Karakoç, (2026), Vol 4, No 2, 20-24
Journal of Innovation & Technology in Human Kinetics

RESEARCH ARTICLE

Technical performance differences between winning, drawing, and losing teams at the 2026 FIFA World Cup

Barış Karakoç

Faculty of Sport Sciences, Halic University, İstanbul, Türkiye.

Abstract

Aim: This study examined differences in technical performance variables among winning, drawing, and losing teams during the 2026 FIFA World Cup. **Methods:** The study analyzed all 104 matches played during the tournament. Eighteen technical performance variables were examined across six domains: offensive productivity, build-up/passing, defensive/pressing actions, set pieces, attack type, and discipline. Data were obtained from SportsBase. Statistical analyses were conducted using JASP (v.0.97.1, Netherlands), with significance set at $p < .05$. Data distribution was assessed using normality tests, and because the assumption of normality was not met, the Kruskal-Wallis test was used for group comparisons. The Benjamini-Hochberg false discovery rate (FDR) correction was applied for multiple comparisons across the technical variables. **Results:** Winning teams demonstrated significantly greater offensive productivity than drawing and losing teams, including goals scored (2.68 ± 1.33 vs. 0.88 ± 0.79 and 0.65 ± 0.76; p(FDR) < .001, $\varepsilon^2 = .506$), xG (2.00 ± 0.90 vs. 1.34 ± 0.87 and 0.95 ± 0.75; $\varepsilon^2 = .281$), shots on target percentage ($\varepsilon^2 = .141$), and chances successful percentage ($\varepsilon^2 = .200$). Winners also showed higher pass accuracy, key passes, and ball possession, with possession differing progressively across winning, drawing, and losing teams ($\varepsilon^2 = .206$). Progressive passes were higher in winning and drawing teams than in losing teams. PPDA, ball recoveries, corners, set-piece goals, positional attack shot percentage, and counterattack shot percentage also differed significantly by match outcome. In contrast, tackle success, interceptions, and fouls did not differ significantly. Winning teams recorded fewer yellow cards than drawing and losing teams. **Conclusions:** In the 2026 FIFA World Cup, stronger possession-based build-up, improved attacking organization, and increased attacking efficacy were more closely linked to match performance than variations in fundamental defensive play. These results emphasize the importance of developing multifaceted technical performance profiles when assessing elite international soccer teams.

Keywords: FIFA World Cup, match outcome, performance analysis, soccer.

Introduction

Soccer, one of the most widely followed sports worldwide, is characterized by a highly complex and multifaceted structure in which players and the ball exhibit continuous variations across time, space, environmental conditions, and tactical demands. Because the frequency and patterns of these variations cannot yet be predicted with complete accuracy, soccer inherently involves unexpected and unpredictable movements (Kubayi, 2020; Morgans et al., 2023). This unpredictability may also be one of the fundamental reasons for the game's enduring interest.

Coaches and researchers have extensively studied soccer for its technical, tactical, physical, and physiological characteristics. Given this multidimensional nature, team success is increasingly recognized as being determined not by isolated variables but by complex combinations of technical and physical actions. For instance, a large-scale analysis of more than 6,000 matches across six major European leagues demonstrated that multidimensional technical performance characteristics explained 65% of the variation in teams' final league standings (Pappalardo & Cintia, 2018). This finding suggests that technical and physical actions performed during matches are not merely random events but are closely associated with competitive success. Accordingly, monitoring and developing key performance indicators (KPIs) are critical for coaches and performance analysts seeking to enhance team performance (Karakoç et al., 2026; Kubayi & Toriola, 2020; Yang et al., 2018). In particular, the technical and tactical dimensions of soccer have been widely investigated because of the availability of match data and the increasing accessibility of open-source datasets. Technical performance variables are commonly evaluated based on characteristics of ball-related actions, including their frequency, location, timing, and whether they are successful or unsuccessful. In data from La Liga and the UEFA Champions League, shots on goal, successful passes (%), crosses, and ball possession emerged as key indicators distinguishing winning teams from their opponents (Lago-Peñas et al., 2010, 2011). Similarly, another study examining the associations between team success and technical and physical performance variables found that 32 technical variables differed significantly among teams finishing in the upper, middle, and lower positions of the league table, with several performance variables demonstrating moderate-to-strong associations with the points accumulated by teams (Andrzejewski et al., 2022).

✉ B. Karakoç, e-mail: bariskarakoc@halic.edu.tr
Received: 18 September 2026/ Accepted: 21 October 2026 / Published Online: 25 October 2026

Furthermore, an analysis of five-season changes in technical variables, including passes, successful passes (%), dribbles, successful dribbles (%), tackles, and tackles won (%), revealed significant differences across seasons only for variables such as dribbles, successful dribbles (%), and tackles (Morgans et al., 2023).

Researchers have obtained soccer performance data from matches played in national and international leagues and tournaments. Among these competitions, the FIFA World Cup is undoubtedly one of the most prominent and extensively studied events, being held every four years and bringing together the world's leading national teams. Numerous studies have examined and compared performance characteristics across different World Cup tournaments. In a multivariate analysis of three consecutive World Cups, 2002, 2006, and 2010, total shots, shots on target, and ball possession were identified as the strongest variables distinguishing winning teams from drawing and losing teams (Castellano et al., 2012). More recently, goal-scoring patterns during the 2018 FIFA World Cup were investigated, revealing that 82.5% of the 169 goals scored during the tournament originated from elaborate attacks, while 69.9% were produced through short-pass combinations (Kubayi, 2020). In another study that used artificial neural networks (ANNs) to predict match outcomes at the 2018 FIFA World Cup, distance covered at 15–20 km/h, together with two technical variables, medium passes attempted and average ball delivery into the attacking third, were identified as the most sensitive parameters for predicting winning outcomes (Hassan et al., 2020).

The technical and tactical structure of soccer continues to evolve, requiring teams to develop increasingly dynamic and flexible strategies to maximize their chances of winning. In particular, the 2026 FIFA World Cup, with the expansion of the tournament to 48 teams, represents a substantially larger and potentially more complex competitive environment than previous World Cups. Although previous studies have investigated technical performance across different FIFA World Cup tournaments, examining the performance characteristics of the current tournament and their potential associations with match outcomes is of considerable importance. Identifying the variables associated with match outcomes in an elite international competition such as the 2026 FIFA World Cup may provide coaches with valuable evidence to inform tactical preparation and offer performance analysts an objective framework for evaluating collective team behaviors. Therefore, the present study aimed to compare technical performance variables across match outcomes (win, draw, and loss) at the 2026 FIFA World Cup. Accordingly, it was hypothesized that technical performance responses would differ according to match outcome.

Methods

The aim of this study was to compare technical performance variables between winning, drawing, and losing teams at the 2026 FIFA World Cup. Match data were obtained from SportsBase, a commercial provider that supplies performance statistics to coaches and researchers across several sports like soccer (Maio et al., 2026). Like other established systems such as OPTA, InStat, and Wyscout, SportsBase depends on trained analysts who code match events from video, either live or post-match. Earlier work has examined the inter-operator reliability of data from comparable providers (Liu et al., 2013; Silva & Marcelino, 2023). All 104 matches of the tournament were included in the analysis. The data are not publicly available; the data provider (SportsBase) granted the author written permission to use the data.

Procedure

Technical performance data for soccer teams were collected via SportsBase (https://auth.sportsbase.world). SportsBase is a professional data provider offering match statistics for coaches and sports performance researchers. The performance data for all matches in the 2026 FIFA World Cup were downloaded from the platform's website and organized in Microsoft Excel spreadsheets. The dataset comprised 18 technical performance variables examined across six domains: offensive productivity, build-up/passing, defensive/pressing actions, set pieces, attack type, and discipline. In Excel, an additional column was created to record each team's match outcome (win, draw, or loss). The prepared dataset was then imported into JASP for statistical analysis.

Data Analyses

All statistical analyses were conducted using JASP (v.0.97.1, Netherlands). Descriptive statistics are presented as mean ± standard deviation (SD). The normality of data distribution was assessed using the Shapiro-Wilk test. As the assumption of normality was not met for the variables analyzed, non-parametric procedures were used. Differences among match outcomes (win, draw, and loss) were examined using the Kruskal-Wallis H test, and Dunn's post hoc test was applied for pairwise comparisons when a significant overall effect was found. Effect sizes for the Kruskal-Wallis test were reported as epsilon-squared (ε^2). To control for the increased risk of Type I error arising from multiple comparisons across the technical variables, the Benjamini-Hochberg false discovery rate (FDR) correction was applied. Statistical significance was set at $p < .05$ after FDR correction (reported as p (FDR) in the tables).

Results

All 104 matches of the 2026 FIFA World Cup were included in the analysis, yielding 208 team-level observations (two per match). For each observation, 18 technical performance variables across six domains (offensive productivity, build-up/passing, defensive/pressing actions, set pieces, attack type, and discipline) were analysed.

The majority of offensive and possession-related technical metrics showed significant differences across match-outcome groups (Table 1). With considerably higher Goals Scored, Expected Goals (xG),Shots on Target %, and Chances Successful % than both drawing and losing teams,

Table 1. Match statistics by match outcome.

Variables	W (n=80)	D (n=48)	L (n=80)	H	p (FDR)	ε²
Goals Scored	2.68 ± 1.33a	0.88 ± 0.79b	0.65 ± 0.76b	104.789	<.001***	.506
xG	2.00 ± 0.90a	1.34 ± 0.87b	0.95 ± 0.75c	58.110	<.001***	.281
Shots on Target %	0.47 ± 0.14a	0.38 ± 0.15b	0.33 ± 0.17b	29.101	<.001***	.141
Chances Successful %	0.36 ± 0.15a	0.21 ± 0.23b	0.18 ± 0.23b	41.487	<.001***	.200
Pass Accuracy %	0.87 ± 0.04a	0.84 ± 0.05b	0.83 ± 0.04b	36.051	<.001***	.174
Progressive Passes	94.84 ± 21.86a	91.92 ± 27.19a	79.28 ± 20.49b	22.164	<.001***	.107
Key Passes	8.81 ± 4.45a	6.25 ± 4.37b	4.62 ± 3.08b	45.158	<.001***	.218
Ball Possession %	0.56 ± 0.10a	0.50 ± 0.14b	0.44 ± 0.10c	42.658	<.001***	.206
Tackle Success %	0.60 ± 0.11	0.59 ± 0.16	0.57 ± 0.13	3.377	.201	.016
Interceptions	47.48 ± 11.63	50.98 ± 14.58	48.89 ± 11.86	2.107	.349	.010
PPDA	7.01 ± 3.17a	8.54 ± 5.39a	9.53 ± 3.59b	24.241	<.001***	.117
Ball Recoveries	44.44 ± 7.0a	44.6 ± 9.07a	40.74 ± 7.18b	9.706	.009**	.047
Corners	5.05 ± 3.02a	5.06 ± 3.52a	3.80 ± 2.81b	11.767	.004**	.057
Set-Piece Goals	0.61 ± 0.77a	0.23 ± 0.42b	0.18 ± 0.44b	20.575	<.001***	.099
Positional Attack Shot %	0.12 ± 0.06a	0.12 ± 0.05a	0.09 ± 0.05b	21.502	<.001***	.104
Counterattack Shot %	0.23 ± 0.14a	0.12 ± 0.13b	0.12 ± 0.11b	29.968	<.001***	.145
Fouls	11.00 ± 3.69	11.71 ± 5.11	12.01 ± 3.95	3.320	.201	.016
Yellow Cards	0.99 ± 1.06a	1.50 ± 1.11b	1.46 ± 1.18b	11.254	.005**	.054

*Superscript letters denote results of Dunn's post-hoc pairwise comparisons and are shown only for variables with a significant omnibus Kruskal-Wallis test; groups sharing the same letter do not differ significantly from each other, while groups with no shared letter differ significantly. Variables with a non-significant omnibus test are left unlettered. *p<.05, **p<.01, ***p<.001 (Benjamini-Hochberg FDR-adjusted).*

winning teams showed better offensive output (all FDR-adjusted p <.001). Goals scored showed the largest between-group impact (ε^2 = .506). Interestingly, xG showed a progressive trend from losing to drawing to winning teams and varied substantially across all three result groups (ε^2 =.281). Build-up and possession indicators showed a similar pattern. While winning and drawing teams had more Progressive Passes than losing teams (all FDR-adjusted p < .001), winning teams had greater Pass Accuracy %, more Key Passes, and greater Ball Possession % than both drawing and losing teams. The effect sizes showed small-to-large group differences, ranging from ε^2 = .107 to .218.

PPDA showed significant group differences in defensive and pressing indicators (p < .001; ε^2 = .117), with winning and drawing teams showing lower values than losing teams. Additionally, winning and drawing teams had more Ball Recoveries than losing teams (p = .009; ε^2 = .047). Conversely, there was no significant difference in Tackle Success % or Interceptions across the three outcome groups (both p >.05). Significant outcome-related variations were also seen in set-piece and attack-type indicators. While Corners were greater in winning and drawing teams than in losing teams (p =.004; ε^2 =.057), winning teams scored more Set-Piece Goals than both drawing and losing teams (p <.001; ε^2 =.099). Additionally, winning teams had higher percentages of Positional-Attack and Counterattack Shots than losing teams, with the latter exhibiting a particularly noticeable difference in Counterattack Shots (ε^2 = .145). In terms of discipline, winning teams received fewer yellow cards than drawing and losing teams (p =.005; ε^2 =.054). However, Fouls did not show a significant difference (p =.201).

Overall, the findings show that while several defensive activity metrics did not significantly differ between groups, offensive productivity, possession, and build-up quality, specific pressing and recovery indicators, and attacking/set-piece effectiveness were the factors that most consistently distinguished match outcomes.

Discussion

The present study examined 18 technical performance variables across all matches of the 2026 FIFA World Cup and demonstrated clear differences in technical performance according to match outcome. The most notable conclusion was that winning teams regularly outperformed drawing and losing teams in terms of offensive output and possession-based build-up. Among all factors analyzed, Goals Scored had the largest effect size, followed by xG, Key Passes, Ball Possession %, and the Chances Successful %. These results lend credence to the idea that success in elite soccer is linked to the coordinated expression of several technical actions that increase the likelihood of creating and converting scoring opportunities, rather than to a single isolated performance element.

Notably, winning, drawing, and losing teams were clearly separated in xG. The greatest xG was recorded by winning teams, followed by drawing and losing teams, suggesting that variations in the quality and potential value of opportunities were associated with variations in the final score. This result builds on earlier World Cup research demonstrating that shots and shots on target are significant predictors of game outcome (Dufour et al., 2017; Liu et al., 2015; Song et al., 2024). The current findings also suggest that a more comprehensive evaluation of offensive performance can be achieved by integrating shooting-related metrics with xG and chance-success indicators, rather than relying solely on the number of attempts (Kubayi & Larkin, 2020; Stafylidis et al., 2026).

The importance of attacking efficiency is further reinforced by the higher Shots on Target and Chance Conversion % of winning teams. Crucially, the advantage of

winning teams extended beyond the final score. Winners also made more Key Passes and showed improved Ball Possession %, Pass Accuracy, and Progressive Passes. The effect of Key Passes was comparatively substantial (ε^2 = .218), with winning teams clearly outperforming both losing and drawing teams. This trend implies that winning teams were more adept at converting possession into actions that directly generated offensive possibilities rather than simply retaining possession (Casal et al., 2017, 2019; Jones et al., 2004). This view is in line with other research showing that passing-related factors are crucial to effective performance and that technical performance traits can account for a significant proportion of variation in team success (Alves et al., 2019; Soroka et al., 2023).

Additionally, Ball Possession % showed a distinct outcome-related gradient, with winning teams recording the highest values, followed by drawing and losing teams. This result is in line with prior research, including studies from past FIFA World Cups, which found possession to be one of the factors that can differentiate winning teams from other teams (Casal et al., 2017; Wang et al., 2022). However, possession by itself should not be seen as a guarantee of success. The concurrent variations in progressive passes, key passes, pass accuracy, xG, and chance success imply that possession volume alone may be less important than possession quality and purpose. In practical terms, effective possession appears to be characterized by the ability to progress the ball and generate meaningful attacking actions rather than simply maintaining control (Alves et al., 2019; Wang et al., 2022). The Progressive Pass outcomes further support this perspective. While both winning and drawing teams recorded more progressive passes than losing teams, there was no discernible difference between them. Therefore, progressive passing seems to differentiate teams that avoid defeat from those that lose, but does not clearly distinguish winning from drawing teams. On the other hand, successful teams were more clearly distinguished by key passes and possession. This contrast may suggest that while progressing, the ball is a crucial condition for competitive performance, transforming progression into dangerous final-third actions may be more directly linked to winning.

The pressing and defending results offer a crucial counterbalance to the attacking outcomes. There were no discernible variations in Tackle Success %, Interceptions, or Fouls according to match outcome. These results imply that at the highest international level, winning teams may not be distinguished from losing or drawing teams solely by the basic frequency or effectiveness of certain defensive maneuvers (Alves et al., 2019). However, there were notable differences in PPDA, with winning and drawing teams displaying lower values than losing teams. This suggests that teams that avoided defeat could have applied more active pressure during the opposition's possession, as lower PPDA often indicates greater pressing intensity. The lack of notable variation in interceptions and tackle success suggests that press-related organization may be more informative than discrete defensive actions.

A similar tendency was seen in Ball Recoveries. Although the effect was small (ε^2 = .047), winning and drawing teams reported considerably more recoveries than losing teams. This result may be viewed alongside the PPDA findings, indicating that competitive control may be preserved through efficient pressure and subsequent possession recovery (Peters et al., 2026; Praça et al., 2026). However, these correlations should not be taken as proof that a particular pressing technique directly leads to a win because the current study is observational and relies on match-level technical data.

The differentiation of match results was also influenced by set-piece and attack-type factors. While winning and drawing teams generated more Corners than losing teams, winning teams scored more Set-Piece Goals than both. These results suggest that in the top soccer tournament, set pieces might be a significant additional source of attacking advantage (Clark et al., 2024; Sarmento et al., 2025). While the proportion of Counterattack Shots was clearly greater among winning teams, the percentage of Positional Attack Shots was higher among winning and drawing teams than among losing teams. The combination of these results suggests that effective teams could benefit from the ability to create shooting opportunities through a variety of attacking structures rather than relying solely on a single offensive plan. This explanation aligns with prior World Cup data highlighting the significance of structured passing combinations and planned offensive sequences in goal creation.

While there was no discernible difference in the number of Fouls, winning teams received fewer Yellow Cards than drawing and losing teams. This discrepancy between Yellow Cards and Fouls suggests that the number of fouls committed alone cannot account for disciplinary outcomes. The lower frequency of Yellow Cards among winning teams may reflect differences in game management, defensive approach, or the circumstances under which defensive actions were performed, although the effect was small (ε^2 = .054). Nevertheless, the available data do not allow these underlying processes to be established directly.

Conclusion

Overall, the results show that while tackle success, interceptions, and fouls did not differ by match outcome, winning at the 2026 FIFA World Cup was primarily linked to offensive effectiveness, possession quality, progressive build-up, chance creation, and the ability to generate scoring opportunities through structured and transitional attacks. These results generally corroborate the study's hypothesis and recommend that, rather than relying solely on isolated indicators, coaches and performance analysts assess technical performance using multidimensional profiles that incorporate possession and passing quality, key-pass production, chance quality, pressing efficiency, ball recoveries, set-piece production, and attacking transitions. However, given the observational nature of the study and the unique competitive environment of the 2026 FIFA World Cup, these interpretations should be treated with caution.

Authors' Contribution

Study Design: BK; Data Collection: BK; Statistical Analysis: BK; Manuscript Preparation: BK; Funds Collection: BK.

Ethical Approval

Ethical approval was not required as the study did not involve human subjects or interventions. The study was carried out in accordance with the Declaration of Helsinki.

Funding

The authors declare that the study received no funding.

Conflict of Interest

The authors hereby declare that there was no conflict of interest in conducting this research.

References

Alves, D. L., Osiecki, R., Palumbo, D. P., Moiano-Junior, J. V. M., Oneda, G., & Cruz, R. (2019). What variables can differentiate winning and losing teams in the group and final stages of the 2018 FIFA World Cup? *International Journal of Performance Analysis in Sport*, 19(2), 248–257. https://doi.org/10.1080/24748668.2019.1593096

Andrzejewski, M., Oliva-Lozano, J. M., Chmura, P., Chmura, J., Czarniecki, S., Kowalczuk, E., Rokita, A., Muyor, J. M., & Konefał, M. (2022). Analysis of team success based on match technical and running performance in a professional soccer league. B*MC Sports Science, Medicine and Rehabilitation,* 14(1), 82. https://doi.org/10.1186/s13102-022-00473-7

Casal, C. A., Anguera, M. T., Maneiro, R., & Losada, J. L. (2019). Possession in football: More than a quantitative aspect–a mixed method study. *Front Psychol*, 10, 501. https://doi.org/10.3389/fpsyg.2019.00501

Casal, C. A., Maneiro, R., Ardá, T., Marí, F. J., & Losada, J. L. (2017). Possession zone as a performance indicator in football. The game of the best teams. *Front Psychol*, 8, 1176. https://doi.org/10.3389/fpsyg.2017.01176

Castellano, J., Casamichana, D., & Lago, C. (2012). The use of match statistics that discriminate between successful and unsuccessful soccer teams. *Journal of Human Kinetics*, 31, 139-147. https://doi.org/10.2478/v10078-012-0015-7

Clark, A., Corsie, M., Gouveia, V., & Nunes, N. A. (2024). FIFA World Cup 2022 Qatar corner kicks: An analysis on effectiveness and match context. *Qeios*. https://pure.solent.ac.uk/en/publications/fifa-world-cup-2022-qatar-corner-kicks-an-analysis-on-effectivene-2/

Dufour, M., Phillips, J., & Ernwein, V. (2017). What makes the difference? Analysis of the 2014 World Cup. *Journal of Human Sport and Exercise*, 12(3), 616–629.

Hassan, A., Akl, A.-R., Hassan, I., & Sunderland, C. (2020). Predicting wins, losses and attributes' sensitivities in the soccer world cup 2018 using neural network analysis. *Sensors*, 20(11), 3213. https://doi.org/10.3390/s20113213

Jones, P. D., James, N., & Mellalieu, S. D. (2004). Possession as a performance indicator in soccer. *International Journal of Performance Analysis in Sport,* 4(1), 98–102. https://doi.org/10.1080/24748668.2004.11868295

Karakoç, B., Şanli, E., & Aşçı, A. (2026). Determining the Contribution of Performance Variables to Game Outcomes in Elite Male Soccer. Pamukkale Journal of Sport Sciences, 17(1), 70-92. https://doi.org/10.54141/psbd.1681109

Kubayi, A. (2020). Analysis of goal scoring patterns in the 2018 FIFA World Cup. *Journal of Human Kinetics*, 71, 205-210. https://doi.org/10.2478/hukin-2019-0084

Kubayi, A., & Larkin, P. (2020). Technical performance of soccer teams according to match outcome at the 2019 FIFA Women's World Cup. *International Journal of Performance Analysis in Sport*, 20(5), 908–916. https://doi.org/10.1080/24748668.2020.1809320

Kubayi, A., & Toriola, A. (2020). Match performance indicators that discriminated between winning, drawing and losing teams in the 2017 AFCON Soccer Championship. *Journal of Human Kinetics*, 72, 215-221. https://doi.org/10.2478/hukin-2019-0108

Lago-Peñas, C., Lago-Ballesteros, J., Dellal, A., & Gómez, M. (2010). Game-related statistics that discriminated winning, drawing and losing teams from the Spanish soccer league. *Journal of Sports Science & Medicine*, 9(2), 288-293.

Lago-Peñas, C., Lago-Ballesteros, J., & Rey, E. (2011). Differences in performance indicators between winning and losing teams in the UEFA Champions League. *Journal of Human Kinetics*, 27(1), 135–146.

Liu, H., Gomez, M.-Á., Lago-Peñas, C., & Sampaio, J. (2015). Match statistics related to winning in the group stage of 2014 Brazil FIFA World Cup. *Journal of Sports Sciences*, 33(12), 1205–1213. https://doi.org/10.1080/02640414.2015.1022578

Liu, H., Hopkins, W., Gómez, A. M., & Molinuevo, S. J. (2013). Inter-operator reliability of live football match statistics from OPTA Sportsdata. *International Journal of Performance Analysis in Sport*, 13(3), 803–821. https://doi.org/10.1080/24748668.2013.11868690

Maio, E., Teixeira, J. E., Branquinho, L., Silva, A. J., Forte, P., & Ferraz, R. (2026). Transferability of ıntra-and ınter-sectoral coordination between training tasks and official matches in semi-professional football players. *Journal of Functional Morphology and Kinesiology*, 11(3), 364. https://doi.org/10.3390/jfmk11030364

Morgans, R., Orme, P., Bezuglov, E., & Di Michele, R. (2023). Technical and physical performance across five consecutive seasons in elite European Soccer. *International Journal of Sports Science & Coaching*, 18(3), 839–847. https://doi.org/10.1177/17479541221089247

Pappalardo, L., & Cintia, P. (2018). Quantifying the relation between performance and success in soccer. *Advances in Complex Systems*, 21(03n04), 1750014. https://doi.org/10.1142/S021952591750014X

Peters, A., Parmar, N., Davies, M., & James, N. (2026). Applying an Expected Pass Turnovers model to inform pressing strategies in professional football. *International Journal of Performance Analysis in Sport*, 1–16. https://doi.org/10.1080/24748668.2026.2671547

Praça, G. M., Oliveira, P. H. D. A., Brandão, L. H. A., Abreu, C. D. O., Andrade, A. G. P. D., & Nobari, H. (2026). Parking the bus or high pressing? Defensive tactical insights from the 2022 FIFA Men's World Cup. *Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology*, 240(2), 331–338. https://doi.org/10.1177/17543371241254600

Sarmento, H., Afonso, J., Clemente, F. M., Gouveia, É. R., Ordoñez-Saavedra, N., Silva, J. R., Barrera, J., Field, A., & Martinho, D. V. (2025). Unlocking the power of set pieces in men's professional football – a scoping review. *International Journal of Sports Medicine*, 46(08), 537–561. https://doi.org/10.1055/a-2563-0323

Silva, H., & Marcelino, R. (2023). Inter-operator reliability of InStat Scout in female football games. *Science & Sports*, 38(1), 42–46.

Song, Y., Sun, G., Wu, C., Pang, B., Zhao, W., & Zhou, R. (2024). Construction of 2022 Qatar World Cup match result prediction model and analysis of performance indicators. *Frontiers in Sports and Active Living*, 6, 1410632. https://doi.org/10.3389/fspor.2024.1410632

Soroka, A., Duda, H., Stuła, A., Ambroży, T., Kromke, C., & Te Poel, H.-D. (2023). Ball possession as an indicator identifying differences in the efficient operation of football teams during the world cup-Qatar 2022. *Journal of Kinesiology and Exercise Sciences*, 33(102), 9-20. https://doi.org/10.5604/01.3001.0053.5968

Stafylidis, C., Gourgoulis, V., Ispirlidis, I., Chatzinikolaou, A., & Stafylidis, A. (2026). Winning patterns and predictive modeling in FIFA World Cup 2022: Analysis of spatial, temporal, goal-scoring trends, and tactical indicators. *Journal of Physical Education and Sport*, 26(3), 511–526. https://doi.org/10.7752/jpes.2026.03053

Wang, S. H., Qin, Y., Jia, Y., & Igor, K. E. (2022). A systematic review about the performance indicators related to ball possession. *PloS One*, 17(3), e0265540.

Yang, G., Leicht, A. S., Lago, C., & Gómez, M.-Á. (2018). Key team physical and technical performance indicators indicative of team quality in the soccer Chinese super league. *Research in Sports Medicine*, 26(2), 158–167. https://doi.org/10.1080/15438627.2018.1431539