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Impact of technical and physical performance on match outcome over five elite European soccer seasons

Running head: Match performance in elite European soccer

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ABSTRACT

Background. The technical and physical performance, a key part of overall soccer performance, tend to evolve due to changes in game rules, playing styles, and training methodology. Nevertheless, little has been reported in the literature on how match performance has changed over time in elite championships and leagues. Thus, this study aimed to assess the impact of selected technical and physical team performance indicators on match outcome over five seasons in the Russian Premier League. **Methods.** Twenty-two technical and physical team performance variables, recorded with an optical tracking system, were examined in 1186 matches played in the Russian Premier League during the 2016-2017 to 2020-2021 seasons. **Results.** For pooled data in all examined seasons, shots on target were higher in won vs. drawn and lost matches. Percentage of challenges won was higher in won vs. drawn and lost matches. Sprint distance, counterattacks, shots, interceptions, recoveries, crosses, and the percentage of successful tackles all showed small though significant differences between match outcomes. Slightly greater odds of a more favourable match outcome were involved by increases in all selected variables, except crosses, showing an opposite effect. In the 2020-2021 season, ball possession time reported a slightly higher impact on match outcome than in previous seasons. **Conclusions.** The present results show that some technical performance variables have a great effect on match outcome, while other technical indicators and physical metrics have a smaller though still potentially relevant impact. These effects do not substantially differ across the five examined seasons.

Key words: Soccer; Running; Athletic performance.

Introduction

The physical demands of soccer have been well documented in research over the last couple of decades.¹⁻⁴ The variation in these demands have also been presented in relation to various factors such as style of play and level of competition.^{5,6} Similarly, the technical demands of soccer have also been assessed across different leagues and divisions.⁷⁻⁹ The combination of these data can be used to assess the performance of teams or individuals in each game or over the course of a full season or competition.¹⁰⁻¹⁵

Technical performance is a determinant of overall soccer performance and is considered essential for success.¹⁶ The ability of individual players and teams to possess and manipulate the ball around the pitch in order to break through the oppositions defensive shape to score is a major factor in success in soccer. This involves among other aspects, the ability of teams to keep possession of the ball, the number of successful passes accumulated by teams, entries into the oppositions defensive third of the pitch, entries to the opposition's penalty area, shots and shots on target.^{12,17,18} Moreover, defensive actions attempting to prevent opponents from scoring, such as tackles and ball recoveries, can have an impact on the match outcome.¹⁹⁻²¹ While previous investigations have suggested that a number of technical performance variables may discriminate successful and unsuccessful teams, further research is needed to confirm if this is the case across soccer at different competitive levels and in different leagues.

Physical performance is also a key part of the overall performance of individual soccer players during match play.² During a match that lasts ~95-minutes, each individual player may only be in possession of the ball for approximately 2-minutes, with this being even lower for some players depending on their playing position within the team.¹⁶ This means that much of the match is spent without the ball, even when a player's team may be in possession of the ball. In light of this it is likely that the majority of a player's movements will involve pressing actions and covering space when their team is out of possession, and then performing runs and movements to create space to receive the ball when their team regains possession.²² The majority of these actions would be undertaken at maximum intensity and would therefore be

classified as high intensity actions.²³ With this in mind, the development of key physical attributes becomes vitally important to allow players to repeatedly perform these actions.

Despite research being undertaken to quantify the physical demands during soccer match-play, the impact of physical performance on the outcome of matches and the overall success of a team is still relatively unknown. In the German Bundesliga, offensive and defensive players were shown to cover longer and shorter high-intensity and sprint distances respectively, in won matches when compared to drawn or lost matches.²⁴⁻²⁶ However, in-significant relationships were observed between a teams' match running performance and points in the final ranking, although were, instead, positively correlated with running with ball possession.²⁷ Similarly, Rampinini and co-workers¹⁶ reported that top-ranked Italian Serie A teams covered greater total and high-intensity distance with the ball than low-ranked teams (team vs. individual players), while the total distance covered was greater in low-ranked teams. The above findings provide some relevant evidence on the relations between individual players or team's physical performance, and match outcome or success in elite soccer. Nevertheless, different championships or national soccer leagues, even at a similar competitive level, may show quite different characteristics during match-play in terms of physical and technical performance.⁷ It is therefore reasonable to hypothesize that the impact of given physical performance indicators may vary across leagues depending on the specific match-play characteristics of each league.

The technical and physical performance of elite soccer tends to evolve due to changes in game rules, playing styles, and training methodology.^{28,29} Knowing evolutionary trends in performance characteristics may help coaches to better understand the present and possibly future requirements of soccer match-play and thus implement optimal training plans. Nevertheless, while some authors included matches played over several seasons when examining the relationships between technical/physical performance indicators and match outcome, only a few previous studies examined how these relationships changed over time. Castellano et al. showed that technical performance variables discriminating winning, drawing, and losing teams in the 2002, 2006 and 2010 FIFA World Cup, are partially different between

the three examined editions of the World Cup.¹⁸ More recently, Zhou et al. observed that some selected performance indicators had an increasing influence, while others had a decreasing influence, on the probability to win the match over six seasons (2012 to 2017) in the Chinese Soccer Super League.³⁰ These investigations demonstrate how the effect of performance indicators on match outcome may change over a period of 5-10 years in a league or championship and corroborate the need to further examine the evolution of the performance/match outcome relationship in elite soccer.

The Russian Premier League (RPL), the first division of Russia, is a 16-team elite European soccer league, with a playing schedule normally split into two distinct competitive phases interspersed by a winter break of approximately two months. At present, only limited data are available regarding technical and physical performance in the RPL,³¹ and, to our knowledge, no previous study have assessed the effects of technical or physical performance indicators on match outcome in the RPL across one or more seasons. This analysis would provide novel insights on this topic and contribute to understanding how team's match performance and success are correlated in elite soccer. Therefore, the aim of this study was to assess the impact of technical and physical performance on match outcome over five consecutive seasons in the RPL.

Materials and Methods

Sample

A total of 1186 matches out of 1200 played in the RPL during the seasons 2016-2017 to 2020-2021 were examined. Due to technical issues, data from 14 matches (1.2%) were not available, and thus not included in the analysis. For every match, data were available from the home and away team, hence the total number of team performance data points was 2372. The study was performed in accordance with the Helsinki Declaration principles. Ethical approval for the study was granted by Professor Vladimir Nikolenko, Chairperson of the Ethics Committee of Sechenov University (N 06-21 dated 04/07/2021).

Measures

For every match, the outcome (win, draw, loss) was recorded. Thereafter, a total of 22 technical and physical indicators of team performance was selected. These variables were chosen as they are amongst the most common team performance indicators both in previous studies^{8,9,11,12,16,28} and in practical settings by analysts in elite soccer. The list below presents the variable name and definition.

Variables related to ball possession and passes: Ball possession time (min), time the team had ball possession; Ball possession time in own half (min), time the team had ball possession in their half of the pitch; Ball possession time in opponent's half (min), time the team had ball possession in the opponent's half of the pitch; Passes, number of passes performed by the team, Successful pass percentage (%), percentage of successful passes out of the total passes completed by the team; Crosses, number of balls delivered into the opponent team's area from a wide position.

Variables related to offence: Corners, number of corners awarded to the team; Offsides, number of offsides committed by the team; Attacks, number of attacks executed by the team; Counterattacks, number of counterattacks performed by the team; Set-piece attacks, number of attacking set-pieces conducted by the team.

Variables related to goal-scoring attempts: Shots, number of shots performed by the team, either on or off target; Shots on target, number of shots on target performed by the team.

Variables related to defence: Tackles, number of tackles performed by individual players, Percentage successful tackles, percentage of successful tackles out of the total tackles performed by the team; Interceptions, number of balls intercepted by individual players; Recoveries, number of balls recovered by individual players of the team.

Variables related to both offence and defence: Challenges, number of duels engaged in by the players of the team; Percentage challenges won, percentage of duels won out of the total duels executed by individual players of the team.

Physical performance variables: Total distance (m), total distance covered by the team; High-intensity distance (m), distance covered at speeds from 5.5 to 7.0 m/s by the team; Sprint distance (m), distance covered at speeds > 7.0 m/s by the team.

Design and Procedures

A two-camera optical tracking system (InStat, Moscow, Russia) was installed to record and examine the technical and physical match performance across five consecutive seasons. The matches were filmed using two full HD, static cameras positioned on the centre line of the field, not less than 3-metres from the field and 7-metres in height. A consistent 25Hz format was provided. Data were linearly interpolated to 50Hz, smoothed using a 5-point moving average and then down-sampled to 10Hz, which allowed analysis of all player actions with and without the ball. The installation process, reliability, and validity of InStat have been previously reported.³² Technical and physical performance was analyzed using the InStat Analysis Software System and exported to the Microsoft Excel software for further analyses. InStat provided written permission to allow all match data to be used for research purposes.

Statistical analysis

The statistical analysis was performed using the software R, version 4.2.0 (R Foundation for Statistical Computing, Vienna, Austria). Data are presented as mean $\pm$ standard deviation. Linear mixed models, with random intercepts on teams' IDs, were performed to assess the differences between winning, drawing and losing teams in the examined performance variables. When a significant ($p < 0.05$) difference was detected, pairwise comparisons between outcomes (win/draw/loss) were performed with Tukey's post-hoc tests. Given the potential effect of playing home vs. away on the performance of a soccer team³³⁻³⁴, game location (home/away) was included as a fixed factor in the linear mixed models, and the effect of match outcome X location interaction was also assessed. "Draw" and "Home" were taken as the reference categories, respectively for the outcome and location. Effect sizes were calculated as Cohen's

d from the linear mixed models coefficient using the lme.dscore (EMAtools package)³⁵, and interpreted as very small (<0.2), small (0.2-0.5), medium (0.5-0.8), large (>0.8). To further assess the effect of technical and physical performance on match outcome, mixed multinomial logistic regression models were used, with random intercepts on team's IDs, match outcome as the dependent variable, location (home/away) as a covariate, and performance variables, each taken individually, as the independent variable. Regression coefficients are presented as odds ratio (OR) with 95% confidence intervals. An effect was considered significant when the 95% for the odds ratio did not include the value of one. Odds ratios indicate how much the odds of a better match outcome (win or draw vs. loss; win vs. draw or loss) change for every one unit increase in the independent variable. To improve the interpretation of physical performance variables changes on odds ratios of match outcome, given the typical distances covered during a match, the units of measurement of distances covered were transformed before the analysis as 1-km for total and high-intensity distance, and 100-m for sprint distance. All the analyses were conducted using the whole data set (data from all seasons pooled together), and separately for each of the five seasons from 2016-2017 to 2020-2021.

Results

Differences between winning, drawing and losing teams

Tables I to IV show the mean $\pm$ standard deviation median of all examined variables, for the pooled data set (All) and for each examined season. For all variables, both in the pooled data set and in each season, there was no significant effect of match outcome by location interaction (all $p>0.05$), while there were very small to large ($d=0.10$ to 0.82) effects of location (home>away, or away>home) (Tables I to IV).

For the pooled data set including all five seasons, the total distance was significantly lower in lost vs. both won and drawn matches, though with a very small effect ($d<0.20$). In the 2019-2020 season, a greater total distance was observed in drawn vs. lost matches, with a small effect ($d=0.32$), and there was a very small ($d=0.17$) effect of a greater total distance in won vs. lost

matches in the 2018-2019 season. The high-intensity distance was very slightly lower in drawn vs. both won ($d=0.11$) and lost ($d=0.13$) matches for the pooled data, while there were no differences between match outcomes in any examined season. The sprint distance was significantly lower in drawn vs. both won and lost matches for the pooled data, with a very small effect ($d=0.11-0.15$), while differences between match outcomes were not significant in the single seasons (Table I).

Table I here

The time of ball possession in the opponent's half was only slightly though significantly (approximately 1-minute) shorter in drawn vs. both won and lost matches, in the pooled data ($d=0.11$ and 0.12 respectively, both very small). No significant differences between match outcomes were observed in the examined seasons. Also, no differences between outcomes were observed in the pooled data set and single seasons for time of ball possession and ball possession in own half.

The number of total passes and the percentage of successful passes were not significantly different between match outcomes for the pooled data and in all examined seasons.

For the pooled data set, the number of crosses was significantly lower in won vs. both drawn and lost matches, and in drawn vs. lost matches, with small and very small effects ($d=0.11$ to 0.44). Furthermore, the number of crosses was significantly lower in won vs. lost matches in the 2017-2018 season ($d=0.54$, medium), and in drawn vs. lost matches in the 2017-2018 ($d=0.09$, very small) and 2020-2021 ($d=0.09$, very small) seasons (Table II).

Table II here

The number of corners awarded to a team showed no differences between match outcomes in any season or for the pooled data. The number of attacks was higher in lost vs. won matches in the pooled data set and in all examined seasons ($d=0.22$ to 0.43 , small), with the exception of the 2020-2021 season, and it was significantly lower in won and drawn matches for the pooled data ($d=0.16$, very small), and in the 2017-2018 ($d=0.24$, small), and 2019-2020 ($d=0.22$, small) seasons. The number of counterattacks was slightly but significantly higher, with very small to

small effects, in won vs. drawn matches, when examining the pooled data and the 2019-2020 and 2020-2021 seasons. A significantly higher number of counterattacks was observed for the pooled data, and in the 2017-2018 and 2018-2019 seasons in won vs. lost matches, with small effects ($d=0.22$ to 0.39). The number of offsides committed by a team, was not significantly different between match outcomes in any of the examined seasons or for the pooled data. The attacking set pieces were significantly higher in both drawn and lost vs. won matches for the pooled data set ($d=0.11$, very small), and in lost vs. won matches for the 2016-2017, 2017-2018, and 2019-2020 seasons, with very small ($d=0.18$) to small ($d=0.25$) effects (Table III).

The total number of shots was significantly higher in won vs. lost matches for the pooled data and in the 2017-2018 and 2020-2021 seasons, with very small to small effects ($d<0.19$ to 0.38). Furthermore, significant differences between won and drawn matches were detected for the pooled data ($d=0.11$, very small). Shots on target were significantly higher between won vs. both drawn and lost matches, for the pooled data and in all examined seasons, with differences of approximately 1 to 2 shots on target per match in won vs. drawn or lost matches, with medium effects ($d=0.49$ to 0.71) (Table III).

Table III here

The percentage of successful tackles was significantly higher in won vs. lost matches for the pooled data ($d=0.12$, very small), and in the 2020-2021 season ($d=0.28$, small) (all $ES=0.01$, small). The number of intercepted balls by individual players was significantly higher in won vs. lost matches, and in won vs. drawn matches, for the pooled data, and in the 2017-2018 to 2019-2020 seasons ($d=0.27$ to 0.44 , small). The number of recovered balls by individual players was significantly higher in both won and drawn vs. lost matches for the pooled data and in the 2018-2019 and 2020-2021 seasons, and in won vs. lost matches in the 2018-2019 and 2019-2020 seasons, with very small to small differences ($d=0.15$ to 0.32) (Table IV).

The number of challenges performed by individual players was significantly higher in drawn vs. both won and lost matches in the 2018-2019 season ($d=0.24$ to 0.26 , small). A significantly higher percentage of challenges won was observed for won vs. both drawn and lost matches,

and for drawn vs. lost matches, for the pooled data ($d=0.18$, very small to 0.40 , small). The 2016-2017 and 2017-2018 seasons showed a higher percentage of challenges won in won vs. lost matches ($d=0.28$ to 0.34 , small), while seasons from 2018-2019 to 2019-2021 showed a higher percentage of challenges won in won vs. both lost and drawn matches (d ranging from 0.23 , small, to 0.52 , medium) (Table IV).

Table IV here

Effect of changes of match performance variables on match outcome

Table V shows the estimates of odds ratios obtained from the mixed multinomial logistic regression analyses.

For an increase of 1-km in total distance covered by the team, the odds of a better outcome were not significantly different from 1.0 in the pooled data and all examined seasons, with the exception of the 2020-2021 season, showing 1.03-times greater odds of a better outcome with an increase of 1-km in total distance covered. Changes in the distance covered at high intensity did not reveal significant effects on match outcome in terms of odds ratios. The effect of an additional 100-m of total distance covered by the player of a team involved greater odds of a better match outcome in the pooled data ($OR=1.05$), and greater odds (1.05 to 1.08) in all but the 2018-2019 season.

An increase of 1-minute in the overall ball possession time, involved greater odds of a better match outcome for the pooled data, and in the 2016-2017 and 2020-2021 seasons, while the effects were not significant in the seasons 2017-2018 and 2018-2019. Conversely, in the 2019-2020 season, there was a slight reduced odds of a better match outcome for a 1-minute increase in ball possession when playing at home. Increased ball possession in own half of the pitch involved greater odds of a better match outcome in the 2016-2017 and 2020-2021 seasons, while increased possession time in the opponent's half involved greater odds of a better match outcome in the 2020-2021 season and slightly reduced odds in the 2019-2020 season (home matches). One-unit changes in the number of passes had no effect on match outcome, while a

1% increase in the percentage of successful passes involved greater odds of a better outcome in the pooled data and in the 2018-2019 to 2020-2021 seasons.

One-unit increases in the number of crosses tended to have a negative impact on match outcome, involving lower odds of a better match outcome in the pooled data and in the seasons 2017-2018 to 2019-2020. An increase of one unit in the number of corners awarded to a team had no effect on match outcome for the pooled data and in any of the examined seasons. An increase of one counterattack per match had the effect of increasing the odds of a better match outcome for the pooled data and all examined seasons, although only in home matches for the 2016-2017 season. Whereas changes in other variables related to offence, that is offsidess, attacks and attacking set-pieces, showed no effects on the match outcome. The number of shots performed by the team had a positive effect on match outcome, involving greater odds of a better outcome for the pooled data and in all examined seasons. Shots on target had a high impact on match outcome. One additional shot on target in a match involved 1.14 to 1.38-times greater odds of winning vs. losing, in the pooled data and across all examined seasons.

Considering the variables related to defence, the percentage of successful tackles and the number of ball recoveries showed a slightly positive effect on match outcome, involving 1.01- to 1.03-times greater odds of a better match outcome for the pooled data and across most of the examined seasons. There was no evident effect of one-unit changes of tackles and interceptions on match outcome. An increase of one challenge won had no impact on match outcome, while an increase of 1% in the percentage of challenges won had a relevant effect, involving 1.02 to 1.10-times greater odds of a better match outcome for the pooled data and across the examined seasons (Table V).

Table V here

Discussion

The study aimed to examine the effects of team technical and physical performance on match outcome across five consecutive seasons in the RPL. Collectively, the data show that some of the examined performance indicators have a great effect on match outcome, while other

variables have a smaller though still potentially relevant impact. Furthermore, the observed differences between match outcomes, and the effects of one-unit changes in performance variables on match outcome, overall are similar across the examined five seasons. Although trends emerged from the data possibly increasing the impact of some indicators on match outcome, especially in the last examined season (2020-2021).

There is currently a wide debate existing in the literature concerning the relationship between the quantity of running performance during a soccer match and overall performance and consequently the contribution to match outcome and team success. Although addressing this issue has proven difficult due to the potentially confounding effect of contextual variables such as the match location, match status, and the opponent's quality,³⁶⁻³⁸ while match outcome and team success has been previously defined by final league position and measured by total league points, ranking, goals scored, goals conceded and number of matches won, drawn or lost.³⁹ Nevertheless, previous research predominantly examined the running performance of individual players,²⁴⁻²⁶ while less significance was directed to the impact of team physical performance on match outcome. We examined the total distance covered, and the distances covered at two intensities (high-intensity 5.5 to 7.0 m/s and sprint >7.0 m/s) that are relevant for performance in soccer. Our results show a small, although consistent across the seasons, tendency of total distance to be greater when teams win or draw matches compared to when they lose. Furthermore, greater sprint distance was associated with winning as opposed to drawing or losing matches, while no relationship was evident between high-intensity distance and match outcome. These findings are in partial agreement with the study of Zhou et al.³⁰ conducted over the 2012-2017 period in the Chinese Super League (CSL). Using logistic regressions, the authors found that greater team total and sprint distances produced a higher probability of winning vs. drawing or losing albeit in only some of the six examined seasons. Probably, the impact of running performance on match outcome is different in the RPL and CSL due to the different technical and tactical strategies employed and thus the physical demands of match-play. Other studies have shown that team total distance covered across a

season was not related to the final league ranking position in the Italian Serie A,⁴⁰ or to the total league points accumulated during the season in the German Bundesliga.²⁷ However, such data are not directly comparable to the present findings due to the different approaches in data analysis. As previously noted, the success of a soccer team may be quantified in several ways such as the match outcome, the number of goals scored or conceded in a match or league/championship, the league ranking position, the number of points accumulated, the team's international ranking, and the qualification to the final knock-out stage of an international competition. However, the manner in which technical and physical performance discriminate between successful and unsuccessful teams may partially differ according to how the dependent variables linked to team success are established.

The variables related to ball possession and passes showed little although significant differences between match outcomes (Table II), and small effects on the probability of a better match outcome (Table V). Interestingly, however, in the 2020-2021 season a trend appeared to suggest a slightly greater positive impact of longer possession time and percentage of successful passes on match outcome. This can possibly be explained by a greater influence of European styles of play and tactical strategies which have been accepted and implemented within the national coach education framework and the continued adoption of foreign players into the RPL. Somewhat surprisingly, both for the pooled data and in most examined seasons, losing teams performed on average a slightly higher number of crosses than drawing/winning teams (Table II), and this higher number of crosses performed involved greater odds of a negative match outcome (Table V). This may be related to the quality of the cross, the area from where the cross was delivered and the style of play adopted by the team. In addition, this more direct play strategy may also reflect the technical and physical performance profile of the players, where less technically proficient players are more likely to execute a cross rather build an attack through possession, looking for a penetrating pass through the defensive line in the final third and thus reflect in the success of the team.

In all examined seasons, we observed little impact on match outcome of any examined technical indicators related to offence, except the number of counterattacks. A greater number of counterattacks resulted in higher won vs. lost or drawn matches for the pooled data in most examined seasons (Table III), and with a positive effect on the odds of a better match outcome (Table V). These findings agree with previously reported data by Lepschy et al.,²¹ showing that shots from counterattacks are an important determinant of team success in the German Bundesliga. In support, Tenga et al. showed that, in the Norwegian Premier League, counterattacks are more effective than elaborate attacks to score goals, especially when playing against an imbalanced defence.⁴¹ This is also likely to occur in RPL matches when a team is attempting to regain possession high up the field, a counterattack may be a readily available option for the team in possession due to the defensive pressure and the large spaces left behind. This option is also an effective strategy at creating goal-scoring opportunities as a minimal number of defensive players typically remain to defend their goal, thus leaving the team vulnerable to the counterattack itself.

Unsurprisingly, and in line with previous research,^{10,11,13-15,17-19,21,30} the number of shots and especially shots on target are meaningfully different between match outcomes (Table III) and have a significant impact on the probability of a favourable match outcome in all examined seasons (Table V). It is noteworthy that in the RPL the most successful teams tend to purchase experienced attacking players with excellent shooting qualities, often from foreign countries, almost guaranteeing the team a high number of shots and shots on target per match.

The examined defensive variables showed evidence, although somewhat small effects on match outcome in some of the examined seasons, with slightly higher percentage of successful tackles, and number of intercepted and recovered balls, especially in won vs. lost matches (Table IV). Also, the odds of a better match outcome were moderately higher with one-unit increases in these variables (Table V). Previous research has reported contrasting results on the impact of interceptions and tackles on overall soccer performance, as some authors have associated these variables to success in soccer,^{19,42} while others showed little to no effect on match outcome.¹⁵

It is likely that the playing style, and more specifically the defensive strategy, typical of some teams or leagues, influences the technical performance from a defensive perspective and its relative importance for success.

In most of the examined seasons, the percentage of challenges won, including both defensive and offensive challenges, was clearly higher in won vs. both drawn and lost matches, (Table IV). We observed a relevant impact of this variable towards a more favourable match outcome, that was consistent across all seasons (Table V). This is in agreement with previous research showing a positive impact of challenges or duels won on match outcome,^{19,30} although there is no consistency on how challenges are defined and identified. For example, Liu et al. considered only aerial duels,¹⁹ while Zhou et al. stated “50-50 challenges won”,³⁰ which may be partially different from how challenges won are identified in the present study. Nevertheless, the impact of the percentage of challenges won on match outcome in the present study is reflective of the high physical demands typical of competitive match-play in the RPL.

Conclusions

In summary, this is possibly the first study to describe in detail the technical and physical characteristics of soccer in the RPL, not only in relationship to match outcome but one of the first to provide a longitudinal multi-season analysis into performance trends in an elite national premier league. Therefore, this study adds to the existing body of knowledge where we observed some relevant differences between player and team performances. The findings may provide soccer coaches with specific knowledge and information when considering training content for individual players although, many contextual factors may confound the results interpretation such as playing position, playing time and substitutions, injured players, and starters vs non-starters status. Furthermore, when examining team performance variables, the data may be more reliable and easier to assess, however, team data combines all individual performance data thus potentially interesting aspects of individual player performance may not be detected. The present findings may allow coaches to determine threshold values of technical

and physical performance indicators that are associated with a high probability of winning matches. In the training process, this knowledge would help coaches to plan effective drills or conditioning exercises aiming to enhance the team performance towards these successful performance values.

While previous findings have highlighted the significance of universally accepted and standardized speed zones for monitoring team sport athletes,⁴³ the current authors propose that the use of global, as opposed to individualized running speed thresholds is a limitation of this research. Other notable limitations include the absence of training load, fatigue, and fitness profiling data. Moreover, we controlled only match location as a contextual factor potentially affecting the relationships between match performance and outcome. However, soccer performance and possibly its impact on match outcome may be affected by other factors such as the ambient temperature during the match⁴⁴ and the distance travelled by teams to play.⁴⁵ Future investigations are warranted to evaluate both these factors as they may be particularly relevant in the RPL due to the wide range of match ambient temperatures during the season, and the long distances teams typically travel to play away fixtures.

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Conflict of interests

The Authors declare they have no conflict of interests.

Authors contribution

RM and RDM conceived and designed the research. RM collected the data. RM, PO, and RDM analysed and interpreted the results, drafted, edited and revised the manuscript. All Authors read and approved the final version of the manuscript.

Table I. Mean $\pm$ SD of physical performance variables

			Total distance (m)	High-intensity distance (m)	Sprint distance (m)
All	Home	Win	113737 $\pm$ 4699	7681 $\pm$ 890	1285 $\pm$ 375
		Draw	114094 $\pm$ 5224	7585 $\pm$ 993	1174 $\pm$ 350
		Loss	113735 $\pm$ 5076	7767 $\pm$ 1062	1217 $\pm$ 401
	Away	Win	113482 $\pm$ 4569	7643 $\pm$ 984	1097 $\pm$ 400
		Draw	114434 $\pm$ 5285	7539 $\pm$ 969	1180 $\pm$ 356
		Loss	112939 $\pm$ 4960	7616 $\pm$ 945	1188 $\pm$ 337
	Significant (p<0.05) differences		W>L (d=0.19) D>L (d=0.14)	W>D (d=0.11) L>D (d=0.13) Home>Away (d=0.10)	W>D (d=0.15) L>D (d=0.11) Home>Away (d=0.09)
2016-2017	Home	Win	111248 $\pm$ 3414	7848 $\pm$ 565	1128 $\pm$ 288
		Draw	110944 $\pm$ 4120	7818 $\pm$ 636	1049 $\pm$ 290
		Loss	111071 $\pm$ 4133	8030 $\pm$ 706	1097 $\pm$ 332
	Away	Win	111794 $\pm$ 3111	7849 $\pm$ 545	1102 $\pm$ 261
		Draw	111503 $\pm$ 4176	7728 $\pm$ 624	1035 $\pm$ 293
		Loss	110276 $\pm$ 4095	7793 $\pm$ 666	1042 $\pm$ 244
	Significant (p<0.05) differences				
2017-2018	Home	Win	113139 $\pm$ 3528	7350 $\pm$ 716	1169 $\pm$ 283
		Draw	113446 $\pm$ 3771	7203 $\pm$ 833	1075 $\pm$ 318
		Loss	113184 $\pm$ 3698	7487 $\pm$ 807	1053 $\pm$ 352
	Away	Win	113507 $\pm$ 3473	7295 $\pm$ 746	1053 $\pm$ 372
		Draw	113370 $\pm$ 3759	7214 $\pm$ 847	1036 $\pm$ 296
		Loss	112526 $\pm$ 3881	7277 $\pm$ 848	1084 $\pm$ 263
	Significant (p<0.05) differences				
2018-2019	Home	Win	115332 $\pm$ 4964	7630 $\pm$ 1029	1366 $\pm$ 419
		Draw	116669 $\pm$ 5909	7866 $\pm$ 1225	1273 $\pm$ 435
		Loss	115863 $\pm$ 5481	8013 $\pm$ 1299	1330 $\pm$ 424
	Away	Win	115870 $\pm$ 4760	7866 $\pm$ 1195	1411 $\pm$ 423
		Draw	116313 $\pm$ 5506	7579 $\pm$ 1114	1301 $\pm$ 423
		Loss	114752 $\pm$ 4922	7587 $\pm$ 1067	1296 $\pm$ 378
	Significant (p<0.05) differences		W>L (d=0.17)		
2019-2020	Home	Win	114616 $\pm$ 4966	7601 $\pm$ 1022	1366 $\pm$ 396
		Draw	115161 $\pm$ 5823	7376 $\pm$ 1084	1233 $\pm$ 321
		Loss	113988 $\pm$ 4993	7627 $\pm$ 1079	1260 $\pm$ 374
	Away	Win	114002 $\pm$ 5058	7391 $\pm$ 1130	1315 $\pm$ 432
		Draw	116503 $\pm$ 5986	7526 $\pm$ 1025	1280 $\pm$ 322
		Loss	113597 $\pm$ 4639	7520 $\pm$ 989	1220 $\pm$ 309
	Significant (p<0.05) differences		D>L (d=0.32)		
2020-2021	Home	Win	114597 $\pm$ 5199	7906 $\pm$ 956	1403 $\pm$ 386
		Draw	113978 $\pm$ 3965	7664 $\pm$ 883	1248 $\pm$ 291
		Loss	114342 $\pm$ 5723	7758 $\pm$ 1198	1332 $\pm$ 436
	Away	Win	115539 $\pm$ 4832	7912 $\pm$ 934	1348 $\pm$ 349
		Draw	114245 $\pm$ 4948	7681 $\pm$ 1112	1258 $\pm$ 316
		Loss	113780 $\pm$ 5714	7829 $\pm$ 1024	1298 $\pm$ 376
	Significant (p<0.05) differences				

W: win; D: draw; L: loss; d: Cohen's d

Table II. Mean $\pm$ SD of variables related to ball possession and passes

			Ball possession time (min)	Ball possession time in own half (min)	Ball possession time in opponent's half (min)	Passes	% Successful passes	Crosses
All	Home	Win	27.6 $\pm$ 5.5	17.0 $\pm$ 2.9	10.6 $\pm$ 3.8	492.4 $\pm$ 112.4	81.8 $\pm$ 4.5	12.5 $\pm$ 6.1
		Draw	28.0 $\pm$ 5.3	17.0 $\pm$ 2.7	11.0 $\pm$ 3.8	498.0 $\pm$ 105.5	81.0 $\pm$ 4.2	15.0 $\pm$ 7.3
		Loss	27.3 $\pm$ 5.5	16.8 $\pm$ 2.8	10.5 $\pm$ 3.8	483.7 $\pm$ 105.6	80.9 $\pm$ 4.1	15.2 $\pm$ 7.4
	Away	Win	26.5 $\pm$ 5.6	16.8 $\pm$ 2.8	9.8 $\pm$ 3.8	473.0 $\pm$ 115.1	81.0 $\pm$ 4.8	10.2 $\pm$ 5.4
		Draw	25.9 $\pm$ 5.2	16.6 $\pm$ 2.8	9.3 $\pm$ 3.4	462.4 $\pm$ 102.8	80.2 $\pm$ 4.5	11.6 $\pm$ 6.3
		Loss	25.6 $\pm$ 4.9	16.3 $\pm$ 2.8	9.3 $\pm$ 3.2	460.2 $\pm$ 94.9	80.8 $\pm$ 4.1	11.9 $\pm$ 6.1
	Significant (p<0.05) differences		Home>Away (d=0.38)	Home>Away (d=0.19)	W>D (d=0.11) L>D (d=0.12) Home>Away (d=0.40)	Home>Away (d=0.33)	Home>Away (d=0.20)	L>W (d=0.44) L>D (d=0.11) D>W (d=0.30) Home>Away (d=0.52)
2016-2017	Home	Win	27.7 $\pm$ 5.7	18.1 $\pm$ 3.0	9.6 $\pm$ 3.6	487.5 $\pm$ 119.8	81.2 $\pm$ 5.2	12.6 $\pm$ 5.9
		Draw	27.6 $\pm$ 5.9	17.6 $\pm$ 2.9	10.0 $\pm$ 3.8	484.9 $\pm$ 114.5	81.2 $\pm$ 4.8	14.3 $\pm$ 7.0
		Loss	26.6 $\pm$ 5.5	17.3 $\pm$ 2.9	9.3 $\pm$ 3.4	460.6 $\pm$ 104.4	80.5 $\pm$ 4.2	13.8 $\pm$ 6.4
	Away	Win	27.7 $\pm$ 5.7	18.1 $\pm$ 2.9	9.6 $\pm$ 4.0	490.7 $\pm$ 123.6	82.0 $\pm$ 4.1	10.6 $\pm$ 5.6
		Draw	26.0 $\pm$ 5.5	17.0 $\pm$ 2.8	9.0 $\pm$ 3.8	460.2 $\pm$ 108.8	80.5 $\pm$ 5.0	10.9 $\pm$ 6.7
		Loss	25.2 $\pm$ 5.0	16.7 $\pm$ 2.8	8.5 $\pm$ 2.9	447.9 $\pm$ 94.2	80.3 $\pm$ 4.7	12.2 $\pm$ 6.0
	Significant (p<0.05) differences		Home>Away (d=0.31)	Home>Away (d=0.22)	Home>Away (d=0.29)	Home>Away (d=0.23)		Home>Away (d=0.40)
2017-2018	Home	Win	28.8 $\pm$ 5.3	18.1 $\pm$ 2.8	10.8 $\pm$ 4.0	526.9 $\pm$ 110.2	82.1 $\pm$ 4.3	12.1 $\pm$ 5.8
		Draw	28.0 $\pm$ 5.3	18.0 $\pm$ 2.8	10.0 $\pm$ 3.8	506.8 $\pm$ 116.9	80.7 $\pm$ 4.7	14.4 $\pm$ 7.3
		Loss	29.5 $\pm$ 5.3	18.5 $\pm$ 2.7	11.0 $\pm$ 4.4	530.1 $\pm$ 105.3	81.5 $\pm$ 4.2	15.8 $\pm$ 7.4
	Away	Win	26.3 $\pm$ 5.4	17.5 $\pm$ 2.8	8.8 $\pm$ 3.3	473.3 $\pm$ 121.5	80.1 $\pm$ 5.2	8.2 $\pm$ 4.0
		Draw	27.0 $\pm$ 4.8	18.0 $\pm$ 2.6	9.0 $\pm$ 2.9	488.8 $\pm$ 103.2	80.4 $\pm$ 3.8	12.0 $\pm$ 6.1
		Loss	26.2 $\pm$ 4.8	17.2 $\pm$ 2.8	9.0 $\pm$ 3.1	477.7 $\pm$ 95.8	80.8 $\pm$ 3.8	10.5 $\pm$ 5.5
	Significant (p<0.05) differences		Home>Away (d=0.60)	Home>Away (d=0.28)	Home>Away (d=0.62)	Home>Away (d=0.53)	Home>Away (d=0.32)	L>W (d=0.54) L>D (d=0.09) Home>Away (d=0.73)
2018-2019	Home	Win	27.6 $\pm$ 5.2	16.5 $\pm$ 2.3	11.1 $\pm$ 4.2	492.2 $\pm$ 108.4	82.1 $\pm$ 4.2	12.6 $\pm$ 6.0
		Draw	27.6 $\pm$ 4.0	16.7 $\pm$ 2.4	10.9 $\pm$ 3.3	496.0 $\pm$ 75.0	81.5 $\pm$ 2.9	13.8 $\pm$ 6.0
		Loss	27.6 $\pm$ 5.0	16.6 $\pm$ 2.2	11.0 $\pm$ 3.6	493.5 $\pm$ 92.8	81.5 $\pm$ 3.7	16.4 $\pm$ 8.2
	Away	Win	25.8 $\pm$ 5.8	16.0 $\pm$ 2.6	9.8 $\pm$ 3.9	464.7 $\pm$ 115.5	80.5 $\pm$ 4.7	9.7 $\pm$ 4.8
		Draw	25.6 $\pm$ 4.6	16.0 $\pm$ 2.7	9.6 $\pm$ 3.0	458.1 $\pm$ 86.1	79.9 $\pm$ 3.6	11.1 $\pm$ 5.4
		Loss	25.9 $\pm$ 4.7	16.1 $\pm$ 2.7	9.9 $\pm$ 3.3	465.4 $\pm$ 92.0	81.5 $\pm$ 3.4	11.9 $\pm$ 6.3
	Significant (p<0.05) differences		Home>Away (d=0.43)	Home>Away (d=0.22)	Home>Away (d=0.45)	Home>Away (d=0.39)	Home>Away (d=0.31)	Home>Away (d=0.64)
2019-2020	Home	Win	26.6 $\pm$ 5.2	16.0 $\pm$ 2.6	10.6 $\pm$ 3.4	464.3 $\pm$ 102.1	82.1 $\pm$ 4.0	12.2 $\pm$ 6.4
		Draw	29.1 $\pm$ 6.2	16.9 $\pm$ 2.5	12.2 $\pm$ 4.6	512.9 $\pm$ 124.1	81.8 $\pm$ 4.5	17.4 $\pm$ 9.0
		Loss	27.6 $\pm$ 5.1	16.2 $\pm$ 2.4	11.4 $\pm$ 3.5	484.9 $\pm$ 94.3	81.6 $\pm$ 3.3	16.5 $\pm$ 7.2
	Away	Win	25.6 $\pm$ 4.8	16.0 $\pm$ 2.3	9.6 $\pm$ 3.2	451.3 $\pm$ 96.0	81.3 $\pm$ 4.2	10.4 $\pm$ 5.1
		Draw	25.2 $\pm$ 5.8	15.9 $\pm$ 2.9	9.2 $\pm$ 3.6	441.9 $\pm$ 110.8	79.8 $\pm$ 5.2	11.3 $\pm$ 7.0
		Loss	25.8 $\pm$ 5.1	15.9 $\pm$ 2.8	9.9 $\pm$ 3.4	460.2 $\pm$ 94.4	81.8 $\pm$ 3.6	12.8 $\pm$ 6.6
	Significant (p<0.05) differences		Home>Away (d=0.45)		Home>Away (d=0.53)	Home>Away (d=0.36)	Home>Away (d=0.22)	L>D (d=0.09) Home>Away (d=0.60)
2020-2021	Home	Win	27.1 $\pm$ 5.6	16.2 $\pm$ 2.8	10.9 $\pm$ 3.9	488.6 $\pm$ 112.4	81.6 $\pm$ 4.5	12.7 $\pm$ 6.6
		Draw	26.8 $\pm$ 4.7	16.2 $\pm$ 2.7	10.6 $\pm$ 2.9	485.8 $\pm$ 86.6	81.2 $\pm$ 4.1	14.1 $\pm$ 6.5
		Loss	25.2 $\pm$ 6.0	15.4 $\pm$ 3.0	9.7 $\pm$ 3.6	446.6 $\pm$ 114.0	79.4 $\pm$ 4.8	13.2 $\pm$ 7.1
	Away	Win	27.6 $\pm$ 6.0	16.6 $\pm$ 2.7	11.0 $\pm$ 4.4	490.9 $\pm$ 119.3	81.1 $\pm$ 5.4	12.3 $\pm$ 6.4
		Draw	25.6 $\pm$ 5.1	15.7 $\pm$ 2.4	9.9 $\pm$ 3.5	463.4 $\pm$ 101.6	80.4 $\pm$ 4.8	13.0 $\pm$ 6.3
		Loss	25.0 $\pm$ 5.0	15.5 $\pm$ 2.6	9.5 $\pm$ 3.3	452.4 $\pm$ 96.8	80.1 $\pm$ 4.5	12.0 $\pm$ 6.1
	Significant (p<0.05) differences							Home>Away (d=0.19)

W: win; D: draw; L: loss; d: Cohen's d

Table III. Mean $\pm$ SD of variables related to offence and goal scoring attempts

			Comers	Offsides	Attacks	Counterattacks	Attacking Set piece	Shots	Shots on target
All	Home	Win	5.1 $\pm$ 2.7	1.9 $\pm$ 1.6	91.6 $\pm$ 12.1	15.7 $\pm$ 4.3	9.6 $\pm$ 3.8	14.0 $\pm$ 5.5	5.9 $\pm$ 2.9
		Draw	5.0 $\pm$ 2.8	2.0 $\pm$ 1.5	94.0 $\pm$ 13.2	15.0 $\pm$ 4.3	10.0 $\pm$ 4.2	13.0 $\pm$ 5.0	4.0 $\pm$ 2.4
		Loss	5.0 $\pm$ 2.8	1.8 $\pm$ 1.5	94.0 $\pm$ 14.8	14.4 $\pm$ 4.3	10.2 $\pm$ 4.3	12.5 $\pm$ 4.9	4.0 $\pm$ 2.2
	Away	Win	4.2 $\pm$ 2.5	1.7 $\pm$ 1.5	87.0 $\pm$ 11.9	14.8 $\pm$ 4.1	8.2 $\pm$ 3.5	12.5 $\pm$ 5.0	5.3 $\pm$ 2.5
		Draw	4.3 $\pm$ 2.5	1.7 $\pm$ 1.5	87.3 $\pm$ 12.8	14.2 $\pm$ 4.3	8.2 $\pm$ 3.5	10.6 $\pm$ 4.9	3.6 $\pm$ 2.3
		Loss	4.1 $\pm$ 2.4	1.6 $\pm$ 1.3	87.0 $\pm$ 12.8	13.7 $\pm$ 4.1	8.4 $\pm$ 3.7	9.9 $\pm$ 4.3	3.1 $\pm$ 1.9
	Significant (p<0.05) differences		Home>Away (d=0.37)	Home>Away (d=0.10)	L>W (d=0.28) D>W (d=0.16) Home>Away (d=0.55)	W>D (d=0.17) W>L (d=0.23) Home>Away (d=0.17)	D>W (d=0.11) L>W (d=0.18) Home>Away (d=0.48)	W>D (d=0.16) W>L (d=0.19) Home>Away (d=0.50)	W>D (d=0.64) W>L (d=0.51) Home>Away (d=0.33)
2016-2017	Home	Win	5.0 $\pm$ 2.5	1.9 $\pm$ 1.7	94.7 $\pm$ 11.7	16.8 $\pm$ 4.3	9.6 $\pm$ 3.5	12.2 $\pm$ 4.6	4.9 $\pm$ 2.1
		Draw	4.8 $\pm$ 2.6	1.8 $\pm$ 1.4	96.5 $\pm$ 15.1	15.0 $\pm$ 4.4	10.6 $\pm$ 4.1	11.5 $\pm$ 5.1	3.8 $\pm$ 2.6
		Loss	5.0 $\pm$ 2.9	1.9 $\pm$ 1.6	96.2 $\pm$ 16.7	15.8 $\pm$ 4.7	10.4 $\pm$ 4.8	11.2 $\pm$ 4.8	3.2 $\pm$ 2.1
	Away	Win	4.2 $\pm$ 2.3	2.0 $\pm$ 1.6	91.4 $\pm$ 13.5	15.0 $\pm$ 4.0	8.4 $\pm$ 3.7	12.2 $\pm$ 5.2	5.4 $\pm$ 2.7
		Draw	4.0 $\pm$ 2.5	2.1 $\pm$ 1.7	90.2 $\pm$ 12.2	15.8 $\pm$ 4.4	8.0 $\pm$ 3.2	9.6 $\pm$ 4.8	3.1 $\pm$ 2.2
		Loss	4.0 $\pm$ 2.3	1.6 $\pm$ 1.3	90.2 $\pm$ 12.4	14.7 $\pm$ 4.5	8.7 $\pm$ 3.9	9.3 $\pm$ 3.8	3.0 $\pm$ 1.8
	Significant (p<0.05) differences		Home>Away (d=0.37)		L>W (d=0.22) Home>Away (d=0.45)		L>W (d=0.22) Home>Away (d=0.48)	Home>Away (d=0.33)	W>D (d=0.64) W>L (d=0.53)
2017-2018	Home	Win	5.6 $\pm$ 2.5	2.1 $\pm$ 1.6	96.4 $\pm$ 10.3	16.5 $\pm$ 4.3	10.4 $\pm$ 3.6	14.3 $\pm$ 5.6	5.9 $\pm$ 2.6
		Draw	5.2 $\pm$ 2.9	1.7 $\pm$ 1.4	97.0 $\pm$ 9.5	15.8 $\pm$ 4.3	10.3 $\pm$ 4.4	12.2 $\pm$ 4.9	4.0 $\pm$ 2.3
		Loss	5.3 $\pm$ 3.2	1.8 $\pm$ 1.6	100.2 $\pm$ 13.9	15.0 $\pm$ 4.1	10.8 $\pm$ 4.4	12.2 $\pm$ 5.0	3.8 $\pm$ 2.1
	Away	Win	3.4 $\pm$ 1.8	1.8 $\pm$ 1.5	87.5 $\pm$ 11.7	16.2 $\pm$ 4.6	7.3 $\pm$ 3.1	11.4 $\pm$ 4.5	4.8 $\pm$ 2.4
		Draw	4.7 $\pm$ 2.7	1.9 $\pm$ 1.6	91.7 $\pm$ 12.1	15.0 $\pm$ 3.6	8.9 $\pm$ 3.1	10.5 $\pm$ 5.2	3.6 $\pm$ 2.6
		Loss	3.8 $\pm$ 2.1	1.7 $\pm$ 1.3	89.6 $\pm$ 13.1	14.5 $\pm$ 4.3	8.0 $\pm$ 3.5	9.1 $\pm$ 4.0	2.5 $\pm$ 1.6
	Significant (p<0.05) differences				L>W (d=0.43) D>W (d=0.24) Home>Away (d=0.82)	W>L (d=0.30)	Home>Away (d=0.75)	W>L (d=0.23) Home>Away (d=0.64)	W>D (d=0.50) W>L (d=0.72) Home>Away (d=0.50)
2018-2019	Home	Win	4.9 $\pm$ 3.0	1.8 $\pm$ 1.6	90.9 $\pm$ 11.6	15.5 $\pm$ 4.0	9.2 $\pm$ 4.2	14.1 $\pm$ 5.0	5.8 $\pm$ 2.5
		Draw	4.8 $\pm$ 2.9	1.5 $\pm$ 1.4	92.9 $\pm$ 10.9	14.3 $\pm$ 4.4	10.0 $\pm$ 4.2	12.8 $\pm$ 4.6	4.3 $\pm$ 2.3
		Loss	5.2 $\pm$ 2.7	1.5 $\pm$ 1.3	95.3 $\pm$ 13.3	14.9 $\pm$ 4.9	10.6 $\pm$ 4.4	13.2 $\pm$ 4.9	4.1 $\pm$ 2.2
	Away	Win	4.4 $\pm$ 2.3	1.3 $\pm$ 1.5	86.3 $\pm$ 11.1	14.3 $\pm$ 3.3	8.4 $\pm$ 3.0	11.8 $\pm$ 4.8	4.9 $\pm$ 2.5
		Draw	4.1 $\pm$ 2.3	1.5 $\pm$ 1.3	87.4 $\pm$ 12.6	13.8 $\pm$ 4.4	8.4 $\pm$ 4.0	10.6 $\pm$ 5.1	3.3 $\pm$ 2.0
		Loss	3.9 $\pm$ 2.4	1.6 $\pm$ 1.4	86.6 $\pm$ 12.3	12.9 $\pm$ 3.8	8.2 $\pm$ 3.7	9.8 $\pm$ 4.5	3.0 $\pm$ 2.0
	Significant (p<0.05) differences		Home>Away (d=0.34)		L>W (d=0.39) Home>Away (d=0.63)	W>L (d=0.39) Home>Away (d=0.33)	L>W (d=0.25) Home>Away (d=0.46)	Home>Away (d=0.67)	W>D (d=0.49) W>L (d=0.51) Home>Away (d=0.49)
2019-2020	Home	Win	4.8 $\pm$ 2.8	1.7 $\pm$ 1.5	86.8 $\pm$ 12.2	14.5 $\pm$ 4.2	9.4 $\pm$ 3.9	15.3 $\pm$ 6.1	6.4 $\pm$ 3.6
		Draw	5.4 $\pm$ 2.7	1.6 $\pm$ 1.4	93.7 $\pm$ 13.2	13.9 $\pm$ 3.9	10.1 $\pm$ 3.9	14.3 $\pm$ 4.7	4.9 $\pm$ 2.3
		Loss	5.3 $\pm$ 2.5	1.6 $\pm$ 1.4	93.6 $\pm$ 12.3	14.0 $\pm$ 4.0	10.4 $\pm$ 4.3	14.1 $\pm$ 4.9	4.5 $\pm$ 2.3
	Away	Win	4.1 $\pm$ 2.3	1.6 $\pm$ 1.3	84.4 $\pm$ 10.4	14.8 $\pm$ 3.9	7.9 $\pm$ 3.3	13.2 $\pm$ 4.8	5.6 $\pm$ 2.2
		Draw	3.7 $\pm$ 2.2	1.5 $\pm$ 1.3	81.7 $\pm$ 12.9	12.9 $\pm$ 4.2	7.3 $\pm$ 3.3	11.2 $\pm$ 4.2	3.8 $\pm$ 1.9
		Loss	4.3 $\pm$ 2.5	1.4 $\pm$ 1.4	85.4 $\pm$ 11.9	13.6 $\pm$ 3.9	8.6 $\pm$ 3.7	11.2 $\pm$ 4.1	3.4 $\pm$ 1.8
	Significant (p<0.05) differences		Home>Away (d=0.44)		L>W (d=0.42) D>W (d=0.22) Home>Away (d=0.62)	W>D (d=0.24)	L>W (d=0.24) Home>Away (d=0.55)	Home>Away (d=0.59)	W>D (d=0.53) W>L (d=0.71) Home>Away (d=0.41)
2020-2021	Home	Win	5.3 $\pm$ 2.7	1.8 $\pm$ 1.5	88.7 $\pm$ 12.3	14.9 $\pm$ 4.3	9.4 $\pm$ 3.9	14.5 $\pm$ 5.8	6.5 $\pm$ 3.3
		Draw	5.2 $\pm$ 2.9	2.0 $\pm$ 1.7	88.2 $\pm$ 16.0	13.6 $\pm$ 4.3	9.8 $\pm$ 4.6	12.9 $\pm$ 5.8	4.4 $\pm$ 2.3
		Loss	4.4 $\pm$ 2.7	2.0 $\pm$ 1.5	85.1 $\pm$ 14.3	12.9 $\pm$ 3.6	8.9 $\pm$ 3.6	11.3 $\pm$ 4.3	4.0 $\pm$ 2.1
	Away	Win	5.0 $\pm$ 3.2	1.6 $\pm$ 1.4	86.4 $\pm$ 11.9	13.7 $\pm$ 4.2	9.1 $\pm$ 4.2	13.9 $\pm$ 5.4	6.0 $\pm$ 2.8
		Draw	5.0 $\pm$ 2.8	1.7 $\pm$ 1.6	85.0 $\pm$ 11.5	13.6 $\pm$ 4.0	8.6 $\pm$ 3.5	11.4 $\pm$ 5	4.1 $\pm$ 2.7
		Loss	4.5 $\pm$ 2.7	1.6 $\pm$ 1.3	83.1 $\pm$ 12.8	12.9 $\pm$ 3.6	8.4 $\pm$ 3.8	10.0 $\pm$ 4.7	3.5 $\pm$ 2.2
	Significant (p<0.05) differences			Home>Away (d=0.22)	Home>Away (d=0.23)	W>D (d=0.29)		W>L (d=0.38) Home>Away (d=0.28)	W>D (d=0.51) W>L (d=0.69) Home>Away (d=0.22)

W: win; D: draw; L: loss; d: Cohen's d

Table IV. Mean $\pm$ SD of variables related to defence and challenges

			Tackles	% Successful tackles	Interceptions	Recoveries	Challenges	% Challenges won
All	Home	Win	33.6 $\pm$ 8.9	59.2 $\pm$ 9.8	50.3 $\pm$ 10.9	57.0 $\pm$ 7.5	171.8 $\pm$ 23.7	51.6 $\pm$ 4.6
		Draw	32.0 $\pm$ 9.1	58.0 $\pm$ 9.7	51.0 $\pm$ 11.7	57.0 $\pm$ 8.2	176.0 $\pm$ 24.8	50.0 $\pm$ 4.2
		Loss	33.5 $\pm$ 9.0	56.4 $\pm$ 10.2	49.1 $\pm$ 10.4	56.1 $\pm$ 8.8	174.6 $\pm$ 25.4	49.2 $\pm$ 4.3
	Away	Win	35.3 $\pm$ 9.4	57.2 $\pm$ 10.5	53.7 $\pm$ 11.2	57.2 $\pm$ 8.0	174.6 $\pm$ 25.4	50.8 $\pm$ 4.3
		Draw	35.1 $\pm$ 9.8	56.9 $\pm$ 10.1	53.9 $\pm$ 10.8	56.7 $\pm$ 8.7	175.8 $\pm$ 24.8	49.5 $\pm$ 4.2
		Loss	35.0 $\pm$ 9.2	56.0 $\pm$ 10.1	50.5 $\pm$ 10.3	54.0 $\pm$ 7.9	171.8 $\pm$ 23.7	48.4 $\pm$ 4.6
	Significant (p<0.05) differences		Away>Home (d=0.22)	W>L (d=0.12) Home>Away (d=0.13)	W>L (d=0.32) D>L (d=0.27) Away>Home (d=0.28)	W>L (d=0.22) D>L (d=0.15) Home>Away (d=0.10)		W>L (d=0.40) W>D (d=0.20) D>L (d=0.18) Home>Away (d=0.20)
2016-2017	Home	Win	37.1 $\pm$ 9.2	56.5 $\pm$ 9.9	49.4 $\pm$ 10.6	56.8 $\pm$ 6.9	184.6 $\pm$ 24.3	51.2 $\pm$ 4.6
		Draw	35.6 $\pm$ 9.6	55.6 $\pm$ 8.8	49.6 $\pm$ 12.1	56.3 $\pm$ 8.7	186.0 $\pm$ 26.2	50.5 $\pm$ 4.0
		Loss	37.7 $\pm$ 9.9	53.5 $\pm$ 8.6	48.3 $\pm$ 11.4	56.1 $\pm$ 9.4	187.6 $\pm$ 28.7	48.6 $\pm$ 4.3
	Away	Win	40.3 $\pm$ 10.0	54.4 $\pm$ 9.0	52.5 $\pm$ 10.3	57.0 $\pm$ 8.4	187.6 $\pm$ 28.7	51.4 $\pm$ 4.3
		Draw	38.4 $\pm$ 10.7	53.1 $\pm$ 11.3	51.9 $\pm$ 11.7	56.9 $\pm$ 10.2	186.0 $\pm$ 26.2	49.5 $\pm$ 4.0
		Loss	37.6 $\pm$ 9.4	54.4 $\pm$ 8.8	51.0 $\pm$ 10.4	54.6 $\pm$ 7.3	184.6 $\pm$ 24.3	48.8 $\pm$ 4.6
	Significant (p<0.05) differences		Away>Home (d=0.23)		W>L (d=0.22) Away>Home (d=0.28)			W>L (d=0.34)
2017-2018	Home	Win	33.4 $\pm$ 8.5	60.4 $\pm$ 9.7	52.6 $\pm$ 11.5	61.6 $\pm$ 6.5	179.1 $\pm$ 24.5	51.7 $\pm$ 4.8
		Draw	33.4 $\pm$ 8.9	59.4 $\pm$ 9.5	54.8 $\pm$ 13.3	60.3 $\pm$ 6.3	182.2 $\pm$ 22.1	50.5 $\pm$ 4.6
		Loss	34.0 $\pm$ 9.0	57.6 $\pm$ 10.0	51.1 $\pm$ 10.7	60.3 $\pm$ 9.1	184.6 $\pm$ 25.0	49.9 $\pm$ 3.5
	Away	Win	36.8 $\pm$ 9.5	57.2 $\pm$ 9.7	58.3 $\pm$ 11.4	62.0 $\pm$ 7.2	184.6 $\pm$ 25.0	50.1 $\pm$ 3.5
		Draw	35.3 $\pm$ 8.5	58.5 $\pm$ 8.8	57.4 $\pm$ 10.7	60.6 $\pm$ 7.8	182.2 $\pm$ 22.1	49.5 $\pm$ 4.6
		Loss	35.4 $\pm$ 9.0	58.0 $\pm$ 9.9	54.7 $\pm$ 10.3	58.8 $\pm$ 8.0	179.1 $\pm$ 24.5	48.3 $\pm$ 4.8
	Significant (p<0.05) differences		Away>Home (d=0.27)		W>L (d=0.32) D>L (d=0.32) Away>Home (d=0.40)	W>L (d=0.25)		W>L (d=0.28) Home>Away (d=0.35)
2018-2019	Home	Win	32.7 $\pm$ 9.1	61.1 $\pm$ 9.7	48.8 $\pm$ 10.0	58.0 $\pm$ 7.2	166.2 $\pm$ 21.7	52.2 $\pm$ 4.3
		Draw	32.1 $\pm$ 8.9	59.4 $\pm$ 9.4	49.9 $\pm$ 11.1	57.3 $\pm$ 8.8	176.1 $\pm$ 24.1	50.2 $\pm$ 4.1
		Loss	32.5 $\pm$ 8.4	58.3 $\pm$ 11.4	48.4 $\pm$ 8.5	57.2 $\pm$ 7.6	170.1 $\pm$ 22.5	49.5 $\pm$ 4.5
	Away	Win	33.4 $\pm$ 7.8	58.4 $\pm$ 11.7	54.4 $\pm$ 11.0	56.7 $\pm$ 7.5	170.1 $\pm$ 22.5	50.5 $\pm$ 4.5
		Draw	34.9 $\pm$ 10	59.1 $\pm$ 9.5	52.0 $\pm$ 8.8	56.7 $\pm$ 8.3	176.1 $\pm$ 24.1	49.8 $\pm$ 4.1
		Loss	35.4 $\pm$ 7.9	55.5 $\pm$ 10.5	48.2 $\pm$ 10.4	53.6 $\pm$ 7.4	166.2 $\pm$ 21.7	47.8 $\pm$ 4.3
	Significant (p<0.05) differences		Away>Home (d=0.25)		W>L (d=0.42) D>L (d=0.31) Away>Home (d=0.28)	W>L (d=0.23) Home>Away (d=0.25)	D>W (d=0.26) D>L (d=0.24)	W>L (d=0.45) W>D (d=0.23) Home>Away (d=0.33)
2019-2020	Home	Win	31.9 $\pm$ 8.2	60.0 $\pm$ 9.3	47.3 $\pm$ 10.1	53.8 $\pm$ 6.6	164.8 $\pm$ 19.4	51.8 $\pm$ 4.3
		Draw	29.3 $\pm$ 8.5	57.4 $\pm$ 11.9	47.7 $\pm$ 9.9	54.5 $\pm$ 7.5	164.2 $\pm$ 21.4	50.1 $\pm$ 4.4
		Loss	31.2 $\pm$ 8.1	58.3 $\pm$ 10.1	46.0 $\pm$ 9.3	54.7 $\pm$ 8.2	164.8 $\pm$ 20.8	49.5 $\pm$ 4.5
	Away	Win	34.2 $\pm$ 8.2	56.7 $\pm$ 11.3	52.3 $\pm$ 10.7	55.6 $\pm$ 7.6	164.8 $\pm$ 20.8	50.5 $\pm$ 4.5
		Draw	32.8 $\pm$ 8.1	56.6 $\pm$ 9.7	54.0 $\pm$ 11.2	54.7 $\pm$ 7.5	164.2 $\pm$ 21.4	49.9 $\pm$ 4.4
		Loss	32.0 $\pm$ 8.0	56.1 $\pm$ 11.2	46.8 $\pm$ 8.1	51.2 $\pm$ 7.6	164.8 $\pm$ 19.4	48.2 $\pm$ 4.3
	Significant (p<0.05) differences		Away>Home (d=0.26)	Home>Away (d=0.22)	W>L (d=0.42) D>L (d=0.44) Away>Home (d=0.28)			W>L (d=0.42) W>D (d=0.23) Home>Away (d=0.23)
2020-2021	Home	Win	32.3 $\pm$ 8.4	58.3 $\pm$ 9.8	52.8 $\pm$ 11.4	54.9 $\pm$ 7.7	163.4 $\pm$ 19.9	51.5 $\pm$ 4.8
		Draw	31.7 $\pm$ 8.7	57.6 $\pm$ 7.4	50.7 $\pm$ 10.5	55.1 $\pm$ 8.6	169.0 $\pm$ 24.1	51.2 $\pm$ 3.9
		Loss	33.1 $\pm$ 8.9	53.9 $\pm$ 9.6	52.0 $\pm$ 11.1	52.6 $\pm$ 7.7	168.8 $\pm$ 22.3	48.2 $\pm$ 4.4
	Away	Win	32.3 $\pm$ 9.8	58.9 $\pm$ 9.9	51.2 $\pm$ 11.6	55.1 $\pm$ 7.6	168.8 $\pm$ 22.3	51.8 $\pm$ 4.4
		Draw	34.3 $\pm$ 11.1	57.1 $\pm$ 10.4	54.4 $\pm$ 10.9	54.1 $\pm$ 7.9	169.0 $\pm$ 24.1	48.8 $\pm$ 3.9
		Loss	33.8 $\pm$ 10.1	56.0 $\pm$ 10.1	51.2 $\pm$ 10.4	51.9 $\pm$ 7.4	163.4 $\pm$ 19.9	48.5 $\pm$ 4.8
	Significant (p<0.05) differences			W>L (d=0.28)		W>L (d=0.32) D>L (d=0.24)		W>L (d=0.52) W>D (d=0.24)

W: win; D: draw; L: loss; d: Cohen's d

Table V. Odds ratios and 95% confidence intervals from the mixed multinomial logistic regression analysis

	All	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Total distance (km)	0.99 [0.98-1.01]	1.02 [0.98-1.06]	1.00 [0.96-1.04]	0.98 [0.95-1.01]	0.96 [0.93-1.00]	1.03 [1.00-1.06]
High-intensity distance (km)	1.07 [0.99-1.16]	1.12 [0.87-1.45]	1.12 [0.91-1.38]	H: 0.84 [0.69-1.03] A: 1.16 [0.71-1.90]	1.02 [0.87-1.20]	1.16 [0.99-1.37]
Sprint distance (100-m)	1.05 [1.03-1.07]	1.08 [1.01-1.14]	1.05 [1.00-1.11]	1.01 [0.98-1.04]	1.05 [1.01-1.10]	1.07 [1.02-1.12]
Ball possession time (min)	1.01 [1.00-1.02]	1.03 [1.00-1.06]	1.01 [0.98-1.04]	1.02 [0.98-1.07]	H: 0.94 [0.90-0.98] A: 1.01 [0.91-1.13]	1.04 [1.01-1.07]
Ball possession time in own half (min)	1.01 [0.99-1.04]	1.08 [1.02-1.15]	0.99 [0.93-1.05]	0.99 [0.93-1.05]	0.96 [0.90-1.02]	1.06 [1.00-1.13]
Ball possession time in opponent's half (min)	1.01 [0.99-1.04]	1.02 [0.97-1.07]	1.02 [0.98-1.07]	1.02 [0.98-1.07]	H: 0.92 [0.86-0.98] A: 1.02 [0.82-1.20]	1.06 [1.01-1.11]
Passes	1.00 [1.00-1.00]	1.00 [1.00-1.00]	1.00 [1.00-1.00]	1.00 [1.00-1.00]	1.00 [1.00-1.00]	1.00 [1.00-1.00]
% Successful passes	1.03 [1.01-1.05]	1.03 [0.99-1.06]	1.03 [0.99-1.07]	1.04 [1.00-1.09]	1.04 [1.00-1.09]	1.03 [1.00-1.07]
Crosses	0.97 [0.96-0.98]	0.98 [0.96-1.01]	0.95 [0.93-0.98]	0.98 [0.96-1.00]	0.96 [0.93-0.98]	0.99 [0.96-1.01]
Corners	1.01 [0.98-1.04]	1.04 [0.98-1.11]	H: 1.04 [0.95-1.13] A: 0.85 [0.68-1.05]	1.03 [0.97-1.09]	0.99 [0.92-1.05]	1.03 [0.97-1.10]
Offsides	1.02 [0.97-1.08]	1.01 [0.91-1.13]	1.05 [0.94-1.18]	1.04 [0.93-1.17]	1.04 [0.92-1.17]	0.96 [0.85-1.08]
Attacks	1.00 [1.00-1.00]	1.00 [1.00-1.00]	0.99 [0.98-1.01]	1.00 [0.98-1.01]	H: 0.97 [0.65-0.99] A: 1.01 [0.97-1.06]	1.01 [1.00-1.02]
Counterattacks	1.04 [1.03-1.06]	H: 1.08 [1.03-1.15] A: 0.98 [0.86-1.11]	1.05 [1.00-1.09]	1.05 [1.01-1.09]	1.06 [1.02-1.11]	1.06 [1.01-1.10]
Attacking set piece	0.99 [0.97-1.01]	0.99 [0.95-1.03]	H: 1.00 [0.95-1.06] A: 0.91 [0.78-1.06]	0.99 [0.95-1.03]	0.99 [0.95-1.03]	1.01 [0.97-1.06]
Shots	1.06 [1.04-1.07]	1.07 [1.03-1.11]	1.06 [1.02-1.10]	1.05 [1.02-1.09]	1.05 [1.01-1.08]	1.08 [1.05-1.12]
Shots on target	1.27 [1.23-1.31]	1.30 [1.20-1.40]	1.28 [1.18-1.38]	1.27 [1.18-1.37]	H: 1.18 [1.08-1.30] A: 1.38 [1.09-1.77]	1.29 [1.21-1.39]
Tackles	1.00 [1.00-1.00]	1.01 [0.99-1.03]	1.01 [0.99-1.02]	1.00 [0.97-1.01]	1.02 [1.00-1.05]	0.99 [0.98-1.01]
% Successful tackles	1.01 [1.00-1.02]	1.01 [1.00-1.03]	1.00 [0.99-1.02]	1.01 [0.99-1.02]	1.01 [0.99-1.03]	1.02 [1.00-1.03]
Interceptions	1.00 [1.00-1.00]	1.00 [0.99-1.01]	1.00 [0.99-1.01]	1.00 [0.99-1.02]	1.00 [0.98-1.01]	1.00 [0.99-1.02]
Recoveries	1.01 [1.00-1.02]	1.01 [0.99-1.03]	1.02 [1.00-1.04]	1.01 [0.99-1.03]	1.00 [0.98-1.03]	1.02 [1.00-1.04]
Challenges	1.00 [1.00-1.00]	1.00 [1.00-1.00]	1.00 [1.00-1.00]	1.00 [1.00-1.00]	1.00 [1.00-1.00]	1.00 [0.99-1.00]
% Challenges won	1.06 [1.04-1.08]	1.06 [1.02-1.10]	1.05 [1.01-1.09]	H: 1.10 [1.04-1.16] A: 1.02 [0.90-1.16]	1.05 [1.01-1.09]	1.08 [1.04-1.12]

When there was a significant ($p < 0.05$) interaction between a given performance variable and match location, i.e. match location affected the odds ratio, two odds ratios are shown, respectively for home (H) and away (A) matches. When there was no significant performance variable by location interaction ($p > 0.05$), one odds ratio is displayed