Original Paper DOI: https://doi.org/10.5114/biolsport.2022.105331

A longitudinal analysis of technical-tactical and physical performance of the teams in the Spanish LaLiga Santander: An eight-season study

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ABSTRACT: The aim of this study was to describe in the way teams played for the last eight seasons (from 2011–12 to 2018–19) in the Spanish Football First Division (Spanish LaLiga Santander), taking into account team match performances (n = 5,518). Ten technical-tactical and physical variables grouped into five dimensions were used: final behaviour (shots and crosses), set piece (corners and fouls), match volume (passes), physical performance (total distance covered) and collective use of the space (team width, team length, team defence height and distance from the goalkeeper to their defence). The main results were that the number of passes and team width showed a stable trend as the seasons passed. Nevertheless, the number of shots, crosses and corners, total distance covered, team length and distance from the goalkeeper to their defence showed a descending trend. The main conclusion was that over the seasons studied, the Spanish LaLiga Santander teams were characterized by an indirect style of play that, being the usual in this league, presented some evolution. The trend in the evolution of the game is that defence is put before attack. The findings of the study may be of interest to professional football staff to know more about the particular way teams play in competition, as well as its evolution, so as to focus on the training process according to the trend that is taking place in the game.

CITATION: Errekagorri I, Castellano J, Echeazarra I et al. A longitudinal analysis of technical-tactical and physical performance of the teams in the Spanish LaLiga Santander: An eight-season study. Biol Sport. 2022;39(2):389–396.

Received: 2020-11-23; Reviewed: 2021-02-07; Re-submitted: 2021-02-26; Accepted: 2021-03-20; Published: 2021-04-21.

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Key words:
Team sport
Match analysis
Notational analysis
Playing style
Evolution

INTRODUCTION

Performance analysis of professional football teams represents a key aspect in achieving success in sport [1]. In order to do so, the use of performance indicators is essential [2], especially the selection and combination of Performance Key Elements, because they can positively impact the achievement of the best performances [3]. Generally, notational analysis has been used to objectively describe and explain football players' and teams' behaviour during a match, providing invaluable information to improve future performances [4]. The variables used to describe group behaviour are already included in the modelling of procedures proposed by football teams. Therefore, it is essential to describe the strategy performance so as to provide essential and useful information for training sessions and sport education [5]. In this sense, technological development as well as introduction of big data in top-level football teams has provided new opportunities to carefully study, even longitudinally, football players' strategy performance as well as teams' behaviour in competition [6].

Several studies have been carried out with the aim of describing the development of the game throughout history [7, 8, 9, 10]. Lago-Peñas [11] stated that the advantage of assessing performance longitudinally is that it allows one to distinguish possible match frameworks, determining the influence that several contextual or random variables may affect specific performance on a given day or during a short period of time. This kind of longitudinal studies have been generally conducted using notational analysis [7]. Nevertheless, the different cooperative variables that could be obtained through technological improvements offer information about players' and teams' technical-tactical and physical performance during matches [12].

Considering this longitudinal viewpoint, the physical dimension has received close attention [13, 14, 15]. In this line, several authors have studied the evolution of English teams playing in the Premier League throughout seven seasons [13], regarding the specific position of the players[15], or taking into account how they ended up at the end of the season [14]. Barnes et al. [13] reported that the distance covered by teams in the English Premier League had not changed much throughout the seven years, this way increasing the distance covered and high intensity actions, as well as the number

and sprint distance. Furthermore, high intensity distance and the number of high intensity runs and sprints increased significantly in all player positions in English Premier League teams [15]. Bradley et al. [14] showed that throughout the seven seasons, all the English Premier League teams increased the high intensity distance covered when they were not in possession of the ball. However, teams that finished fifth to eighth by the end of the season showed a slight increase in the short distance covered in high intensity compared to other teams when in possession of the ball. The teams ranked fifth to eighth also showed a significant increase in the distance covered while sprinting, in comparison to other teams. These results may be related to an additional motivation caused by competing for European berths. Regarding the Spanish Football First Division (Spanish LaLiga Santander), a recent study throughout four seasons [16] showed a decrease in the total distance covered and an increase in the high-intensity distances and number of sprints performed by the teams. Anyway, the conclusions of this study are not clear due to the number of seasons being just four consecutive seasons.

After describing the football players' technical activity evolution of the German Bundesliga by specific positions during three consecutive seasons, Konefał et al. [17] concluded that technical activity had developed in all players' positions. This research indicates that the technical activity evolution among professional footballers is developing in a more precise direction with a simultaneous absence of change or even a decrease in quantity or activity levels. In other leagues, as in the English Premier League, an evolution in teams' technical activity throughout the seven seasons has also been found [13, 15]. Specifically, there has been an increase in the number of passes and their effectiveness; probably the ones that have increased notably are short and medium-distance passes. Similarly, it has also been revealed that the technical requirement of those players who play in the centre of the pitch (centre-backs and central midfielders) has increased. After some time, similar attacks made by top-tier football teams had moved away from a more individualized behaviour, such as dribbling and feints in the centre of the pitch, to a more group-based performance, such as short passes and crosses into the box [7, 8]. As a result of a significant boost in the number of passes in the past years, the speed in football has also increased [10].

To sum up, it seems that football has changed in the last decades and especially in recent seasons, so it is of great interest to find

TABLE 1. Codes and definitions of the variables for each dimension analysed.

Dimensions	Codes and definitions
Final behaviour	SHOT: an attempt to score a goal, made with any part of the body that is allowed in the laws of the game, either on or off the goal. To calculate this variable, total number of shots made by the team per match are taken into account. CROSS: any ball sent into the rival team's penalty box from a wide position. To calculate this variable, total number of successful and unsuccessful crosses made by the team per match are taken into account.
Set piece	CORNER: a kick that is performed on a set piece from the corner of the field of play nearest to where the ball went out. To calculate this variable, total number of corners taken by the team per match are taken into account. FOUL: any infringement that is penalised as foul play by the referee. To calculate this variable, total number of fouls received by the team per match are taken into account.
Match volume	PASS: an intentional played ball from one player to another with any part of the body that is allowed in the laws of the game. To calculate this variable, total number of successful and unsuccessful passes made by the team per match are taken into account.
Physical performance	KM: total distance covered and accumulated by all the players in the team that participated in the match. Goalkeeper activity was also included.
Collective use of the space	WIDTH: mean team width per match, understood as the distance between the two furthest-apart players across the width of the pitch. To calculate this variable, the time in which the ball is out of play is excluded. LENGTH: mean team length per match, understood as the distance between the two furthest-apart players along the length of the pitch. To calculate this variable, the time in which the ball is out of play is excluded. HEIGHT: mean team defence depth per match, understood as the distance between the furthest back defender and the goal he is defending. To calculate this variable, the time in which the ball is out of play is excluded. GKDEF: mean distance from the goalkeeper to their defence per match. To calculate this variable, the time in which the ball is out of play is excluded.

out whether the teams' performances in their league have caused modifications in the dynamics of the game over the years. Taking this into consideration, the aim of this study was to describe the game play during eight consecutive seasons (from 2011–12 to 2018–19) in the Spanish LaLiga Santander bearing in mind the analysis of all team performances. The findings of this study may be of interest to professional football staff to have a clear idea of the aspects that describe performance in the Spanish LaLiga Santander, as well as its evolution, and on which to focus the training process. For the clubs, it would allow them to know the profile of players, who could better adjust to the present and future demands of the competition.

MATERIALS AND METHODS

Sample

For the purposes of this study, all teams' performances in the Spanish LaLiga Santander were analysed for the past eight seasons (from 2011–12 to 2018–19). All matches where the information required was not available were excluded, as well as matches where one or more players were sent off. As a result, out of a possible 6,080 performances, a total of 5,518 performances were analysed (20 teams, each playing 38 matches throughout the eight seasons), representing 90% of all the possible matches. Data were obtained from the Spanish Professional Football League, which authorised the use of the variables included in this investigation. In accordance with its ethical guidelines, this investigation does not include information that identifies football players. Data were treated in accordance with the Declaration of Helsinki, having been approved by the Ethics Committee on Humans (CEISH) of the University of the Basque Country (UPV/EHU).

Variables

Similar to other studies [18, 19], the variables were grouped into five dimensions (Table 1). In the first dimension, also known as final behaviour [13, 15] the number of shots at goal (SHOT) and the number of crosses into the penalty box (CROSS) were included. In the second dimension, set piece [20] included the number of corners taken (CORNER) and fouls (FOUL). The third dimension or the so-called match volume [14, 17] was represented by the total number of passes (PASS). The fourth dimension gave information about the physical performance of the teams [21] and was evaluated based on the total distance covered by all the players in the team (KM). The fifth and last dimension showed the collective pitch use of the teams [22, 23] grouped with the mean team width (WIDTH), mean team length (LENGTH), mean team defence depth (HEIGHT), and mean distance from the goalkeeper to their defence (GKDEF).

Procedure

Location and motion data were obtained by the computerized multi-camera tracking system *TRACAB* (ChyronHego, New York, USA) and events were obtained by the data company OPTA Sports (Opta Sports, London, UK), both using Mediacoach software. The reports were generated using Mediacoach, for the predefined performance indicators. The reliability of the OPTA system has been previously proved [24] and the reliability of the TRACAB video-tracking system has also been recently tested for positioning of the players [25] and physical performance [26], showing in both dimensions good quality of the data. The generated reports were exported into Microsoft Office Excel (Microsoft Corporation, Washington, USA), and a matrix was configured and later analysed.

Statistical analysis

Descriptive statistics data from variables were presented using mean and standard deviation. The Levene test was used to assess equality of variances. One-way analysis of variance (ANOVA) for independent samples was used to test for differences in the variables between the eight seasons (from 2011–12 to 2018–19). Significant results were then analysed using the post hoc Bonferroni's test, whereas Dunnett's T3 post hoc test was applied when the variances were not homogeneous. The level of significance was set at $p < 0.05$. Effect size (ES) was also calculated to determine meaningful differences with magnitudes classified as [27]: trivial (< 0.2), small (> 0.2–0.6), moderate (> 0.6–1.2), large (> 1.2–2.0) and very large (> 2.0–4.0). The statistical analysis was conducted using Microsoft Office Excel (Microsoft Corporation, Washington, USA) and IBM SPSS v25.0 (IBM Corp.) for Windows.

RESULTS

Final behaviour

As shown in Table 2, the SHOT values were higher ($p < 0.05$) in the first two seasons analysed (2011–12 and 2012–13) compared to the last five (from 2014–15 to 2018–19), the magnitude of these differences being small (ES = 0.2–0.3). In CROSS, the values were higher ($p < 0.05$) in the first four seasons (from 2011–12 to 2014–15) with respect to the last four (from 2015–16 to 2018–19), the magnitude of the differences being small (ES = 0.2–0.4).

Set piece

Regarding this dimension (Table 2), the first two seasons analysed (2011–12 and 2012–13) showed higher values ($p < 0.05$) compared to the last three (2016–17, 2017–18 and 2018–19) in CORNER. However, the 2013–14 season showed higher values ($p < 0.05$) compared to the last five studied (from 2014–15 to 2018–19). The 2014–15 season showed higher values ($p < 0.05$) only with respect to 2016–17. The magnitude of the differences between all these seasons was small (ES = 0.2–0.4). The FOUL variable showed the lowest values in the 2013–14, 2015–16, 2017–18 and 2018–19 seasons in relation to the 2011–12 season ($p < 0.05$) with a small magnitude (ES = 0.2–0.3).

Match volume

In relation to this dimension (Table 2), the PASS values of the 2011–12 season were higher ($p < 0.05$) than those of the 2014–15

season, with a small magnitude (ES = 0.2). However, the values of the 2016–17 and 2017–18 seasons were higher ($p < 0.05$) than those of the 2013–14 and 2014–15 seasons. The magnitude of the differences between these seasons was trivial-small (ES = 0.1–0.2).

Physical performance

The values of the KM variable (Table 2) were higher ($p < 0.05$) in the first three seasons (2011–12, 2012–13 and 2013–14) compared to the rest of the seasons analysed (from 2014–15 to 2018–19). On the one hand, the 2011–12 season showed higher values in relation to the last six seasons (from 2013–14 to 2018–19). On the other hand, the values of the 2012–13 and 2013–14 seasons were higher compared to the last five (from 2014–14 to 2018–19). The magnitude of the differences between these seasons ranged from small to moderate (ES = 0.2–0.7). It should also be noted that between the 2015–16 and 2017–18 seasons the values were higher in relation to the 2014–15 and 2018–19 seasons. The magnitude of the differences between these seasons was small (ES = 0.2–0.3).

Collective use of the space

As shown in Figure 1, the seasons 2011–12 (mean and standard deviation, 43.6 ± 2.6 m), 2013–14 (43.7 ± 2.5 m), 2015–16 (43.4 ± 2.5 m) and 2017 -18 (43.7 ± 2.7 m) showed higher values ($p < 0.05$) than those of 2014–15 (43.0 ± 2.6 m) of small magnitudes (ES = 0.2–0.3) in the WIDTH variable. Likewise, the values of the 2016–17 season (43.9 ± 2.7 m) were higher ($p < 0.05$) compared to those of 2012–13 (43.4 ± 2.7 m), 2014–15, 2015–16 and 2018–19 (43.4 ± 2.7 m) with small magnitudes (ES = 0.2–0.3). The LENGTH values for the 2011–12 season (38.2 ± 1.8 m) were higher ($p < 0.05$) than those of the other seasons studied, with a magnitude of the differences between them that ranged from small to large (ES = 0.2–1.2). With this, the 2012–13 season (37.7 ± 1.8 m) showed higher values ($p < 0.05$) compared to the 2014–15 seasons (37.2 ± 2.4 m), 2015–16 (36.6 ± 1.8 m), 2016–17 (36.2 ± 1.9 m), 2017–18 (36.1 ± 1.9 m) and 2018–19 (36.0 ± 1.7 m), with a magnitude that ranged from small to moderate (ES = 0.2–1.0). Likewise, the 2013–14 (37.5 ± 1.9 m) and 2014–15 seasons showed higher values ($p < 0.05$) in relation to those of the last four seasons analysed (from 2015–16 to 2018–19) with a magnitude that ranged from small to moderate (ES = 0.3–0.9). Finally, the values of the 2015–16 season were higher ($p < 0.05$) than those of the last three (2016–17, 2017–18 and 2018–19), the magnitude of the differences being small (ES = 0.2–0.3). In the case of HEIGHT, the values of the 2014–15 season (36.5 ± 3.2 m) were lower ($p < 0.05$) with respect to those of the other seasons analysed (2011–12 [37.8 ± 3.8 m], 2012–13 [37.9 ± 3.5 m],

TABLE 2. Means and standard deviations (sd) of the variables of the final behaviour, set piece, match volume and physical performance dimensions for each season.

	Final behaviour		Set piece		Match volume	Physical performance
Seasons	**SHOT**	**CROSS**	**CORNER**	**FOUL**	**PASS**	**KM**
2011–12	13.2[c,d,e,f,g] (5.4)	20.8[d,e,f,g] (8.7)	5.5[e,f,g] (3.0)	14.7[b,d,f,g] (4.7)	480.0[c] (121.2)	111665.8[b,c,d,e,f,g] (4683.4)
2012–13	13.2[c,d,e,f,g] (5.2)	21.1[d,e,f,g] (8.9)	5.5[e,f,g] (2.9)	14.2 (4.4)	472.4 (127.6)	111088.2[c,d,e,f,g] (4382.7)
2013–14	12.6 (5.1)	21.4[d,e,f,g] (8.8)	5.7[c,d,e,f,g] (2.9)	13.9 (4.1)	463.3 (117.0)	110508.6[c,d,e,f,g] (4464.2)
2014–15	11.9 (4.9)	21.5[d,e,f,g] (9.2)	5.1[e] (2.8)	14.2 (4.2)	459.9 (115.4)	108520.8 (4244.9)
2015–16	11.9 (4.8)	19.1 (8.9)	5.1 (2.8)	13.7 (4.3)	474.7 (110.7)	109609.3[c,g] (4207.8)
2016–17	12.1 (4.8)	18.0 (9.0)	4.6 (2.9)	14.1 (4.1)	483.6[b,c] (113.3)	109445.1[c,g] (4211.4)
2017–18	12.1 (4.7)	18.0 (8.5)	5.0 (2.7)	13.8 (4.4)	480.7[c] (116.9)	109492.4[c,g] (4060.0)
2018–19	12.2 (4.8)	18.4 (8.7)	4.8 (2.7)	13.5 (4.0)	471.6 (122.8)	108622.5 (4969.7)

SHOT is the number of shots at goal, CROSS is the number of crosses into the penalty box, CORNER is the number of corners taken, FOUL is the number of fouls received, PASS is the total number of passes, and KM is the total distance covered by all the players in the team. b > 2013–14, c > 2014–15, d > 2015–16, e > 2016–17, f > 2017–18 and g > 2018–19 for a significance level of $p < 0.05$.

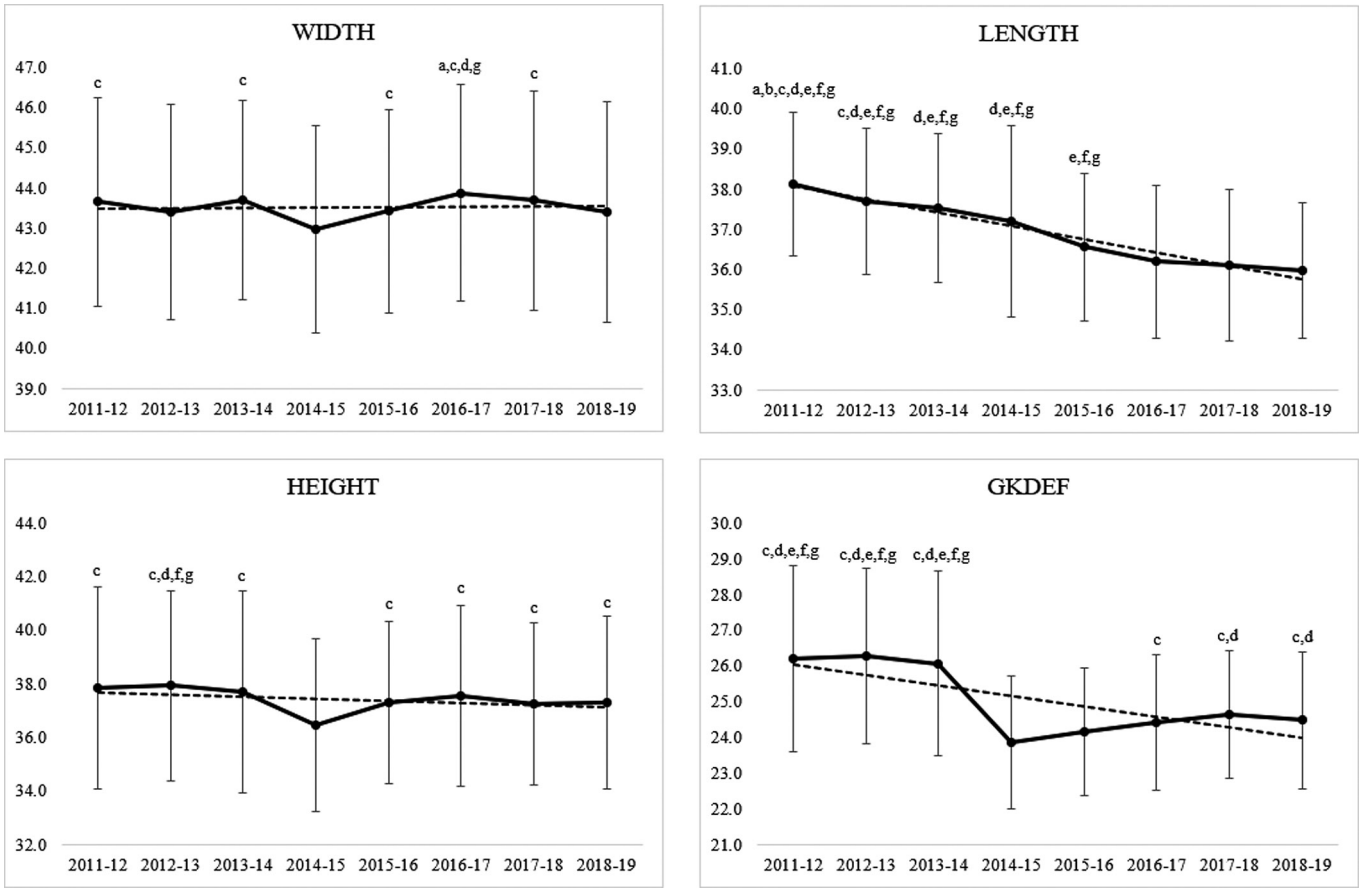

FIG. 1. Means and standard deviations (sd) of the variables of the collective use of the space dimension for each season. Dotted lines represent the trend line. WIDTH is the mean team width, LENGTH is the mean team length, HEIGHT is the mean team defence depth, and GKDEF is the mean distance from the goalkeeper to their defence. a > 2012–13, b > 2013–14, c > 2014–15, d > 2015–16, e > 2016–17, f > 2017–18 and g > 2018–19 for a significance level of $p < 0.05$.

2013–14 [37.7 ± 3.8 m], 2015–16 [37.3 ± 3.0 m], 2016–17 [37.6 ± 3.4 m], 2017–18 [37.3 ± 3.0 m] and 2018–19 [37.3 ± 3.2 m]). In this sense, the 2012–13 season also showed higher values ($p < 0.05$) than those of the 2015–16, 2017–18 and 2018–19. The magnitudes of the differences between the seasons were small (ES = 0.2–0.4). Finally, GKDEF showed higher values ($p < 0.05$) in the first three seasons (2011–12 [26.2 ± 2.6 m], 2012–13 [26.3 ± 2.5 m] and 2013–14 [26.1 ± 2.6 m]) compared to the last five (2014–15 [23.9 ± 1.8 m], 2015–16 [24.2 ± 1.8 m], 2016–17 [24.4 ± 1.9 m], 2017–18 [24.6 ± 1.8 m] and 2018–19 [24.5 ± 1.9 m), the magnitudes of the differences being moderate (ES = 0.7–1.1). In this regard, the magnitude was small (ES = 0.2–0.4). The values of the last three seasons (2016–17, 2017–18 and 2018–19) were also higher ($p < 0.05$) than those of 2014–15 and 2015–16.

DISCUSSION

The present study aimed to describe the game play during eight consecutive seasons (from 2011–12 to 2018–19) in the Spanish LaLiga Santander considering the average performance analysis of the teams during each season. This is the first research paper that analyses teams' performances in the Spanish LaLiga Santander from a large longitudinal perspective, taking into account technical behaviours, set pieces, total displacement and collective use of pitch space. The information provided by this study, especially due to the inclusion of the 5,518 performances and the fact that all of the teams in the eight championships were analysed, suggests that these outcomes are useful for learning about the evolution of the teams' performances. The main conclusion was that over the seasons studied, the Spanish LaLiga Santander teams showed an indirect playing style that remained throughout the years, changing the style somewhat in recent seasons towards a less deep game with fewer arrivals in the rival team's area. Considering the limitation of trying to describe

something as complex as style of play from certain variables, the results of the study showed that the Spanish LaLiga Santander teams' style of play has changed somewhat as the seasons have passed. It should be noted that within the indirect style of play that characterizes the Spanish LaLiga Santander, the defence seems to prevail over the attack.

In the first four seasons (from 2011–12 to 2014–15), Spanish LaLiga Santander teams were characterized by having higher values in SHOT, CORNER, and CROSS, running greater distance (KM), and playing with greater LENGTH and a greater distance from the goalkeeper to the defensive line (GKDEF). These results could be interpreted as teams showing a higher degree of offensive play, as they were able to play higher up and reach the rival's area more often. However, as the seasons passed, the values of these variables that characterized teams with a more direct and deep playing style [28] decreased.

In this sense, it should be noted that the Spanish LaLiga Santander teams were characterized with an indirect style of play that remained throughout the years, represented by a similar number of PASS and WIDTH. Nevertheless, as of the 2015–16 season, these variables showed a small increase. It seems that from that season on, the teams strengthened the defensive aspects in such a way that, although the teams increased somewhat the number of passes and the amplitude in the game, it caused lower efficiency in the game (e.g., fewer attempts on goals). It is widely known [29] that the game style of the Spanish LaLiga Santander is characterized by a possession style football with a high pass rate. Furthermore, in a recent Spanish LaLiga Santander study [18, 30], the number of shots (and overall, their accuracy), the number of corners, and the number of passes (and their efficiency) demonstrated high correlations with the number of points at the end of the seasons. Previous studies [7, 8, 10, 13] have pointed to the existence of an increase in the number of passes in the last few seasons, from 2011–12 onwards, which has not shown evolution to an indirect game style. It seems that the more passes there were, the greater were the chances of victory [17, 20]. As in other leagues, such as the English Premier League [31] or the German Bundesliga [32], in the Spanish LaLiga Santander [33] there is a direct correlation between ball possession and success.

Team LENGTH and GKDEF have decreased as the seasons have passed, while HEIGHT has kept stable. Comparing the first seasons studied (from 2011–12 to 2014–15) to the last ones (from 2015–16 to 2018–19) a regression in the last seasons can be observed. This means that player positions have moved back. It is an average value due to the fact that the present study has not investigated the variability of defence positioning depending on where the ball is on the pitch, or having possession of the ball or not [22]. This correlates with a decrease in SHOT, CROSS and CORNER, probably due to the greater defensive efficacy of the teams. A systematic recent review of the variables that lead to success in football [34] found that the most influential variables are efficiency (shots on goal, ball possession and pass accuracy), supporting the idea that in modern football, quality is more important than quantity in the assessment of a team's performance [17]. This result is consistent with the fact that the average number of goals per game has not changed much from seasons 2011–12 to 2018–19, with an average of 2.8 (± 0.1) goals per match (range between 2.6 to 2.9). Exceptionally, the last season in this study (2018–19) obtained the lowest value of goals per game (2.6), 983 goals in a total of 380 matches (https://www.worldfootball.net/stats/esp-primera-division/1/). Perhaps, substantial modifications to the game (e.g., incorporation of the Video Assistant Referee) might justify a different approach of the teams, and as a consequence, a decrease in the number of goals per match [35]. Something similar occurs with FOUL, as the effect of greater professionalisation in the refereeing establishment and even the implementation of the Video Assistant Referee probably could have influenced its downward trend.

Regarding the KM variable, the results showed a decrease throughout all the seasons, similar to the results of a previous study on the English Premier League [13] and of a recent study of match running performance in the Spanish LaLiga Santander [16]. The decrease in the number of arrivals in the rival team's area or shots could be explained by more efficient defensive organization of the teams. This lack of arrivals in the area caused less displacement of the box-to-box teams, which explains why the total distance covered has been decreasing over the years. Several authors [21] realized that the performance rates of a technical-tactical nature have a greater influence than those of a conditional nature when it comes to determining the difference between the most successful teams in the championship. This is in line with the results presented by Castellano [18], who found that the total distance covered is not related to the success achieved by the teams at the end of the championship.

Despite the fact that the present paper studied eight seasons in a domestic league (Spanish LaLiga Santander), care must be taken when extrapolating these league results to other countries or competitions with different characteristics [29]. A principal limitation of the study was that the mean rate of performance of all the teams in each season had to be taken into consideration, whereas performance variability, such as looking for the equalizer, could not be considered [36, 37]. It is widely known that team performance will vary during the same season, due to, in most cases, strategic coaching decisions [38, 39] and the contextual variables [40, 41]. Additionally, the choice of other variables (e.g., high intensity physical activity, the type of pass or cross, defensive variables, the efficacy of the variables) could have provided relevant information and another possible interpretation of this study's results. Future research should, therefore, take into account more contextual variables such as the result (e.g., won, drawn or lost), final ranking (e.g., points accumulated), or period in the season (e.g., whether teams are playing at the beginning, middle or end of the season) among others. Additional information regarding individual teams (not used in this methodology) would thus generate the right kind of information when planning training sessions and strategies for upcoming matches.

CONCLUSIONS

The analysis of the eight seasons (from 2011–12 to 2018–19) has revealed that throughout the years Spanish LaLiga Santander teams' style of play has changed somewhat. The main conclusion was that the Spanish LaLiga Santander teams displayed a style of play based on possession that remained throughout the years, represented by a similar number of PASS and WIDTH. However, some changes were found in recent seasons: some variables such as SHOT, CORNER, CROSS, KM, LENGTH and GKDEF decreased as the seasons passed, suggesting that the defence game prevails over the attack game. Furthermore, quality prevails over quantity because teams have fewer final behaviours and set pieces (SHOT, CROSS and CORNER) but continue scoring a similar number of goals per match (2.8). The present study provides ideas to establish a method to describe how Spanish LaLiga Santander football teams' performances have been changing in the last years. The results of this study may help football professionals to decide where to focus the process of scouting or training, considering the evolution of players' and teams' performances in the next years. They would allow the coaching staff to have a clear idea about the aspects that describe performance in the Spanish LaLiga Santander and on which aspects to focus the training process. For the clubs, it would mean the possibility of knowing the profile of players who could better adjust to the present and future demands of the competition.

Acknowledgments

The authors gratefully acknowledge the support of the Spanish government subproject *Mixed method approach on performance analysis (in training and competition) in elite and academy sport* [PGC2018-098742-B-C33] (2019–2021) [Ministerio de Ciencia, Innovación y Universidades (MCIU), la Agencia Estatal de Investigación (AEI) y el Fondo Europeo de Desarrollo Regional (FEDER)], that is part of the coordinated project *New approach of research in physical activity and sport from mixed methods perspective* (NARPAS_MM) [SPGC201800X098742CV0].

Conflict of interest declaration

No potential conflict of interest was reported by the authors.

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