketball context.

METHODS

Data Source and Sample

This study analyzed all field goals (excluding free throws) from 97 games of the 2022 Kansai Intercollegiate Basketball League Division 1 season. Of the 105 scheduled games, eight were excluded due to incomplete or unclear video footage. Game footage was obtained from the official Kansai Intercollegiate Basketball Federation YouTube channel (Federation). Ethical approval was not required because the study used publicly available performance data.

The league consisted of 15 teams competing in a single round-robin format. Based on the final league standings, each field goal was classified according to whether it was scored against an opponent ranked higher or lower than the scoring team. Specifically, goals scored against teams with a better final ranking than the scoring team were categorized as goals against higher-ranked opponents (HR-goals), whereas goals scored against teams with a worse final ranking were categorized as goals against lower-ranked opponents (LR-goals). For example, for a team that finished 4th in the league, field goals scored against the 1st- 3rd ranked teams were classified as HR-goals, while goals scored against teams ranked 5–15th were classified as LR-goals. This relative classification was intended to distinguish whether the opponent finished above or below the scoring team in the final standings and does not reflect absolute competitive levels.

Classification of Attacking Types

Based on previous research on basketball offensive tactics (Conte et al., 2017; Odaka et al., 2008; Uchiyama, 2004), scoring possessions were classified into four attacking types (IA, PFB, SFB, and SO). The classification was based on a combination of tactical characteristics, numerical situation, and possession duration rather than possession duration alone. PFB were defined as transition possessions characterized by numerical superiority (1-on-0 to 3-on-2), in which the offense rapidly advanced the ball toward the basket before the defense was able to recover. These possessions were typically completed within 3–5 s. SFB were defined as transition possessions completed within 5–10 seconds in situations ranging from 3 on 3 to 5 on 4, where three or more defenders had recovered, and the offense was unable to fully capitalize on an initial outnumber advantage, but the defense was not yet fully organized. To determine the number of players involved in each fast-break action, only players actively involved in the play were considered. Defensive players were regarded as actively involved if they were positioned in their defensive half court, between the imaginary line of the ball, parallel to the end line, and the defended basket. Offensive players were considered actively involved if they were in the offensive half court and either (1) touching the ball, (2) positioned beyond the imaginary line of the ball parallel to the end line and gaining a positional advantage, or (3) influencing defensive players (Conte et al., 2017; Odaka et al., 2008; Uchiyama, 2004). SO were defined as possessions initiated under

fully organized half-court conditions in which all five defenders had recovered to their defensive half, resulting in a structured 5-on-5 offensive situation. IA was reserved for immediate scoring actions, such as put-back shots following offensive rebounds and clear 1-on-0 or 2-on-0 scoring opportunities immediately after gaining possession. Although these possessions were typically completed within 3 s, they were classified as IA based on their tactical characteristics rather than possession duration alone.

All games were initially coded by a single analyst. When uncertainty arose regarding the classification of an attacking type, the case was reviewed and resolved by consensus among three analysts. Because these discussions were conducted as part of the coding process, the frequency of such cases was not recorded. In basketball, field goals (excluding free throws) may be worth either two or three points; however, in the present study, analyses were conducted based on the frequency of field goals regardless of point value.

Measures of Counterattack Characteristics

For all scoring possessions, attacking time, the number of attacking players, and the number of completed passes were measured.

Attacking time was defined as the duration from the start of possession to the successful field goal. Possession start was defined as the moment a player gained control of the ball from any source other than a teammate (e.g., defensive rebound or steal). Possession end was defined as the moment the ball completely passed through the basket. Brief touches by opposing players that did not substantially alter the direction of the ball were not considered new possessions. The number of attacking players was determined according to the previously described operational definition of active involvement. The number of completed passes was defined as the total number of passes exchanged between offensive players prior to the field goal.

All games were coded by the same analyst, who had five years of competitive playing experience, to minimize inter-observer variation. To assess intra-rater reliability, 10% of the scoring possessions were randomly selected and re-coded two weeks after the initial coding. For categorical variables (attacking type), Cohen's kappa coefficient was calculated, demonstrating excellent agreement ($\kappa = 0.91$). For continuous variables (attacking time, number of attacking players, and number of passes), intra-rater reliability was assessed using a two-way mixed-effects model, single-measure intraclass correlation coefficient (ICC) for absolute agreement, together with coefficients of variation (CV). ICC values ranged from 0.96 to 0.99, and CVs ranged from 1% to 4%, indicating high reliability.

Statistical Analysis

Statistical analyses were performed using SPSS Version 25.0 (IBM Corp., Chicago, IL, USA). First, chi-square (χ^2) goodness-of-fit tests were performed to examine whether the distribution of attacking types differed from an equal distribution within each opponent group (LR-goals and HR-goals). Expected frequencies were calculated under the assumption of equal proportions across the four attacking types (IA, PFB, SFB, and SO). Effect sizes were calculated using Cohen's *w*. Second, χ^2 tests of independence were conducted to examine the association between opponent ranking (LR-goals vs. HR-goals) and attacking type. Effect sizes were calculated using Cramer's *V*. Differences in attacking time, number of attacking players, and number of completed passes between LR-goals and HR-goals were analyzed using independent samples *t* tests. The unit of analysis for the independent-samples t tests was

the individual successful scoring possession; no aggregation at the game or team level was performed. Because immediate attacks (IA) were characterized by extremely short possession durations and typically involved no passes or only one attacking player, they were excluded from comparisons of attacking time, number of attacking players, and number of completed passes. Normality was assessed using the Shapiro–Wilk test. Although some variables deviated from normality, independent-samples t-tests were retained because the primary aim was to compare group means, and *t*-tests are generally robust to moderate deviations from normality, particularly with relatively large sample sizes. Effect sizes were calculated using Cohen's *d*. Statistical significance was set at $p < .05$.

RESULTS

A total of 4,309 field goals were recorded across the 97 analyzed games. Of these, there were 2,417 LR-goals (56%) and 1,892 HR-goals (44%).

The overall distribution of attack types significantly deviated from an equal distribution across the four categories, $\chi^2(3, N = 4{,}309) = 1042.72$, $p < .001$, Cohen's $w = 0.49$, indicating a large effect size. SO accounted for the greatest proportion of goals and were markedly overrepresented relative to expected frequencies (standardized residual (SR) = 23.85). In contrast, IA (SR = −17.42) and PFB (SR = −11.89) were substantially underrepresented. SFB were also overrepresented, although to a lesser extent (SR = 5.46) (Table 1).

When examined separately by opponent group, significant deviations from equal distribution were observed in both cases. For LR-goals, the distribution differed significantly from equality, χ^2 (3, $N = 2{,}417$) = 350.86, $p < .001$, Cohen's $w = 0.38$. SO (SR = 12.44) and SFB (SR = 5.11) were overrepresented, whereas IA (SR = −11.73) and PFB (SR = −5.81) were underrepresented (Table 1).

For HR-goals, a significant deviation was also found, χ^2 (3, $N = 1{,}892$) = 788.34, $p < .001$, Cohen's $w = 0.65$, reflecting a large effect size. SO were strongly overrepresented (SR = 21.99), while IA (SR = −13.02) and PFB (SR = −11.40) were markedly underrepresented. SFB showed only a slight overrepresentation (SR = 2.44) (Table 1).

Table 1. *χ^2 Goodness-of-Fit Tests for Offensive Tactic Distribution*

Offensive Tactic	LR-goals			HR-goals			ALL-goals		
	Obs.	Exp.	SR	Obs.	Exp.	SR	Obs.	Exp.	SR
IA	316	604.25	-11.73	190	473	-13.02	506	1077.25	-17.42
PFB	462	604.25	-5.81	225	473	-11.40	687	1077.25	-11.89
SFB	730	604.25	5.11	526	473	2.44	1256	1077.25	5.46
SO	909	604.25	12.44	951	473	21.99	1860	1077.25	23.85

Observed (Obs.), expected (Exp.), and standardized residual (SR) values from chi-square goodness-of-fit tests for made field goals across attacking types: immediate attack (<3 s; IA), primary fast break (PFB), secondary fast break (SFB), and set offense (SO). LR-goals represent made field goals scored against lower-ranked opponents, HR-goals represent made field goals scored against higher-ranked opponents, and ALL-goals represent the total sample. Positive standardized residuals indicate overrepresentation relative to expected frequencies, whereas negative values indicate underrepresentation.

A χ^2 test of independence further indicated a significant association between opponent ranking and attacking type, $\chi^2(3, N = 4{,}309) = 84.51$, $p < .001$, Cramer's $V = 0.14$. Examination of SR revealed that PFB were overrepresented in LR-goals (SR = 3.90) and underrepresented in HR-goals (SR = -4.41), whereas SO were underrepresented in LR-goals (SR = -4.16) and overrepresented in HR-goals (SR = 4.70). IA were underrepresented in HR-goals (SR = -2.16), while SFB did not show substantial deviations between groups (|SR| < 1.96) (Table 2). Although statistically significant differences were observed, the corresponding effect sizes were small (Cramer's $V = 0.14$).

Attacking time differed significantly only for SO, with HR-goals (16.15 ± 3.32 s [95% CI, 15.69-16.61]) showing longer possession durations than those for LR-goals (15.28 ± 3.26 s [95% CI, 14.82-15.74], $p < .01$, Cohen's $d = 0.264$), representing a small effect size. No significant differences in attacking time were observed for PFB or SFB (Figure 1A).

No significant differences were found in the number of attacking players between opponent groups across attacking types (Figure 1B).

For SFB, the number of completed passes differed significantly between groups ($p < .05$, Cohen's $d = 0.307$), with LR-goals (2.53±1.49 [95% CI, 2.29-2.76]) involving a greater number of passes compared with those for HR-goals (2.10±1.20 [95% CI, 1.88-2.32]). No significant differences were observed for PFB or SO in terms of number of completed passes (Figure 1C).

Although statistically significant differences were observed in attacking time and the number of completed passes, the corresponding effect sizes were generally small.

Table 2. *χ^2 Test of Independence between opponent ranking and attacking type*

Offensive Tactic	LR-goals			HR-goals		
	Obs.	Exp.	SR	Obs.	Exp.	SR
IA	316	283.83	1.91	190	222.17	-2.16
PFB	462	385.35	3.90	225	301.65	-4.41
SFB	730	704.51	0.96	526	551.49	-1.09
SO	909	1043.31	-4.16	951	816.69	4.70

Observed (Obs.), expected (Exp.), and standardized residual (SR) values from the chi-square test of independence examining the association between opponent ranking (lower-ranked vs. higher-ranked) and attacking type: immediate attack (<3 s; IA), primary fast break (PFB), secondary fast break (SFB), and set offense (SO). Positive standardized residuals indicate cells with higher-than-expected frequencies, whereas negative values indicate lower-than-expected frequencies. Standardized residuals with absolute values greater than 1.96 were considered statistically significant contributors to the overall chi-square statistic.

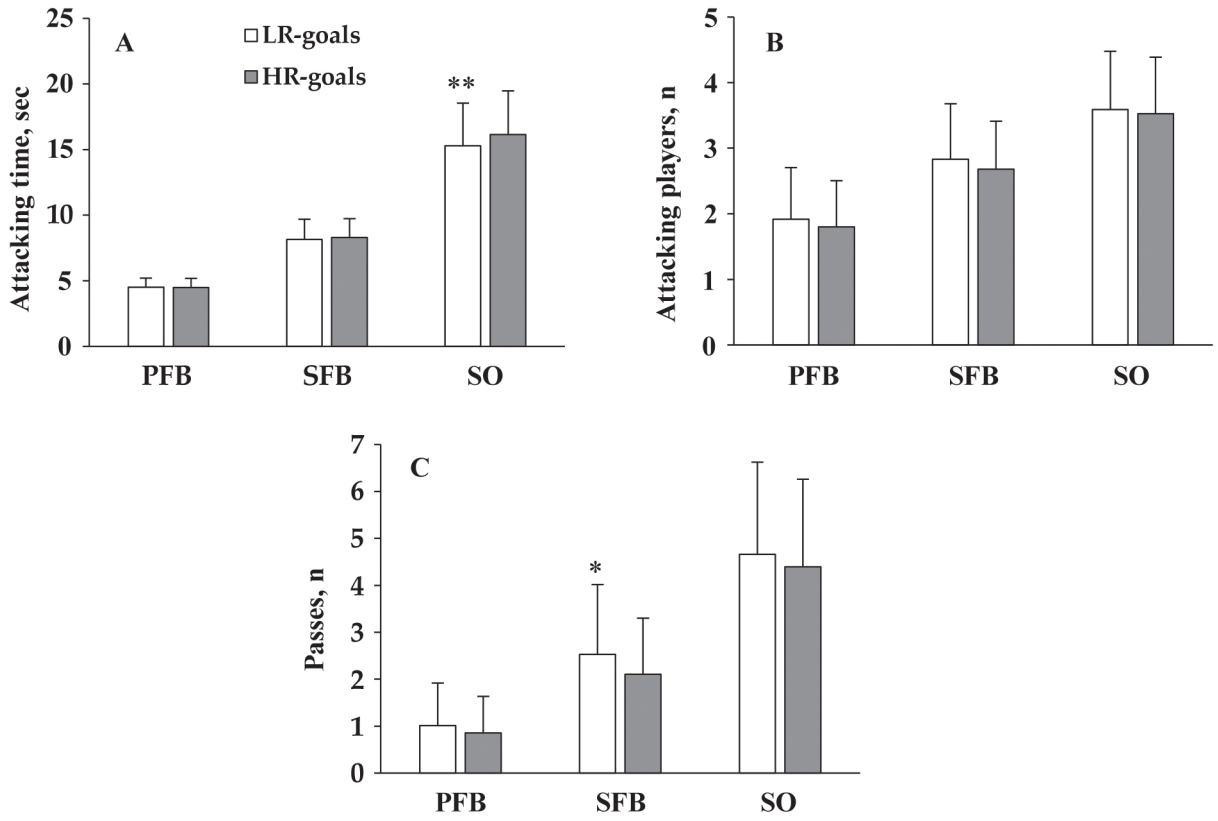

Figure 1. *Offensive characteristics according to opponent ranking and attacking type.*

Note. (A) Attacking time (s), (B) number of attacking players, and (C) number of completed passes for primary fast breaks (PFB), secondary fast breaks (SFB), and set offenses (SO). White bars represent successful scoring possessions against lower-ranked opponents (LR-goals), and dark gray bars represent successful scoring possessions against higher-ranked opponents (HR-goals). Values are presented as mean ± SD. $p < .05$. ** $p < .01$ for comparisons between LR-goals and HR-goals within the same attacking type.

DISCUSSION

This study examined the distribution of attacking types among successful scoring possessions in collegiate basketball and their association with opponent ranking. The main findings can be summarized in three points. First, SO accounted for the largest proportion of field goals across all games. Second, attacking type distribution was significantly associated with opponent ranking, with PFB occurring more frequently against lower-ranked opponents and SO occurring more frequently against higher-ranked opponents. Third, differences in possession duration and passing behavior were observed in specific tactical contexts, although the effect sizes were small.

Among successful scoring possessions, SO accounted for the largest proportion across all games, suggesting that successful field goals most frequently occurred during structured half-court offenses (Table 1). This finding aligns with previous performance analyses indicating that most scoring possessions occur after defensive recovery, limiting opportunities for numerical superiority in early offensive phases (Jørgensen et al., 2021; Ortega et al., 2007; Zelenovic et al., 2022). However, the present results further demonstrate that the distribution of attack types among successful scoring possessions varies by opponent level (Table 2). The χ^2 test of independence showed that PFB were significantly overrepresented for LR-goals, whereas SO were overrepresented for HR-goals. This pattern suggests

that successful scoring possessions were characterized by different distributions of attacking types according to relative opponent ranking.

Against higher-ranked opponents, defensive organization and transition recovery are likely to be more efficient, reducing opportunities for early-phase scoring through numerical advantage (Gómez et al., 2008; Conte et al., 2017; Sampaio, Lago, et al., 2010; Sun et al., 2025). Consequently, teams may be required to rely more heavily on structured half-court offenses. From a probabilistic and game-theoretical perspective, previous research has demonstrated that maximizing expected points per possession does not always equate to maximizing the probability of winning, particularly for underdog teams (Gregory, 2018; Poropudas & Halme, 2023; Skinner, 2012). Theoretical models suggest that manipulating the number of possessions may influence scoring variance and overall win probability, with reduced pace potentially limiting the opportunities available to a superior opponent. In applied coaching contexts, such tempo-control approaches are sometimes described as "delay offense" strategies that aim to regulate the game's rhythm and suppress transition opportunities. In the present context, lower-ranked teams facing higher-ranked opponents may have exhibited a slower offensive tempo to suppress transition play. Therefore, the increased proportion of SO against higher-ranked opponents may reflect not only defensive pressure imposed by stronger teams but also possible tempo regulation during successful scoring possessions. However, because defensive pressure, coaching strategy, shot-clock usage, and intentional tempo regulation were not directly assessed in the present study, these interpretations should be considered speculative and require direct empirical validation in future research.

Conversely, successful scoring possessions resulting from PFB were more frequent in games against lower-ranked opponents. Previous studies have shown that fast-break actions are most frequently initiated following defensive rebounds or turnovers, highlighting the central role of defensive performance in generating transition opportunities (Conte et al., 2017; Evangelos et al., 2005; Refoyo et al., 2009). Because transition sequences are typically triggered by successful defensive actions, defensive effectiveness may be considered a structural prerequisite for fast-break scoring. Moreover, defensive rebounding and other defensive indicators have been reported to differentiate between higher- and lower-performing teams (Conte & Lukonaitiene, 2018; Komić et al., 2024; Sun et al., 2025). These findings suggest that teams with superior defensive organization and rebounding capacity may be associated with more transition scoring opportunities. Within this framework, the greater proportion of PFB observed in LR-goals may reflect differences in defensive efficiency that facilitate early-phase offensive initiation against lower-ranked opponents. However, because the present study did not examine the origins of transition opportunities, such as defensive rebounds, steals, or turnovers, this interpretation should also be considered speculative and requires direct empirical verification. Furthermore, the association between opponent quality and the distribution of attacking types was characterized by a small effect size. Therefore, although statistically detectable, the practical magnitude of this difference should be interpreted with caution.

In addition to differences in attacking type distribution, significant differences were observed in possession duration and passing behavior among successful scoring possessions (Figure 1). Attacking time during SO was significantly longer for HR-goals, although the effect size was small. This finding suggests that generating scoring opportunities against

stronger teams may require more sustained ball circulation and prolonged tactical organization. Previous research has demonstrated that defensive pressure influences technical actions in basketball (Sampaio et al., 2016), and that situational variables, including opponent quality and match context, affect possession effectiveness (Gómez et al., 2013). Moreover, shooting effectiveness has been shown to vary according to contextual constraints and game status (Gómez Ruano et al., 2015). Taken together, these findings are consistent with the interpretation that facing stronger defensive structures may necessitate longer and more organized possessions to create high-quality scoring opportunities. Furthermore, the number of completed passes during SFB was significantly greater in LR-goals. Although the magnitude of this difference was modest, it suggests that transition sequences against weaker teams may allow for more ball movement before a shot is completed. A systematic review indicates that transitional attacks vary with defensive recovery and tactical preparation, suggesting that when defenses fail to organize promptly, offensive teams may prolong sequences through extra ball movement and decision-making (Zelenovic et al., 2022). In contrast, against higher-ranked opponents, faster defensive recovery may constrain the time and space available for additional passes during secondary transition phases.

Taken together, these findings indicate that the characteristics of successful scoring possessions in collegiate basketball were associated with opponents' relative rankings. The observed differences may also reflect contextual factors such as defensive organization and game tempo, although these factors were not directly assessed in the present study. The observed attacking patterns among successful scoring possessions should therefore be interpreted within the context of competitive constraints. Although several differences reached statistical significance, the corresponding effect sizes were generally small. Therefore, these findings should be interpreted as statistically detectable but practically modest differences, and caution is warranted when considering their implications for coaching and game planning.

Several limitations should be acknowledged. First, the analysis was limited to a single season of the Kansai Intercollegiate Basketball League Division 1, which may restrict generalizability to other competitive levels or contexts. Second, only field goals were analyzed, meaning that the study reflects successful scoring possessions rather than the overall selection or efficiency of attacking strategies. Including all possessions would provide a more comprehensive understanding of tactical decision-making. Third, opponent quality was operationalized using the relative final league standings of the competing teams. Although this approach provides an objective indicator of whether the opponent finished above or below the scoring team, it does not distinguish absolute competitive levels. Consequently, matchups from different competitive contexts (e.g., first- versus second-ranked teams and tenth- versus fifth-ranked teams) may have been classified within the same category. In addition, previous research has demonstrated that situational variables such as game location, score-line, and quality of opposition significantly influence performance outcomes in basketball (Sampaio, Lago, et al., 2010). Furthermore, contextual factors during specific game periods have been shown to affect performance dynamics, particularly in close games (Gomez et al., 2016). Therefore, the observed associations should be interpreted in the context of the relative-ranking classification adopted in the present study. Fourth, scoring possessions were nested within games, teams, and matchups, meaning that observations may

not have been fully independent. Team-specific tactical preferences or particular matchup characteristics may therefore have influenced the observed attacking patterns. Future studies should incorporate multilevel statistical approaches or team-level analyses to account for these clustered data structures.

CONCLUSIONS

In conclusion, this study demonstrates that both the distribution and structural characteristics of successful scoring possessions in collegiate basketball are associated with opponent quality. SO were more prevalent against higher-ranked opponents, whereas PFB were more frequent against lower-ranked opponents. Differences in possession duration and passing behavior further suggest that opponent quality was associated not only with the distribution of attacking types among successful scoring possessions but also with the internal characteristics of those possessions. These findings provide further insight into the association between opponent quality and the characteristics of successful scoring possessions in collegiate basketball.

REFERENCES

Ávila-Moreno, F. M., Chirosa-Ríos, L. J., Ureña-Espá, A., Lozano-Jarque, D., & Ulloa-Díaz, D. (2018). Evaluation of tactical performance in invasion team sports: a systematic review. *International Journal of Performance Analysis in Sport, 18*(2), 195–216. https://doi.org/10.1080/24748668.2018.1460054

Conte, D., & Lukonaitiene, I. (2018). Scoring Strategies Differentiating between Winning and Losing Teams during FIBA EuroBasket Women 2017. *Sports, 6*(2), 50. https://doi.org/10.3390/sports6020050

Conte, D., Favero, T. G., Niederhausen, M., Capranica, L., & Tessitore, A. (2017). Determinants of the effectiveness of fast break actions in elite and sub-elite Italian men's basketball games. *Biology of Sport, 34*(2), 177–183. https://doi.org/10.5114/biolsport.2017.65337

Courel-Ibáñez, J., McRobert, A. P., Toro, E. O., & Vélez, D. C. (2016). Inside pass predicts ball possession effectiveness in NBA basketball. *International Journal of Performance Analysis in Sport, 16*(2), 711–725. https://doi.org/10.1080/24748668.2016.11868918

Evangelos, T., Alexandros, K., & Nikolaos, A. (2005). Analysis of fast breaks in basketball. *International Journal of Performance Analysis in Sport, 5*(2), 17–22. https://doi.org/10.1080/24748668.2005.11868324

Garefis, A., Tsitskaris, G., Mexas, K., & Kyriakou, D. (2007). Comparison of the effectiveness of fast breaks in two high level basketball championships. *International Journal of Performance Analysis in Sport, 7*(3), 9–17. https://doi.org/10.1080/24748668.2007.11868405

Gomez, M. A., Gasperi, L., & Lupo, C. (2016). Performance analysis of game dynamics during the 4th game quarter of NBA close games. *International Journal of Performance Analysis in Sport, 16*(1), 249–263. https://doi.org/10.1080/24748668.2016.11868884

Gómez, M. A., Lorenzo, A., Ibáñez, S. J., & Sampaio, J. (2013). Ball possession effectiveness in men's and women's elite basketball according to situational variables in different game periods. *Journal of Sports Sciences, 31*(14), 1578–1587. https://doi.org/10.1080/02640414.2013.792942

Gómez, M. A., Lorenzo, A., Sampaio, J., Ibáñez, S. J., & Ortega, E. (2008). Game-related statistics that discriminated winning and losing teams from the Spanish men's professional basketball teams. *Collegium Antropologicum, 32*(2), 451–456.

Gregory, J. (2018). Do basketball scoring patterns reflect illegal point shaving or optimal in-game adjustments? *Quantitative Economics, 9*(2), 1053–1085. https://doi.org/10.3982/QE519

Ibáñez, S. J., García-Rubio, J., Rodríguez-Serrano, D., & Feu, S. (2019). Development of a Knockout Competition in Basketball: A Study of the Spanish Copa del Rey. *Frontiers in Psychology, 10,* 2457.
https://doi.org/10.3389/fpsyg.2019.02457

Ibáñez, S. J., Sampaio, J., Feu, S., Lorenzo, A., Gómez, M. A., & Ortega, E. (2008). Basketball game-related statistics that discriminate between teams' season-long success. *European Journal of Sport Science, 8*(6), 369–372.
https://doi.org/10.1080/17461390802261470

Jørgensen, J., Selmanovic, A., & Thomann, K. (2021). Difference of offensive structure between European and American top-level basketball. *Journal of Physical Education and Sport, 21*(3), 1988-1997.
https://doi.org/10.7752/jpes.2021.s3253

Kansai Intercollegiate Basketball Federation. (n.d.). Kansai Intercollegiate Basketball Federation YouTube channel. YouTube. Retrieved April 1st, 2023, from
https://www.youtube.com/@kibf2021

Komić, J., Simović, S., Čaušević, D., Alexe, D. I., Wilk, M., Rani, B., & Alexe, C. I. (2024). The Influence of Game-Related Statistics on the Final Results in FIBA Global and Continental Competitions. *Applied Sciences*, *14*(12), 5357.
https://doi.org/10.3390/app14125357

Matulaitis, K., & Bietkis, T. (2021). Prediction of Offensive Possession Ends in Elite Basketball Teams. *International Journal of Environmental Research and Public Health, 18*(3), 1083.
https://doi.org/10.3390/ijerph18031083

McGarry, T., Anderson, D. I., Wallace, S. A., Hughes, M. D., & Franks, I. M. (2002). Sport competition as a dynamical self-organizing system. *Journal of Sports Sciences, 20*(10), 771–781.
https://doi.org/10.1080/026404102320675620

Odaka, T., Yoshida, K., & Uchiyama, H. (2008). Focusing on offensive time of the half court offense in basketball. *University Physical Education Research, 30*, 9–22.

Ortega, E., Palao, J. M., Gómez, M. A., Lorenzo, A., & Cárdenas, D. (2007). Analysis of the efficacy of possessions in boys' 16-and-under basketball teams: differences between winning and losing teams. *Perceptual and Motor Skills, 104*(3 Pt 1), 961–964.
https://doi.org/10.2466/pms.104.3.961-964

Poropudas, J., & Halme, T. (2023). Dean Oliver's Four Factors Revisited (arXiv:2305.13032). arXiv.
https://arxiv.org/pdf/2305.13032

Refoyo, I., Romarís, I. U., & Sampedro, J. (2009). Analysis of men's and women's basketball fast-breaks. *Revista de Psicología del Deporte, 18,* 439–444.

Gómez Ruano, M. Á., Alarcón López, F., Ortega Toro, E. (2015). Analysis of shooting effectiveness in elite basketball according to match status. *Revista de Psicología del Deporte, 24*, 37–41.

Sampaio, J., Drinkwater, E. J., & Leite, N. M. (2010). Effects of season period, team quality, and playing time on basketball players' game-related statistics. *European Journal of Sport Science, 10*(2), 141–149.
https://doi.org/10.1080/17461390903311935

Sampaio, J., Lago, C., Casais, L., & Leite, N. (2010). Effects of starting score-line, game location, and quality of opposition in basketball quarter score. *European Journal of Sport Science, 10*(6), 391–396.
https://doi.org/10.1080/17461391003699104

Sampaio, J., Leser, R., Baca, A., Calleja-Gonzalez, J., Coutinho, D., Gonçalves, B., & Leite, N. (2016). Defensive pressure affects basketball technical actions but not the time-motion variables. *Journal of Sport and Health Science, 5*(3), 375–380.
https://doi.org/10.1016/j.jshs.2015.01.011

Skinner, B. (2012). The problem of shot selection in basketball. *PloS ONE, 7*(1), e30776. https://doi.org/10.1371/journal.pone.0030776

Sun, W., Kok, L., Chee, C., & Xiao, W. (2025). Distinguishing the offensive and defensive performances of starters and substitutes between high-level and low-level teams in elite women's basketball games. *PloS ONE, 20*(10), e0335318. https://doi.org/10.1371/journal.pone.0335318

Uchiyama, H. (2004). Structural analysis of team tactics in basketball. *The Japanese Journal of Sports Methodology, 17*(1), 25–39. https://doi.org/10.24776/jcoaching.17.1_25

Zelenovic, M., Božić, D., Perović, T., & Bjelica, B. (2022). Analysis of Counter-attack, Transitional and Positional Attack in Basketball: A Systematic Review. Book of Proceedings of the Eighth International Scientific Conference: Anthropological and Teo-Anthropological Views on Physical Activity from the Time of Constantine the Great to Modern Times (162–170). Faculty of Sport and Physical Education, University of Priština.

Corresponding author:
Taiki Miyazawa
Department of Sports and Physical Education,
Faculty of Wellness,
Shigakkan University,
Obu, Japan
Email: miyazawa@sgk.ac.jp