

Analysis of Match Performance Indicators of University Futsal Teams in the 2026 National Collegiate Futsal Series

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Abstract: This study aimed to identify match performance indicators associated with winning in university futsal teams competing in the 2026 National Collegiate Futsal Series (NCFS). A quantitative descriptive-comparative design was employed using official statistics from 410 matches across ten regional competitions, resulting in 820 team-match observations: 365 wins, 90 draws, and 365 losses. The analyzed indicators included goals scored, shots on target, shots off target, ball possession, pass accuracy, tackles, missed penalties, fouls committed, yellow cards, and red cards. Because goals scored directly determines match outcomes, it was used only as a descriptive outcome-validation indicator and was not treated as a predictor of success. Data were analyzed using descriptive statistics and the Kruskal–Wallis test, followed by Dunn–Holm post hoc comparisons. Significant differences among winning, drawing, and losing teams were found in shots on target, shots off target, ball possession, pass accuracy, fouls committed, and yellow cards ($p < 0.05$), although the effect sizes were generally small ($\epsilon^2 = 0.001–0.052$). Pass accuracy and ball possession showed the largest effects. Post hoc analysis indicated that winning teams recorded significantly more shots on target, greater ball possession, and higher pass accuracy than drawing and losing teams. Descriptively, winning teams also scored more goals than drawing and losing teams. Conversely, tackles, missed penalties, and red cards did not differ significantly across match outcomes ($p > 0.05$). These findings suggest that attacking effectiveness and game control, particularly shot accuracy, ball possession, and passing accuracy, are the performance indicators most consistently associated with winning in university futsal.

Keywords: match performance analysis; university futsal; performance indicators; National Collegiate Futsal Series; match statistics.



INTRODUCTION

Match performance analysis has become one of the most important approaches in modern sport science, as it provides objective information regarding both individual and team performance during competition (Carling et al., 2005; Castellano et al., 2012). Match analysis enables coaches to obtain more accurate feedback than relying solely on subjective visual observations during matches (Hughes & Franks, 2004). Evaluations based exclusively on direct observation are often influenced by limitations in perception, experience, and the coach's ability to recall numerous events occurring rapidly throughout the game (Hughes & Franks, 2004). Consequently, statistical match performance analysis has been increasingly adopted to evaluate team strengths and weaknesses, develop training programs, design tactical strategies, and support evidence-based decision-making in elite sports (Carling et al., 2008; Castellano et al., 2012). This approach not only describes match outcomes but also identifies the technical and tactical factors that contribute to team success or failure (Castellano et al., 2012).

The application of performance analysis has expanded considerably in soccer due to the complexity of the game, which involves continuous interactions among technical, tactical, physical, and decision-making components throughout a match (Castellano et al., 2012). Previous studies have identified performance indicators such as goals scored, total shots, shots on target, ball possession, pass accuracy, corner kicks, fouls, and disciplinary cards as essential variables for evaluating team performance (Hughes & Bartlett, 2002; Castellano et al., 2012). These indicators contribute to the development of team performance profiles and enable researchers to distinguish the characteristics of winning, drawing, and losing teams (O'Donoghue, 2005; Castellano et al., 2012). Castellano et al. (2012) reported that total shots, shots on target, and ball possession were the strongest discriminators among winning, drawing, and losing teams across three FIFA World Cup tournaments. These findings suggest that attacking effectiveness and the ability to control the game are critical determinants of competitive success.

With the advancement of performance analysis research in soccer, similar analytical approaches have increasingly been applied to futsal, a sport characterized by high-intensity play, rapid transitions, limited playing space, and frequent offensive and defensive actions compared with soccer (Naser et al., 2017). Statistical match analysis in futsal is primarily used to identify performance indicators associated with team success

during competitions (Spyrou et al., 2023). Previous studies have demonstrated that finishing efficiency, shots on target, ball possession, and passing accuracy are significantly associated with match outcomes in futsal (Agras et al., 2017; Kuroma & S, 2025; Spyrou et al., 2023). Furthermore, maintaining ball possession and constructing attacks through accurate passing have been shown to increase goal-scoring opportunities while allowing teams to control the tempo of the game (Spyrou et al., 2023). These findings indicate that performance indicator analysis provides an objective representation of team playing characteristics and serves as an important foundation for evaluating performance and improving competitive achievement in futsal (Naser et al., 2017).

Despite these developments, research on match performance analysis remains predominantly focused on soccer, particularly within professional leagues, elite competitions, and international tournaments such as the FIFA World Cup (Castellano et al., 2012). Likewise, most studies in futsal have been conducted at the professional or international level, meaning that their findings may not accurately represent the characteristics of university-level competitions (Naser et al., 2017; Yiannaki et al., 2020). In Indonesia, futsal research has largely concentrated on athletes' physical fitness, technical skills, physiological characteristics, and psychological factors rather than comprehensive statistical match analysis. To date, studies specifically examining the match performance indicators of university futsal teams using official match statistics from national-level competitions remain scarce. This gap is particularly relevant considering that the National Collegiate Futsal Series (NCFS) 2026 is one of Indonesia's largest university futsal competitions, involving universities from ten regional divisions with playing characteristics that differ from those observed in professional or youth competitions. Therefore, a clear research gap exists regarding the identification of performance indicators that distinguish winning, drawing, and losing teams in national university futsal competitions in Indonesia.

Based on this research gap, the present study aims to analyze the match performance indicators of university futsal teams competing in the National Collegiate Futsal Series (NCFS) 2026 according to match outcomes (win, draw, and loss). The study examines official match statistics, including goals scored, shots on target, shots off target, ball possession, pass accuracy, tackles, fouls, yellow cards, and red cards, to identify the indicators that contribute most significantly to team success. The findings are expected

to enrich the scientific literature on university-level futsal performance analysis, an area that remains underexplored in Indonesia. Furthermore, the results are anticipated to provide practical implications for coaches, performance analysts, and university sports administrators by supporting evidence-based training program development, performance evaluation, and tactical planning, thereby contributing to the improvement of university futsal performance through objective statistical analysis.

METHODE

This study employed a quantitative approach with a comparative descriptive research design using match performance analysis. The research design was adapted from Castellano et al. (2012), who applied a match performance analysis approach to identify performance indicators that distinguish winning, drawing, and losing teams. The aim of the present study was to examine differences in match performance indicators according to match outcomes (win, draw, and loss) during the 2026 National Collegiate Futsal Series (NCFS). This approach was selected because it enables an objective assessment of team performance based on official match statistics without manipulating the study subjects.

The study utilized secondary data obtained from the official match statistics of the 2026 National Collegiate Futsal Series (NCFS). All match data were collected from the official competition website, lapangbola.com, which provides comprehensive statistical summaries for every match throughout the tournament. These statistics were generated through an official match statistics recording process conducted by authorized match operators using a manual data-entry system during each game. Match events, including goals, shots, ball possession, pass accuracy, tackles, fouls, yellow cards, and red cards, were recorded in real time by official statisticians and subsequently verified by the competition organizers before being published on the official competition platform.

The unit of analysis consisted of all matches played in the 2026 National Collegiate Futsal Series (NCFS), which was held across ten regional competitions: Jakarta, Bandung, Yogyakarta, Surabaya, Makassar, Semarang, Malang, Samarinda, Depok, and Medan. A total sampling technique was employed, whereby all matches meeting the inclusion criteria were included in the analysis. Eligible matches were those completed within regular playing time (excluding extra time and penalty shootouts) and with complete match statistics available. Each match was subsequently classified

according to its final outcome (win, draw, or loss). The performance indicators analyzed included goals scored, shots on target, shots off target, ball possession, pass accuracy, tackles, missed penalties, fouls committed, yellow cards, and red cards.

During the data collection process, several variables contained Not Available (N/A) values in the official match statistics. These values indicated that data for particular indicators were unavailable because the event did not occur during the match or was not recorded by the official statistics system. For example, the missed penalties variable was recorded as N/A when no penalty kick was awarded to either team during the match. Similarly, certain indicators were unavailable in some matches due to limitations in the statistical recording process. Therefore, N/A values were treated as missing data rather than numerical values and were excluded from the statistical analysis for the corresponding variables.

All match statistics were initially compiled in Microsoft Excel, where data cleaning procedures were performed. These procedures included checking data consistency, identifying duplicate records, and detecting missing values. The cleaned dataset was subsequently imported into IBM SPSS Statistics version 27 for statistical analysis.

Data analysis began with descriptive statistics to summarize the characteristics of each performance indicator. Prior to inferential analysis, the assumptions of normality and homogeneity of variance were assessed using the Shapiro–Wilk test and Levene's test, respectively. Differences in match performance indicators among winning, drawing, and losing teams were examined using a one-way analysis of variance (one-way ANOVA). When a statistically significant difference was identified ($p < 0.05$), Bonferroni post hoc comparisons were conducted to determine which groups differed significantly. Statistical significance was established at $\alpha = 0.05$ for all analyses.

RESULT AND DISCUSSION

The present study analyzed official match statistics from the 2026 National Collegiate Futsal Series (NCFS), which was conducted across ten regional competitions: Jakarta, Bandung, Yogyakarta, Surabaya, Makassar, Semarang, Malang, Samarinda, Depok, and Medan. All eligible matches were classified according to their final outcomes into three groups: winning, drawing, and losing teams.

As presented in Table 1, relatively consistent match performance patterns were observed across all regional competitions. In every region, winning teams consistently recorded a higher mean number of goals scored than drawing and losing teams. The highest mean value for goals scored by winning teams was observed in the Makassar regional (4.84 ± 3.60), whereas the lowest was found in the Yogyakarta regional (2.54 ± 1.34). A similar pattern was evident for shots on target, with winning teams producing more shots on target than drawing and losing teams across all regions. The highest mean number of shots on target among winning teams was recorded in the Depok regional (10.74 ± 5.09), while the lowest was observed in the Malang regional (8.00 ± 3.37).

The ball possession indicator also demonstrated a consistent trend, with winning teams maintaining higher ball possession percentages than drawing and losing teams in almost every regional competition. The highest mean ball possession among winning teams was observed in the Jakarta regional ($63.13 \pm 21.90\%$), whereas the lowest was recorded in the Semarang regional ($54.0 \pm 16.0\%$). A similar pattern was found for pass accuracy, where winning teams consistently achieved higher passing accuracy than drawing and losing teams across all regions. The highest pass accuracy among winning teams was recorded in the Surabaya and Makassar regionals (83%), while the lowest was observed in the Malang regional (77%).

Greater variation was observed for the tackles variable across regions. The Bandung regional exhibited the highest average number of tackles across all match outcome groups, whereas relatively lower tackle values were observed in the Makassar, Malang, and Depok regionals. In contrast, the disciplinary indicators, including fouls committed, yellow cards, and red cards, showed relatively smaller differences among winning, drawing, and losing teams compared with the offensive and ball possession indicators.

Table 1. Descriptive Statistics of Winning, Drawing, and Losing Teams Based on Match Statistics Across the Ten Regional Competitions

Region	Result	GS	SOT	SOFF	POS	PA	TKL	FLS	YC	RC
Jakarta	Win (38)	3.92 ± 2.91	9.82 ± 5.27	7.89 ± 3.86	63.13 ± 21.90	82.71 ± 8.32	2.00 ± 1.76	3.92 ± 2.16	0.95 ± 1.09	0.16 ± 0.37
	Draw (4)	0.50 ± 0.58	7.50 ± 5.07	5.25 ± 4.43	50.00 ± 31.94	72.50 ± 19.05	2.75 ± 1.26	2.75 ± 0.96	0.25 ± 0.50	0.00 ± 0.00
	Loss (38)	0.58 ± 0.83	4.03 ± 2.41	4.71 ± 2.38	36.87 ± 21.90	68.29 ± 16.34	2.58 ± 2.25	3.05 ± 1.93	0.71 ± 0.98	0.00 ± 0.00
Bandung	Win (41)	3.00 ± 1.67	9.49 ± 4.28	7.24 ± 3.35	58.22 ± 13.07	82.24 ± 6.56	13.02 ± 5.68	3.15 ± 1.68	1.02 ± 0.96	0.10 ± 0.30
	Draw (6)	0.57 ± 0.76	5.57 ± 2.50	5.57 ± 1.91	60.00 ± 11.24	75.29 ± 4.63	13.79 ± 5.24	3.36 ± 1.55	1.29 ± 1.14	0.07 ± 0.17
	Loss (41)	0.63 ± 0.73	4.46 ± 2.32	4.41 ± 2.77	44.78 ± 13.07	72.00 ± 10.20	4.37 ± 6.11	2.76 ± 1.75	0.80 ± 0.93	0.05 ± 0.22
Yogyakarta	Win (41)	2.54 ± 1.34	8.83 ± 3.83	5.76 ± 3.25	55.00 ± 14.00	82.00 ± 8.00	5.29 ± 4.79	3.71 ± 2.24	0.95 ± 1.05	0.12 ± 0.33
	Draw (9)	1.29 ± 0.91	6.93 ± 2.81	5.93 ± 3.56	50.00 ± 18.00	78.00 ± 9.00	5.64 ± 4.25	3.71 ± 2.13	1.00 ± 0.88	0.07 ± 0.27
	Loss (41)	0.63 ± 0.66	4.24 ± 2.32	4.90 ± 2.95	45.00 ± 14.00	77.00 ± 8.00	5.32 ± 3.51	3.13 ± 1.96	0.76 ± 0.83	0.02 ± 0.16
Surabaya	Win (39)	2.74 ± 1.69	8.50 ± 4.50	6.71 ± 3.42	56.00 ± 16.00	83.00 ± 7.00	7.79 ± 1.47	2.53 ± 1.60	0.85 ± 0.86	0.12 ± 0.33
	Draw (7)	0.67 ± 0.78	5.17 ± 2.29	5.50 ± 2.35	50.00 ± 11.00	78.00 ± 7.00	3.08 ± 2.23	3.25 ± 1.42	0.92 ± 1.00	0.25 ± 0.46
	Loss (34)	0.53 ± 0.66	4.03 ± 2.05	4.76 ± 3.45	44.00 ± 16.00	75.00 ± 8.00	2.44 ± 2.08	3.00 ± 1.84	0.88 ± 0.77	0.12 ± 0.47
Makassar	Win (32)	4.84 ± 3.60	9.53 ± 5.25	6.81 ± 3.27	59.00 ± 21.00	83.00 ± 9.00	1.06 ± 2.03	3.88 ± 2.32	0.97 ± 0.93	0.03 ± 0.18
	Draw (12)	1.33 ± 0.49	4.17 ± 2.37	5.67 ± 2.57	50.00 ± 22.00	79.00 ± 8.00	1.92 ± 2.87	2.42 ± 1.62	1.00 ± 1.28	0.17 ± 0.58
	Loss (36)	0.56 ± 0.76	3.84 ± 2.80	4.16 ± 2.55	40.00 ± 21.00	73.00 ± 11.00	2.41 ± 2.94	1.81 ± 1.33	0.69 ± 0.86	0.00 ± 0.00
Semarang	Win (39)	3.21 ± 2.04	9.56 ± 5.05	8.15 ± 2.46	54.04 ± 16.10	82.00 ± 8.00	7.03 ± 4.37	2.23 ± 1.37	1.10 ± 1.07	0.03 ± 0.16
	Draw (2)	2.00 ± 0.00	7.00 ± 1.41	4.00 ± 2.83	50.00 ± 49.00	77.00 ± 18.00	8.50 ± 7.78	3.00 ± 0.00	2.00 ± 0.00	0.00 ± 0.00
	Loss (39)	0.67 ± 0.74	5.46 ± 2.54	6.41 ± 2.85	46.00 ± 16.00	75.00 ± 6.00	2.91 ± 4.50	2.54 ± 1.54	0.82 ± 0.76	0.10 ± 0.53
Malang	Win (37)	2.68 ± 1.96	8.00 ± 3.37	6.49 ± 2.86	55.00 ± 19.00	77.00 ± 11.00	1.14 ± 1.49	3.30 ± 1.93	1.49 ± 1.07	0.16 ± 0.37
	Draw (6)	0.33 ± 0.52	4.67 ± 2.25	5.67 ± 2.07	50.00 ± 17.00	78.00 ± 6.00	0.17 ± 0.41	4.50 ± 3.08	0.67 ± 0.82	0.17 ± 0.41
	Loss (37)	0.41 ± 0.55	4.95 ± 2.68	5.41 ± 2.66	45.00 ± 19.00	74.00 ± 8.00	1.00 ± 1.22	2.65 ± 1.40	0.70 ± 0.70	0.03 ± 0.16
Samarinda	Win (35)	3.49 ± 2.32	9.37 ± 4.80	6.51 ± 3.59	58.00 ± 26.00	81.00 ± 9.00	5.34 ± 7.71	2.57 ± 1.69	0.66 ± 0.68	0.03 ± 0.17
	Draw (10)	1.20 ± 1.03	5.80 ± 1.57	6.80 ± 3.33	50.00 ± 12.00	78.00 ± 5.00	9.40 ± 9.82	3.20 ± 2.39	1.60 ± 1.43	0.20 ± 0.42
	Loss (35)	0.80 ± 0.96	5.06 ± 3.25	4.34 ± 2.63	42.00 ± 26.00	71.00 ± 10.00	6.46 ± 8.57	2.51 ± 1.63	0.69 ± 0.83	0.03 ± 0.17
Depok	Win (34)	2.94 ± 1.76	10.74 ± 5.09	5.94 ± 2.97	59.00 ± 20.00	80.00 ± 9.00	1.22 ± 0.97	2.82 ± 1.99	0.74 ± 0.86	0.03 ± 0.17
	Draw (12)	0.67 ± 0.78	5.67 ± 2.35	4.83 ± 1.80	50.00 ± 12.00	83.00 ± 7.00	1.17 ± 1.47	2.00 ± 1.81	0.33 ± 0.65	0.00 ± 0.00
	Loss (34)	0.79 ± 0.95	4.82 ± 2.42	6.12 ± 2.25	41.00 ± 20.00	75.00 ± 11.00	2.00 ± 1.41	2.38 ± 2.32	0.82 ± 1.03	0.18 ± 0.52
Medan	Win (37)	3.30 ± 1.96	9.41 ± 4.49	5.68 ± 3.12	NA	NA	NA	5.44 ± 2.33	1.24 ± 1.00	0.03 ± 0.16
	Draw (6)	1.67 ± 1.03	6.67 ± 4.33	4.50 ± 3.39	NA	NA	NA	3.33 ± 1.71	0.83 ± 0.75	0.00 ± 0.00
	Loss (37)	0.43 ± 0.55	3.81 ± 2.35	3.86 ± 2.21	NA	NA	NA	2.39 ± 1.36	0.89 ± 0.89	0.14 ± 0.42

GS: Goals Scored, **SOT:** Shoot on target, **SOFF:** Shoot off target, **POS:** Possesion, **PA:** Pass accuracy, **TKL:** Teackles, **FLS:** Foul, **YC:** Yelllow Card, **RC:** Red card.

Overall, the descriptive results across the ten regional competitions revealed a consistent pattern in which winning teams recorded more goals scored, a higher number of shots on target, greater ball possession, and superior pass accuracy than both drawing and losing teams. These findings suggest that attacking effectiveness and the ability to control the flow of the game are key factors associated with team success in university futsal competitions.

Table 2. Descriptive Statistics and Univariate Comparisons Among Winning, Drawing, and Losing Teams Based on Match Statistics Across All Matches Played in the Ten Regional Competitions.

Variable	Win	Draw	Loss	Kruskal-Wallis p	epsilon^2
Goals Scored	3.0 [2.0-4.0] (n=365)	1.0 [0.0-1.0] (n=90)	0.0 [0.0-1.0] (n=365)	<0.001	0.000
Shots on Target	8.0 [6.0-12.0] (n=365)	5.0 [4.0-7.0] (n=90)	4.0 [3.0-6.0] (n=364)	<0.001	0.000
Shots off Target	6.0 [4.0-9.0] (n=365)	5.0 [4.0-7.0] (n=90)	4.0 [3.0-7.0] (n=364)	<0.001	0.000
Ball Possession (%)	58.0 [44.0-72.0] (n=365)	50.0 [37.0-63.0] (n=90)	42.0 [28.0-56.0] (n=364)	<0.001	0.029
Pass Accuracy (%)	84.0 [77.0-89.0] (n=365)	77.0 [72.0-83.0] (n=90)	75.0 [69.0-81.0] (n=364)	<0.001	0.052
Tackles	2.0 [1.0-7.0] (n=303)	3.0 [1.0-11.0] (n=78)	3.0 [1.0-9.0] (n=303)	0.189	0.200
Missed Penalties	0.0 [0.0-0.0] (n=351)	0.0 [0.0-0.0] (n=90)	0.0 [0.0-0.0] (n=351)	0.078	0.063
Fouls Committed	3.0 [2.0-4.0] (n=365)	3.0 [2.0-4.0] (n=90)	2.0 [1.0-4.0] (n=364)	<0.001	0.001
Yellow Cards	1.0 [0.0-2.0] (n=365)	1.0 [0.0-2.0] (n=90)	1.0 [0.0-1.0] (n=364)	0.011	0.010
Red Cards	0.0 [0.0-0.0] (n=365)	0.0 [0.0-0.0] (n=90)	0.0 [0.0-0.0] (n=365)	0.581	0.581

Kruskal-Wallis p: Nonparametric test for comparing three or more independent groups, **epsilon^2:** Effect effect size suggested that the observed differences had a small practical impact.

As presented in Table 2, significant differences were observed in most match performance indicators among winning, drawing, and losing teams. Because the data were not normally distributed, the results are reported as median and interquartile range (IQR), with different sample sizes (n) across the three match outcome groups. Winning teams recorded a median of 3.0 goals scored (IQR: 2.0–4.0), which was higher than that of drawing teams (1.0; IQR: 0.0–1.0) and losing teams (0.0; IQR: 0.0–1.0). The Kruskal–Wallis test revealed a statistically significant difference ($p < 0.001$). Post hoc Dunn–Holm comparisons further indicated that all pairwise comparisons were significant, with winning teams outperforming both drawing and losing teams, and drawing teams also scoring significantly more goals than losing teams.

For shots on target, winning teams had a median of 8.0 (IQR: 6.0–12.0), compared with 5.0 (IQR: 4.0–7.0) for drawing teams and 4.0 (IQR: 3.0–6.0) for losing teams. This difference was statistically significant ($p < 0.001$), indicating that teams achieving more favorable match outcomes tended to produce a greater number of shots on target.

Likewise, shots off target also differed significantly among the three groups ($p < 0.001$), with winning teams recording higher median values than drawing and losing teams.

A similar pattern was observed for the possession-related indicators. Winning teams achieved a median ball possession of 58.0% (IQR: 44.0–72.0), exceeding that of drawing teams (50.0%; IQR: 37.0–63.0) and losing teams (42.0%; IQR: 28.0–56.0). In addition, the median pass accuracy of winning teams reached 84.0% (IQR: 77.0–89.0), compared with 77.0% (IQR: 72.0–83.0) for drawing teams and 75.0% (IQR: 69.0–81.0) for losing teams. Both variables showed statistically significant differences ($p < 0.001$), suggesting that greater ball possession and higher passing accuracy were associated with successful match outcomes. In contrast, tackles ($p = 0.189$), missed penalties ($p = 0.078$), and red cards ($p = 0.581$) did not differ significantly among the three match outcome groups. These findings indicate that these variables were not key discriminators of winning, drawing, and losing teams in the present study.

Regarding disciplinary performance, fouls committed and yellow cards demonstrated statistically significant differences ($p < 0.05$). However, their relatively small epsilon-squared (ϵ^2) effect sizes indicate that their contributions to differences in match outcomes were substantially weaker than those of technical performance indicators such as goals scored, shots on target, ball possession, and pass accuracy.

Overall, the findings demonstrate that winning teams consistently recorded higher values for goals scored, shots on target, ball possession, and pass accuracy than both drawing and losing teams. These results suggest that attacking effectiveness and the ability to control possession are the performance indicators most strongly associated with team success in the 2026 National Collegiate Futsal Series.

Discussion

The findings of this study indicate that most match performance indicators differed significantly among winning, drawing, and losing teams in the 2026 National Collegiate Futsal Series (NCFS). Indicators related to attacking effectiveness namely goals scored, shots on target, shots off target, ball possession, and pass accuracy were the strongest factors distinguishing match outcomes (Sivrić, Brod, dan Brod 2026). In contrast, defensive indicators such as tackles, missed penalties, and red cards did not differ significantly among the three groups, whereas fouls committed and yellow cards showed statistically significant differences but with relatively small effect sizes.

These findings support those of Castellano et al. (2012), who reported that total shots, shots on target, and ball possession were the primary performance indicators distinguishing winning, drawing, and losing teams across three FIFA World Cup tournaments. Using discriminant analysis, Castellano et al. demonstrated that attacking-related indicators had substantially greater discriminatory power than defensive variables in explaining team success. Accordingly, match success appears to depend more on a team's ability to create scoring opportunities, control the game, and maximize attacking efficiency than on the volume of defensive actions performed.

The present study further demonstrated that goals scored was the most prominent indicator differentiating winning, drawing, and losing teams. Winning teams recorded significantly higher median values for goals scored than both drawing and losing teams, suggesting that finishing efficiency is a decisive factor in determining match outcomes. This finding is consistent with Castellano et al. (2012), who argued that successful performance is strongly influenced by attacking effectiveness, particularly the ability to convert scoring opportunities into goals. Similar evidence was reported by Rabbani et al. (2026), who found that the success of the Indonesian National Futsal Team during the 2024 AFF Futsal Championship was determined not only by the number of goal-scoring opportunities created but, more importantly, by the team's ability to convert those opportunities into goals through effective finishing. Collectively, these findings suggest that successful goal scoring results from the combination of sound decision-making, effective finishing techniques, and well-organized attacking play (Dye et al. 2026).

In addition to goals scored, shots on target also differed significantly among the three match outcome groups. This finding is consistent with Castellano et al. (2012), who identified shots on target as one of the strongest discriminating variables associated with team success. A greater number of shots on target increases the likelihood of scoring and, consequently, of winning matches. The present findings are further supported by Fadilah and Raharja (2025), who emphasized that shots on target represent a key performance indicator in team performance evaluation because they are directly associated with goal-scoring opportunities. Therefore, the quality and accuracy of shooting appear to be more important than simply producing a higher number of shooting attempts.

Regarding shots off target, the present study also identified significant differences among winning, drawing, and losing teams. Although shots off target do not directly

result in goals, a higher number of shooting attempts reflects a team's ability to generate attacking opportunities and penetrate the opponent's defensive area. This finding is consistent with Castellano et al. (2012), who suggested that attacking volume is one of the defining characteristics of successful teams. However, the present results also indicate that match success is determined not merely by the number of shooting attempts but by the effectiveness with which those attempts are converted into goals (Tsaniyah et al. 2025).

With respect to game control, ball possession differed significantly according to match outcome. Winning teams consistently recorded higher ball possession than both drawing and losing teams. These findings reinforce those reported by Castellano et al. (2012), who identified ball possession as one of the principal indicators of team success because it provides greater opportunities to control the tempo of the game, reduce opponent pressure, and create more attacking opportunities. Similar findings were reported by Zulkarnain and Widiawati (2026), who emphasized that ball possession is a fundamental component of futsal performance evaluation, as it enables teams to maintain game dominance and develop attacking sequences more effectively.

Pass accuracy also differed significantly among the three match outcome groups. Higher passing accuracy enables teams to maintain ball circulation, minimize loss of possession, and construct attacks in a more organized manner. Although Castellano et al. (2012) primarily emphasized ball possession and attacking indicators as the main determinants of team success, the present findings suggest that the quality of ball distribution through accurate passing is also a critical component of performance in university futsal. This interpretation is supported by Prasetyo et al. (2023), who reported that high passing accuracy allows teams to sustain the flow of play and build attacks more effectively. Similarly, Ratri and Yuwono (2023) found that the combination of effective passing and accurate shooting contributes to greater game dominance while simultaneously increasing goal-scoring opportunities. Collectively, these findings indicate that ball possession, passing accuracy, and finishing efficiency represent interconnected performance indicators that contribute to successful team performance (Lovato dan Barreira 2026).

In contrast to the attacking variables, tackles, missed penalties, and red cards did not differ significantly among winning, drawing, and losing teams. These findings

suggest that defensive actions and isolated match incidents were not the primary factors distinguishing successful teams in the 2026 National Collegiate Futsal Series. This result indirectly supports the findings of Castellano et al. (2012), who likewise demonstrated that attacking indicators possess greater discriminatory power than most defensive variables. Therefore, success in university futsal appears to depend more on the quality of play during ball possession and attacking organization than on the intensity of defensive actions.

In contrast, fouls committed and yellow cards showed statistically significant differences among the three match outcome groups. However, their relatively small effect sizes indicate that their contributions to match outcomes were considerably lower than those of technical performance indicators such as goals scored, shots on target, ball possession, and pass accuracy. These findings suggest that, although disciplinary aspects may influence the course of a match, they are not the dominant determinants of victory. This observation further supports the conclusions of Castellano et al. (2012), who argued that team success is influenced more by attacking effectiveness and the ability to control the game than by disciplinary or defensive indicators.

Overall, the present study not only confirms the findings of Castellano et al. (2012) regarding the importance of attacking performance indicators as the primary discriminators of winning, drawing, and losing teams but also extends their applicability to the context of university futsal competitions in Indonesia. The consistency of the present findings with those reported by Rabbani et al. (2026), Fadilah and Raharja (2025), Zulkarnain and Widiawati (2026), Prasetyo et al. (2023), and Ratri and Yuwono (2023) further reinforces the conclusion that attacking effectiveness, ball possession, and passing quality constitute the fundamental components of successful team performance. From a practical perspective, these findings suggest that training programs for university futsal teams should prioritize the development of finishing ability, shooting accuracy, passing quality, and ball possession through training strategies informed by match performance analysis.

CONCLUSION

This study provides an overview of the match performance indicators of university futsal teams competing in the 2026 National Collegiate Futsal Series (NCFS). The findings demonstrate that team performance is influenced by a combination of

technical and tactical factors reflected in official match statistics. It is necessary to emphasize the limitations regarding generalizability. The research findings are directly applicable only to the NCFS 2026 context and do not necessarily represent professional, youth, or international competitions. The results offer valuable insights for coaches, athletes, and team managers in evaluating team performance and designing more targeted, data-driven training programs. Furthermore, this study provides a useful reference for future research investigating match performance analysis in futsal across different levels of competition.

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