Journal of Human Kinetics volume 104/2026, 165–179 DOI: 10.5114/jhk/216051
Section III – Sports and Physical Activity

Decoding Victory in Professional Soccer: How Tactical, Technical and Running Performance Shape Match Success in Spanish *LaLiga*

by
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The study aimed to analyze tactical, technical, and running performance variables according to the match outcome in Spanish LaLiga soccer matches. A sample of 20 teams participating in 380 matches during the 2020/2021 LaLiga season was examined. Each match was evaluated for eight tactical, ten technical, six physical, and four contextual variables (match location, opponent ranking, team ranking and numerical imbalance) using a reliable and validated optical tracking system. Linear mixed generalized models revealed that teams implemented an offensive style with a moderate decrease in positional attacks (Coefficient (β) = −13.11; p < 0.001), presented a small decrease in set pieces (β = −2.15; p < 0.001), but slightly more counterattacks (β = 1.18; p < 0.05) in wins than in losses. Defensively, teams exhibited a moderate increase in low-block sequences (β = 5.01; p < 0.001) and defensive set pieces (β = 2.23; p < 0.001), as well as a slight decrease in high-block sequences (β = −2.80; p < 0.05) in wins versus losses. Physically (in km), teams covered moderately less total distance (TD) (β = −4.16; p < 0.001) and high-intensity running distance (HIRD) (β = −0.10; p < 0.001), but more high-speed distance (HSR) (β = 0.10; p < 0.001) offensively in wins versus losses. Contrarily, slightly more TD (β = 3.69; p < 0.001) and less HSR (β = −0.72; p < 0.05) were covered defensively during victories. In conclusion, winning teams in LaLiga adopted a more direct playing style, emphasizing more counterattacks, HSR in attack and low-block defensive sequences

***Keywords**: match demands; success; style of play; playing tactics; team sport*

Introduction

Soccer is a dynamic and complex sport in which collective match performance emerges from the constant interaction among technical, tactical, physical, and contextual variables (Duarte et al., 2012; Travassos et al., 2013). The analysis of key performance indicators in professional soccer has increased considerably in recent years, driven by the greater availability of data and more sophisticated evaluation methods, including tracking data, event data and GPS devices (Goes et al., 2020; Rein and Memmert, 2016).

Recent scientific literature has aimed to explore the key performance indicators associated with match outcomes in professional soccer (Chmura et al., 2018; Modric et al., 2023a). In this search, several studies have revealed that technical and tactical differences between matches won and lost by professional teams in multiple leagues and competitions are mainly manifested in the number of shots on goal, the effectiveness of the shots (Castellano et al., 2012; Konefal et al., 2019; Liu et al., 2015; Mao et al., 2016), as well as implementing a more elaborated style of play (Castellano and Pic, 2019). For example, Castellano et al. (2012) found

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that winning teams attempted 14.2 ± 5.1 shots per match, with 7.1 ± 3.6 on target, whereas losing teams recorded 10.7 ± 4.4 shots and 4.0 ± 2.2 on target across the 2002, 2006, and 2010 World Cups. Similarly, Parim et al. (2021) analyzed 10 seasons of the UEFA Champions League and reported that winning teams averaged 15.57 ± 5.93 shots per match, compared to 11.04 ± 5.15 for losing teams during the group stage.

However, physical investigations show inconsistent evidence regarding match outcomes and their relationship with running performance. Some studies reported higher running metrics in wins among Brazilian professional players (Aquino et al., 2020; Guilherme et al., 2021), whereas other studies observed the opposite effect in the Croatian First Division (Jerkovic et al., 2022) and the UEFA Champions League (Modric et al., 2023b).

Moreover, it is interesting to observe that recent scientific evidence identified differences in running performance across playing positions concerning match outcomes. For instance, Andrzejewski et al. (2017) found that central defenders and full-backs covered shorter distances at high intensity in matches won, whereas forwards and wide midfielders covered significantly longer sprint distances in won than in lost matches in German Bundesliga. Also in German professional soccer, Chmura et al. (2018) observed that winning was physically more demanding for offensive players, but losing was more demanding for defensive players. Similarly, Modric et al. (2024) observed that forwards (943 ± 49 m vs. 784 ± 57 m) and wingers (1137 ± 63 m vs. 926 ± 64 m) covered more HIR distance in won matches compared to the lost ones. In contrast, central defenders (582 ± 25 m vs. 681 ± 26 m) and full-backs (1007 ± 36 m vs. 1081 ± 36 m) covered more HIR distance in lost than in won matches in UEFA Champions League matches.

It is key to note that the differences among studies may be due to the particular tactical and technical characteristics of each competition (García-Aliaga et al., 2023; Li and Zhao, 2021; Prieto-González et al., 2025), what may influence match success. In the European context, the study of Mitrotasios el al. (2019) observed that Spanish *LaLiga* had a more combinative style of play, while English Premier League and German Bundesliga showed a high degree of verticality in the creation of goal scoring opportunities.

Based on previous literature, one of the key challenges in soccer match analysis remains the integrated assessment of representative technical, tactical, and physical variables to evaluate offensive and defensive metrics that capture broader and more accurate performance indicators contributing to match success (Modric et al., 2023a; Teixera et al., 2021). In this sense, the recent emergence of tracking data systems allows evaluating more complex and collective dimensions (Goes et al., 2021; Link et al., 2016) such as the tactical characteristics of teams' offensive and defensive sequences. In this line, previous literature has defined several types of the attack such as a positional attack, a fast attack, a direct attack, and a counterattack (Aranda et al., 2019; Sarmento et al., 2018), as well as different types of defending (Clemente et al., 2022; Llana et al., 2022). However, to our knowledge, there is a lack of evidence regarding how the use of these types of sequences varies according to the match outcome in professional soccer.

Furthermore, most current studies focused on general running demands during matches. In this sense, the physical analysis of match performance should consider the effective playing time (Lago-Peñas et al., 2024), as well as differentiate between the offensive and defensive moments (Brito Souza et al., 2020; Guilherme Goncalves et al., 2024) to offer a more accurate analysis when interpreting match running performance of professional soccer players in relation to the match outcome.

Nevertheless, winning or losing a match not only depends on physical, tactical or technical variables but also contextual factors. In this regard, variables such as the match location, the team ranking, the opponent team ranking, and player dismissals have been shown to have a massive impact on match performance in professional soccer. In summary, playing at home increases the match running performance (González-Rodenas et al., 2024) as well as increases the ball possession, passes and implementation of combinative attacks (Fernández-Navarro et al., 2018; Gonzalez-Rodenas et al., 2020). Besides, playing against high-ranking opponents increases the match running performance (Castellano et al., 2024), as well as decreases the ball possession, passing accuracy and offensive performance (Fernández-Navarro et

al., 2018; Gonzalez-Rodenas et al., 2020). Also, higher ranked teams exhibit longer offensive sequences and higher passing accuracy than lower ranked teams (González-Rodenas et al., 2023). Finally, teams reduced to 10 players tend to spend more time in the defending third and less time in the attacking third after the dismissal (O´Donoghue and Robinson, 2016), as well as show a decreased performance post-player dismissal with respect to total passes, the number of touches and short passes, while the team in numerical superiority increases their technical performance (Lago-Peñas et al., 2017). Thus, future research should include the effects on contextual variables to analyze the key performance indicators in professional soccer.

In this context, it is important to explore the key factors that contribute to winning in soccer to support the overall training process and match management (Filetti et al., 2017). First, while previous studies have examined technical and tactical differences between match outcomes (Konefał et al., 2018; Morgans et al., 2023), limited research has investigated how different types of offensive and defensive sequences vary in relation to match success. Furthermore, findings on the relationship between physical performance and match outcomes remain inconsistent, with contrasting results across different leagues and competitions (Aquino et al., 2017; Barthelemy et al., 2024; Chmura et al., 2018; Morgans et al., 2024). Additionally, most studies have focused on overall running demands without considering effective playing time or differentiating physical efforts during offensive and defensive phases (Asian-Clemente et al., 2024; Trewin et al., 2017).

Thus, this study aimed to address that gap by combining technical, tactical, and physical indicators with contextual variables, offering a more holistic understanding of the factors that influence success in elite soccer. Therefore, this study focused on analyzing tactical, technical, and running performance variables based on match outcomes in Spanish *LaLiga* matches, while accounting for the effects of key contextual variables.

Methods

Sample

The sample was composed of 20 professional soccer teams that competed in the top first division of the men's soccer in Spain (*LaLiga*) during the 2021–2022 season. A total of 760 team performance analyses were included during the 380 official matches played during that season. The data captured the absolute values for each team and match, and all matches were considered for inclusion in the analysis.

To assess the statistical power of this study, a post hoc power analysis was conducted using a simr package in R, which enables simulation-based power estimation in mixed models. The effect size with the highest variance in the model was for "total passes", with a marginal R^2 of 0.38. Based on this variable, the calculated F^2 effect size was 0.35, corresponding to a moderate effect size according to Cohen's criteria. This analysis suggested that the designed model provided sufficient power (>80%) to detect moderate-to-large effects to identify significant differences ($\alpha < 0.05$) according to the match outcome.

All competitive matches were played on a natural grass surface within a pitch dimension of ~100 x 70 m. The competition lasted from August 13, 2021, to May 22, 2022, for a total of 38 matchdays and ten matches per matchday. Data were collected from *LaLiga* which authorized the analysis of the variables included in this investigation and the publication of results with a scientific objective. In accordance with the ethical guidelines of *LaLiga*, this investigation did not include information that would identify soccer players. Ethical approval was not required for this study, as confirmed by the Ethics Committee of the Rey Juan Carlos University, Fuenlabrada, Spain, due to its observational nature and the use of anonymized data (certificate issued on 25 March 2021).

Procedures

Data were captured using the TRACAB (ChyronHego, New York, USA) multicamera computerized optical tracking system which has a sampling frequency of 25 Hz, and processed using the Mediacoach software (*LaLiga*, Madrid, Spain). Additionally, data from Opta (Stats Perform, London, UK) were integrated in the Mediacoach software to obtain simultaneously data of players' running patterns and technical and tactical actions during the matches. Mediacoach collects event technical and tactical data from OPTA and

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organizes this information to facilitate the analysis of key performance variables for professional soccer teams. These data are synchronized with spatiotemporal tracking information, enabling a contextualized evaluation of the players and team' behaviors in relation to both the ball and tactical positioning. This system has been proved to be a valid and reliable tool to analyze both players' running performance as well as individual and team game statistics (Felipe et al., 2019; Liu et al., 2017; Pons et al., 2019) and it has been used in recent prestigious investigations (García-Calvo et al., 2022; Lago-Peñas et al., 2022). To show a clearer picture of team's behaviors during competition, the data of these variables obtained at the level of a player (*e.g.,* running metrics) were accumulated to show team's performances.

Variables

The variables selected for the present study were divided into three categories: tactical, technical and physical. The detailed explanation of these variables is provided in Table 1. Firstly, eight teams' tactical variables concerning phases of the attack and the defense were analyzed. These variables described the phases of play developed by the teams and considered moments of the game where the teams kept the ball possession for at least three seconds. In each of these >3-s phases, the way teams behaved tactically on the field was analyzed and recorded following the categorization of previous studies (Aranda et al., 2019; Llana et al., 2022; Sarmento et al., 2018). The determination of the phases of the attack and the defense was conducted by applying rule-based algorithms based on player locations, teams' defensive lines, and events at each possession's frame.

Secondly, in line with previous studies (Brito Souza et al., 2019; Lago-Peñas et al., 2022; Oliva-Lozano et al., 2023) this study included the analysis of technical variables that evaluated key performance indicators such as passing performance, crossing, recovering the ball as well as creating and conceding goal scoring opportunities.

Finally, the teams' match offensive and defensive running performance variables (in km) analyzed were total distance covered (TD), distance covered at high-intensity running (HIR) (21–24 $km \cdot h^{-1}$), and high-speed running distance (HSR) (>28 $km \cdot h^{-1}$) (González-Rodenas et al., 2024; Ponce-Borbón et al., 2024), considering the effective playing time (Lago-Peñas et al., 2024). All these data were obtained for each match and for each of the two competing teams. The final match outcome of the match was used to categorize the data.

Statistical Analysis

All analyses were conducted using statistical software (SPSS Inc., V20, Chicago, IL, USA). Initially, a Kolmogorov-Smirnov test was used to confirm the data normality of the data.

Given the hierarchical nature of soccer team performance, characterized by each team's unique playing style, a multilevel mixed model was employed to group collective performance (level 2) by teams (level 1). With this organization of the data, a generalized linear model was carried out to investigate the impact of the match outcome (fixed effects) on various tactical, technical, and physical variables, while accounting for team effects (random effects).

For a more comprehensive analysis, the influence of several contextual variables known to significantly impact match technical, tactical and physical performance was considered in the model. These variables included the match location (home vs. away), opponent and team ranking quartiles (first, second, third, and fourth quartiles), as well as matches with numerical superiority or inferiority due to a player's dismissals.

In the model construction, the probability distribution was assumed to be normal, and the link function used was identity, aligning with the assumptions of linear modeling in the context of the analyzed performance variables. To assess the adequacy of our generalized linear mixed model (GLMM), we compared the Akaike Information Criterion (AIC) between a null model (including only random effects) and a full model (incorporating both fixed and random effects). The model demonstrated a strong fit across tactical, technical, and physical variables, as indicated by lower AIC values in the full model compared to the null model. Specifically, tactical behaviors showed clear improvements, particularly in offensive set pieces and counterattacks, confirming that the included fixed effects effectively explained these actions. Technical actions exhibited substantial fit enhancements, especially for total passes, crosses, and through passes, while physical variables also

benefited from the inclusion of fixed effects, TD and HSR without the ball showing strong fit improvements. Overall, the model provided a robust and reliable framework to explain tactical, technical, and physical demands according to the match outcome and contextual variables in soccer.

Also, the analysis included both the marginal coefficient of determination (R^2m) and the conditional coefficient of determination (R^2c) in the results tables. The marginal R^2 quantified the proportion of variance explained solely by the fixed effects, while the conditional R^2 accounted for both fixed and random effects, offering a more comprehensive measure of the total variance explained by the model, including individual variability across players.

To gauge the magnitude of the fixed effects, the Cohen F^2 statistic was computed as the effect size (ES). Cohen F^2 represented the proportion of variance in the outcome explained by the fixed effects incorporated into the model. Effect sizes were classified as trivial when below 0.02, small at 0.02, medium at 0.15, and large at 0.35.

Pairwise comparisons of the estimated means were performed through the Fisher's least significant difference test. The level of significance was set at $p < 0.05$.

Graphic charts with the estimated means (EM) and 95% confidence intervals (95% CI) were displayed to show the tactical, technical and physical differences according to the match outcome for the variables with the highest effect size in the mixed generalized lineal model.

Results

Table 2 illustrates the comparative analysis of tactical performance variables based on match outcomes. Offensively, teams had significantly fewer set pieces in both wins and draws compared to losses ($p < 0.001$ and $p < 0.05$, respectively; ES = 0.15). Similarly, teams exhibited a decreased frequency of positional attacks in wins and draws relative to losses ($p < 0.001$; ES = 0.30).

Conversely, a higher number of counterattacks was observed in wins compared to losses ($p < 0.05$; ES = 0.06), while no significant effect of the match outcome was noted for direct attacks.

On the defensive front, teams displayed a greater occurrence of low-block defense in draws and wins ($p < 0.001$; ES = 0.29), as well as a higher frequency of defensive set pieces in draws and wins ($p < 0.05$ and $p < 0.001$, respectively; ES = 0.16) compared to losses. Additionally, a reduced number of phases in high-pressing defense was noted in wins compared to losses ($p < 0.05$; ES = 0.15).

The random effects showed significant between-team variability, with positional attacks having the highest variance ($p < 0.01$). Marginal R2 values ranged from 0.07 to 0.31, and conditional R2 from 0.16 to 0.48, with positional attacks showing the highest explained variance. This highlights the strong influence of both fixed and team-level effects on positional attacks.

Table 3 illustrates the comparative analysis of technical variables based on match outcomes. In wins and draws, respectively, teams executed a lower number of passes ($p < 0.001$, $p < 0.05$; ES = 0.28), forward passes ($p < 0.001$, $p < 0.05$; ES = 0.33), and crosses ($p < 0.001$, $p < 0.001$; ES = 0.34) compared to defeats, while achieving more expected goals ($p < 0.001$; ES = 0.14) in wins than in losses.

From a defensive perspective, teams executed significantly more clearances in wins and draws ($p < 0.001$; ES = 0.17) than in losses. Furthermore, teams exhibited fewer recoveries in their own half during wins and draws compared to losses ($p < 0.001$; ES = 0.01). Finally, fewer expected goals were conceded both in wins and draws compared to losses ($p < 0.001$; ES = 0.16).

The random effects revealed substantial between-team variability, particularly in total passes ($p < 0.001$) and forward passes ($p < 0.001$), indicating that these metrics varied significantly by team. Marginal R2 values ranged from 0.03 to 0.38, and conditional R2 values from 0.06 to 0.59, with total passes showing the highest explained variance.

Table 4 shows the effects of the match outcome on physical performance in La Liga teams accounting for effective playing time. Offensively, teams covered less TD and HIRD ($p < 0.001$; ES = 0.31) in wins compared to losses. Conversely, more HSR distance was covered in matches won compared to matches lost ($p < 0.001$; ES = 0.18).

Defensively, more TD was covered in wins than in losses ($p < 0.001$; ES = 0.14), while less HSR distance was covered in wins and draws than in losses ($p < 0.05$, $p < 0.001$, respectively; ES = 0.12). The random effects indicated moderate between-

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team variability, particularly in TD with the ball ($p < 0.05$) and TD without the ball ($p < 0.05$), reflecting notable differences in total distance covered between teams. Marginal values ranged from 0.14 to 0.32, and conditional R^2 values from 0.18 to 0.53, with TD with the ball showing the highest explained variance.

Table 1. Description of offensive and defensive tactical variables included in this study.

Moment	Variable	Description
Offensive	Offensive set pieces	The team executes a corner kick or a free kick in the attacking third of the field.
	Counterattack	The team recovers the ball in their own field and the ball goes >30 m forward (longitudinal axis) in less than 10 s. It can be performed by any number of consecutive passes, but it has to end in the final third.
	Positional attack	The team builds an attack against an opposing team that has more than eight players (goalkeeper included) between the horizontal line of the ball position and their own goal for more than 3 s.
	Direct play	When the team progresses by positional attack and some player performs a long vertical pass (≥30 m in the longitudinal axis).
Defensive	Low-block defense	The defending team has six or more players in the close fourth (1/4) to their own goal when the offensive team is building an attack.
	Medium block defense	The defending team has eight or more players in the second and third fourth of the field (2/4 & 3/4) and at least one in 3/4 (opponent field) when the offensive team is building an attack.
	High pressing defense	The defending team has five or more players in the opponent half when the offensive team is building an attack.
	Defensive set pieces	The opponent team executes a corner kick or a free kick in the defending third of the field.

Table 2. Multilevel mixed multivariate model to predict the tactical performance according to the match outcome in *LaLiga* teams during the 2020/2021 season. The multivariate model includes the effect of the match location, the ranking of the opposing team, the ranking of the team and matches with numerical inferiority or superiority.

Moment	Variable (units)	Effect size	Intercept	Draw vs. Loss	Win vs. Loss
			Coeff (SE)	Coeff (SE)	Coeff (SE)
Offensive	Offensive set pieces (n)	Small	10.95 (0.54)***	−0.94 (0.35)*	−2.15 (0.36)***
	Counterattacks (n)	Small	11.26 (0.71)***	0.47 (0.36)	1.18 (0.37)*
	Positional attacks (n)	Moderate	70.93 (3.77)***	−5.06 (1.33)***	−13.11 (1.34)***
	Direct play (n)	Trivial	40.41 (2.01)***	0.78 (0.79)	−0.29 (0.79)
Defensive	Low-block defense	Moderate	8.88 (0.71)***	2.90 (0,54)***	5.01 (0.55)***
	Medium block defense	Trivial	42.11 (1.70)***	0.34 (0.77)	0.72 (0.77)
	High-pressing defense	Small	59.72 (1.97)***	−0.77 (0.88)	−2.80 (0.88)*
	Defensive set-pieces	Moderate	10.08 (0.53)***	0.98 (0.35)*	2.23 (0.35)***

** p ≤ 0.05; ** p ≤ 0.01; *** p = 0.001*

Table 3. Multilevel mixed multivariate model to predict the technical performance according to the match outcome in *LaLiga* teams during the 2020/2021 season. The multivariate model includes the effect of the match location, the ranking of the opposing team, the ranking of the team and matches with numerical inferiority or superiority.

Moment	Variable (units)	Effect size	Intercept	Draw vs. Loss	Win vs. Loss
			Coeff (SE)	Coeff (SE)	Coeff (SE)
Offensive	Total passes (n)	Moderate	449.89 (28.02)***	−25.54 (8.08)*	−60.92 (8.11)***
	Forward passes (n)	Moderate	302.75 (14.2)***	−10.33 (4.69)*	−35.87 (4.71)***
	Through passes (n)	Trivial	14.95 (0.88)***	−0.12 (0.54)	0.62 (0.55)
	Crosses (n)	Moderate	21.13 (1.41)***	−2.49 (0.66)***	−7.54 (0.67)***
	Expected goals (n)	Small	1.03 (0.09)***	−0.03 (0.05)	0.36 (0.05)***
Defensive	Clearances (n)	Moderate	19.08 (1.34)***	4.36 (0.71)***	7.61 (0.72)***
	Tackles (n)	Trivial	15.34 (0.67)***	0.31 (0.45)	0.21 (0.46)
	Recoveries (opposing half) (n)	Trivial	12.04 (0.82)***	−0.89 (0.45)	−0.93 (0.46)*
	Recoveries (own half) (n)	Small	20.97 (1.17)***	−2.48 (0.66)***	−2.42 (0.66)***
	Expected goals conceded (n)	Small	2.02 (0.10)***	−0.63 (0.07)***	−0.55 (= 0.07)***

** p ≤ 0.05; ** p ≤ 0.01; *** p = 0.001*

Table 4. Multilevel mixed multivariate model to predict the physical performance according to the match outcome in *LaLiga* teams during the 2020/2021 season. The multivariate model includes the effect of the match location, the ranking of the opposing team, the ranking of the team and matches with numerical inferiority or superiority.

Moment	Variable (units)	Effect size	Intercept	Draw vs. Loss	Win vs. Loss
			Coeff (SE)	Coeff (SE)	Coeff (SE)
Offensive	TD with the ball (km)	Small	35.53 (1.84)***	−1.57 (0.57)*	−4.16(0.57***
	HIRD with the ball (km)	Small	1.3 (0.62)***	−0.05 (0.23.)*	−0.10 (0.23)***
	HSR with the ball (km)	Small	1.10 (0.76)***	0.06 (0.28)	0.10 (0.28)***
Defensive	TD without the ball (km)	Small	35.96 (1.52)***	1.32 (0.70)	3.69(0.70)***
	HIRD without the ball (km)	Trivial	1.69 (0.86)***	−0.72(0.36)*	0.35 (0.36)
	HSR without the ball (km)	Small	1.28 (0.52)***	−1.35 (0.32)***	−0.72 (0.32)*

** p ≤ 0.05; ** p ≤ 0.01; *** p = 0.001*

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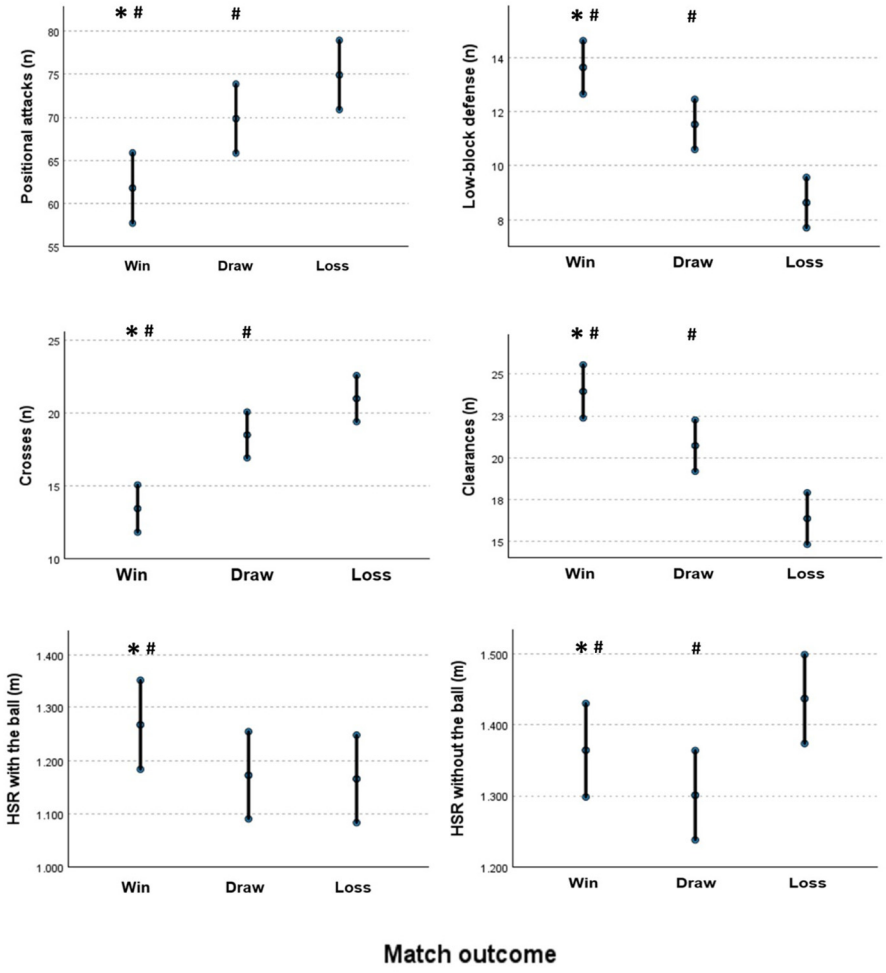

Figure 1. Estimated means and confidence intervals of tactical, technical, and physical variables showing significant differences based on the match outcome.
** = different from "Draw"; # = different from "Loss"*

The pairwise comparisons indicated that tactical and technical indicators such as offensive set pieces, positional attacks, crosses, high block defense, total passes and forward passes registered significantly lower values in wins compared to both draws and losses ($p < 0.05$). Furthermore, a significantly higher number of counterattacks, low-block defensive sequences, defensive set pieces, expected goals and clearances was exhibited during wins compared to both draws and losses ($p < 0.05$). Additionally, teams covered significantly more defensive TD and less offensive TD in wins compared to draws and losses ($p < 0.05$). Finally, teams covered more HSR with the ball in wins and less HSR without the ball in comparison with losses ($p < 0.05$).

Figure 1 presents the estimated means and confidence intervals of selected tactical, technical and physical variables that showed significantly higher effect sizes. These findings highlight the distinct tactical, technical, and physical demands associated with different match outcomes.

Discussion

The aim of this investigation was to analyse tactical, technical, and running performance variables according to the match outcome in the Spanish *LaLiga*. Our study revealed that teams adapted their tactical, technical, and physical performance depending on the match outcome, regardless of other contextual factors such as the match location, the opponent or the team ranking and numerical disparities.

Offensively, *LaLiga* teams exhibited a style of play characterized by a moderate decrease in the number of positional attacks (−18.5%) and crosses (−35.6%), as well as a small decrease in set pieces (−22.1 %), total passes (−13.6%), forward passes (−11.8%), in wins compared to losses. Conversely, teams displayed slightly more counterattacks (+10.5%) and achieved more expected goals (+34.9%) in matches won than in matches lost. Pairwise comparisons extended these differences in comparison with matches drawn, indicating a specific adaptation of tactical and technical behaviour when teams achieved a victory during *LaLiga* matches.

These findings suggest that Spanish teams adjusted their offensive tactical behaviour towards a more reactive and less combinative style of play when they won the match, in comparison with draws and losses. This adaptation may be attributed to the evolving match scoreline, as previous studies have observed that winning teams reduce ball possession and increase counterattacks to protect their lead (Fernandez-Navarro et al., 2018; Gonzalez-Rodenas et al., 2020). In this sense, Gonzalez-Rodenas et al. (2020) observed that *LaLiga* and English Premier League teams increased the odds of counterattacking when winning, in comparison with progressing by combinative attacks. This can be due to the need to protect the goal advantage achieved throughout the match, added to the urgency of the losing team to equalize the score.

Surprisingly, teams performed a significantly smaller number of crosses in wins compared to draws and losses. In fact, existing literature suggests that the effect of crossing the ball during match play has not a positive impact on scoring (Sarkar, 2018; Vecer, 2014). In this line, the higher number of crosses registered in lost matches may be due to the need of teams to send the ball towards the opposing goal in a fast way to try to equalize urgently the score. In this tactical context, crossing would be used as a desperate way to progress towards the goal, instead of using an elaborated and precise way to penetrate through the lines of the opponent. Nevertheless, it is key to observe that teams achieved a higher number of expected goals in wins, what reflects a higher quality of the scoring opportunities achieved and possibly explains a higher scoring effectiveness than in matches lost.

From a defensive perspective, teams implemented a style of play characterized by a moderate increase in low-block sequences (+56.4%), defensive set pieces (+22.1%) and clearances (+39.9%), as well as a slight decrease in high-block sequences (−4.7%), and expected goals conceded (−27.2%), in matches won compared to matches lost, and this tendency was extended in comparison with matches drawn. These findings underscore the importance of teams being prepared to implement a lower defensive block more frequently and experience a greater volume of defensive situations to secure a victory. In this way, teams needed to defend more set pieces and perform more clearances while winning, probably because the opposing team was pushing offensively with the intention to equalize the match. Despite this more defensive behaviour, it is key to note that teams conceded less expected goals in wins, what shows a better defensive effectiveness in comparison with defeats.

Our investigation provides new insights into the tactical strategies to achieve success in professional soccer, so that previous studies had observed that successful and winning teams had more shots, a higher goal conversion ratio and greater passing accuracy than losing or non-successful teams (Andrzejewski et al., 2022; Brito Souza et al., 2019; Lepschy et al., 2021; Yang et al., 2018). The novelty of this investigation is that it reveals that beyond better shooting and passing accuracy, teams also need to defend very frequently and in a lower block to obtain a victory, regardless of other contextual variables.

Physically, teams covered less TD (−11.7%) and HIRD (−7.7%), but more HSR (− 9.1%) distance in the offensive phase during wins compared to losses, considering effective playing time. Contrarily, more TD (+10.3%) and less HSR (−6.1%) distance was covered during defensive phases in victories. It is interesting to note that teams

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generally performed a greater defensive volume in victories, although matches won required more high intensity efforts with the ball, what highlights the importance of offensive intensity rather than quantity to achieve a positive match outcome.

In line with our findings, Modric et al. (2023b) found that players ran less offensive TD and HIR distance in matches won than in matches lost during UEFA Champions League matches. In contrast, this study observed that players covered more defensive TD in matches won than lost. This is probably due to the fact of defending a positive score that would make the players make an extra defensive effort due to a higher offensive initiative of the losing team.

In this regard, Castellano et al. (2011) found that players covered more distance at different speeds when their team was losing rather than winning in the Spanish Professional soccer league. Likewise, Lago-Peñas et al. (2020) observed that teams increased the total distance and distance covered at high intensity and when sprinting by defenders when the team was losing, although the attacking players showed the opposite trend. Nevertheless, the association between running performance and match success is very controversial considering the existing scientific evidence. Certain studies have reported increased running metrics in wins with respect to matches that ended in losses (Aquino et al., 2020; Chmura et al., 2018; Guilherme et al., 2021). For instance, Chmura et al. (2018) found that wide midfielders and forwards covered more HIR distance when winning than when drawing and losing in German Bundesliga. Similarly, Guilherme et al. (2021) identified higher running demands in winning matches compared to draws or losses among professional Brazilian players. Contrarily, Jercovic et al. (2022) noted lower running performance in matches won compared to matches lost in the Croatian First Division.

These divergent outcomes highlight the complex nature of soccer performance, where multiple tactical, contextual, and physical factors interact to determine success on the pitch. The varying findings across studies underscore the need for comprehensive analyses that consider the multifaceted aspects of match play in understanding the relationship between running performance and match outcomes.

In contrast to previous studies, our investigation distinguishes between offensive and defensive running performance, as well as it took into consideration only the effective playing time, what offers a more accurate evaluation of the physical demands in competition (Lago-Peñas et al., 2024). In this sense, our study presents new evidence that highlights the increase in defensive TD and offensive HSR in victories, offering valuable insights for training and tactical preparation.

This study has several limitations. Firstly, our data captured the teams' performance during the whole match, and it was categorized by the final match outcome. Hence, no data were analyzed considering the different match status of teams throughout the course of the match. Furthermore, this study was focused on teams' collective variables and no data from individual players nor specific playing positions were considered. In this regard, the identification of players more responsible of the tactical and technical changes found in this investigation deserves future exploration. Finally, the current study was carried out with data of national competitions of elite male players and the results should not be extrapolated to other leagues, categories or to women´s soccer. In any case, the large sample used and the design of the study that considered the effects of key contextual variables reinforce the relevance of the findings.

Future studies should examine specific positional performance variations in relation to the match status and outcome, focusing on which playing positions contribute most to tactical and technical adaptations. This would provide a deeper understanding of role-specific responsibilities. Additionally, it would be valuable to assess whether these trends are consistent in women's soccer or other European leagues. Finally, future research could explore real-time coaching decisions, such as substitutions or formation changes, and their impact on tactical, technical, and physical performance in relation to match success in soccer.

From a practical standpoint, this investigation underscores the importance of soccer coaches preparing their teams to dominate diverse offensive and defensive styles of play to secure match victories. Thus, soccer coaches should be aware of the possible shift towards a more defensive style of play, which includes a greater

number of low-block defensive sequences, defensive set pieces and clearances, as well as a more reactive offensive style with fewer positional attacks and a greater number of counterattacks to secure a positive match outcome. This information can help coaches make informed decisions regarding player substitutions and strategic adjustments throughout the match.

Conclusions

In conclusion, teams implemented fewer positional attacks, crosses, and offensive set pieces in wins, while increasing counterattacks and expected goals. Defensively, teams registered more low-block sequences, defensive set pieces, clearances and fewer high-block defensive sequences in victories. Physically, teams covered less TD and HIR but more HSR distance in offensive moments during wins, while covered more defensive TD and less defensive HSR distance in losses. These findings provide insight into the adaptive strategies employed by *LaLiga* teams according to the match outcome.

Author Contributions: Conceptualization: J.G.-R., V.M.-P. and J.D.C.; methodology: J.G.-R. and J.D.C.; software: R.L.-D.C. and R.R.; validation: R.L.-D.C. and R.R.; formal analysis: J.G.-R., J.F. and J.D.C.; investigation: J.G.-R. and J.D.C.; resources: R.L.-D.C. and R.R.; data curation: J.G.-R. and J.F.; writing—original draft preparation: J.G.-R. and J.D.C.; writing—review & editing: J.G.-R., J.F., V.M.-P., R.L.-D.C. and J.D.C.; visualization: J.G.-R.; supervision: J.D.C.; project administration: R.L.-D.C., R.R. and J.D.C.; funding acquisition: R.L.-D.C. and R.R. All authors have read and agreed to the published version of the manuscript.

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Funding Information: The authors acknowledge the support of the program "Yo Investigo" (European Union: Next Generation EU") and the grant for the acquisition, expansion and repair of scientific equipment of the Rey Juan Carlos University. Also, the authors gratefully acknowledge the support of a Spanish government project entitled Optimisation of the preparation process and competitive performance in Team Sports based on multi-modal and multi-level data integration by intelligent models [PID2023-147577NB-I00] for the four years 2024–2027, in the 2023 call for grants for «KNOWLEDGE GENERATION PROJECTS», in the framework of the State Program to Promote Scientific-Technical Research and its Transfer, of the State Plan for Scientific, Technical and Innovation Research of the Ministry of Science, Innovation and Universities (MCIU).

Institutional Review Board Statement: This study was conducted following the principles of the Declaration of Helsinki. Ethical approval was not required for this study, as confirmed by the Ethics Committee of the Rey Juan Carlos University, Fuenlabrada, Spain, due to its observational nature and the use of anonymized data (certificate issued on 25 March 2021).

Informed Consent: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Received: 28 November 2024

Accepted: 23 December 2025

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