Proceeding

The winning shares in the major football leagues

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ABSTRACT

The top football Leagues of the major national teams of Italy, England and Germany have a different attack feature for the homogeneity of each championship. The aim of the study is to analyse the common elements of the goals during a match, during the mid-season and the total number of the scored goals. The method is based on the correlation of data analysis obtained by InSTAT database, using as sample the first round of championship. The results show a great disparity and significant differences in the three different categories of data. This result is useful to understand the differences resulting by the specific features of each individual, independently of the first position in the League. Consequently, it would be useful a different training planning in the same sport season. **Keywords**: Soccer; Match analysis; Video analysis; Ball possession; Shot.

INTRODUCTION

In recent years, even in Italy, as has already been the case for years abroad, terms such as match analysis, video analysis and performance analysis (Polidoro et al., 2013, Raiola et al., 2013abc) are increasingly part of the football vocabulary alongside terms such as offside, counterattack, zone defence, training method, assessment (Altavilla, Raiola, 2019, Altavilla et al., 2018, 2017) or performance and doping (Mazzeo, Raiola, 2018, Mazzeo et al, 2018ab). Match analysis and video analysis are the performance analysis tool to aim for providing qualitative and quantitative information on the performance of individual players and the team as a whole. Therefore, exercise and sport sciences degree course (D'elia 2019, D'elia et al 2018, Sanseviero et al., 2019) and scientific identity of this scientific cultural field is highlighting in this moment (Ceciliani, 2019, D'Isanto, 2019, Raiola et al., 2018, Ceciliani et al., 2005). Initially, manual analysis techniques were used based on the annotation of everything that happened during the game, and then the use of increasingly complex computerized system was used. The use of match analysis by the athletic trainer has certainly widened the definition of the football performance model. We have moved from the simplistic conception of alternating aerobic-anaerobic sport and methods training (Ceruso et al., 2019, D'elia et al., 2019, D'Isanto et al., 2019, Forte et al., 2019, Giordano et al., 2019, Severino et al., 2019, Raiola, D'Isanto, 2017, Rago et al., 2017) to that provided by the proZone system scholars "Calcium is characterized by intermittent activity with high-intensity anaerobic efforts superimposed on low aerobic activity". The objective has therefore shifted from improving aerobic and lactic capacity towards an increase in the ability to perform high intensity sprints for the duration of the race (Ruosi, 2007). Performance analysis (performance analysis) is the study of physical and athletic data and represents the most advanced frontier of the science applied to football, through sophisticated instruments called GPS, the shape of the players is monitored daily and allows to individualize and optimize the work in work out. In recent years it has seen a massive entry of pervasive calculation between sports-related technologies, in fact, the detection of physical parameters during training through GPS technology is a portable and economic procedure to monitor workloads (MacLeod et al. 2009). GPS can also provide immediate answers to coaches immediately after the end of the training session (Izzo, 2018ab). It is important to consider that the physical profile of football players is very variable, having implications for the interpretation of the high intensity race (Gregson et al. 2010), therefore the use of GPS is optimal. The high intensity reached at a certain distance has traditionally been identified as a key indicator of physical performance during games (Mohr et al. 2003) and was related to the state of training (Krustrup et al, 2003). Acceleration and deceleration are the skills that play a key role in professional football, as they represent very demanding energy activities. The enormous demand for acceleration and deceleration phases in football as in basketball, many of which with trajectory changes greater than 30 °, leads us to think of the usefulness of using unidirectional running. It is important to know the correlation between the possession of the ball and shots taken by a team to know its real offensive potential. Aim is to verify the research hypothesis in order to establish a correlation between the possession of the ball and the shots taken by the teams being researched.

METHODS

The method is based on the correlation of data analysis obtained by InSTAT database, using as sample the first round of championship of three of the major football team of Europe. . The research hypothesis consists in identifying if there is a positive correlation between the possession of the ball and the shots taken by the teams being researched. The teams examined are from the top league football series in Italy, Germany and England. Specifically they are: Juventus, Borussia Dortmund and Liverpool. They were chosen because they reached the first place at the end of the first round in their respective championships.

The statistical analysis is based on the Pearson correlation and the Anova calculation. The data sample is represented by the matches played by the three teams examined. The data for the statistical analysis, and therefore for the calculation of the averages, of the percentages and of the standard deviations, were extrapolated from the videos of the matches examined and compared with the data provided by the InStat site. The researched data are: The team's ball possession time, the total throws made and finally the goals scored.
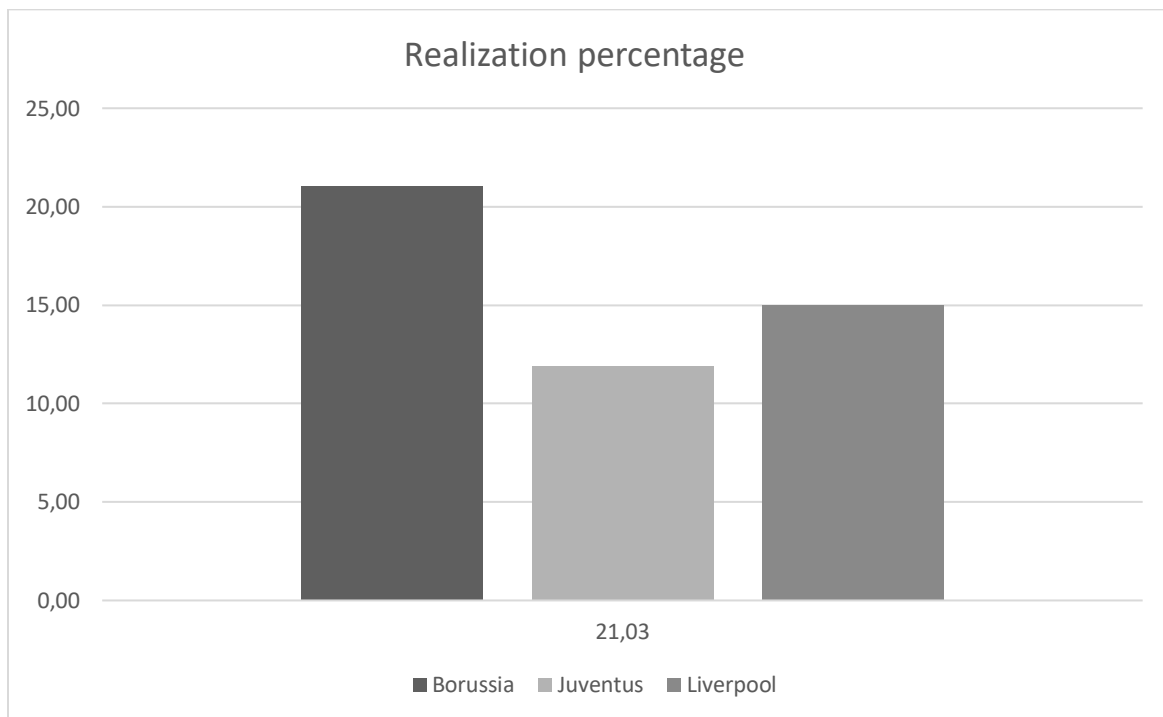
RESULTS

Figure 1. Realization percentage

Table 1. Anova, significance level 0.05. Significance of the three teams in the possession of the ball

		Sum of squares	gl	Quadratic mean	F	Sign.
VAR00009	Between groups	1341.965	14	95.855	2.890	.158
	Within the groups	132.667	4	33.167		
	Tot	1474.632	18			
VAR00010	Between groups	808.939	14	57.781	.456	.877
	Within the groups	507.167	4	126.792		
	Tot	1316.105	18			
VAR00011	Between groups	1364.632	14	97.474	1.274	.446
	Within the groups	306.000	4	76.500		
	Tot	1670.632	18			

Table 2. Anova, significance level 0.05. Significance of the three teams in total shots

		Sum of squares	gl	Quadratic mean	F	Sign.
VAR00012	Between groups	3.782	5	.756	.253	.931
	Within the groups	38.850	13	2.988		
	Tot	42.632	18			
VAR00013	Between groups	3.700	5	.740	2.237	.112
	Within the groups	4.300	13	.331		
	Tot	8.000	18			
VAR00014	Between groups	10.134	5	2.027	1.501	.256
	Within the groups	17.550	13	1.350		
	Tot	27.684	18			

Table 3. Pearson's correlation between ball possession and total shots of Borussia Dortmund

Correlation		VAR00001	VAR00002
VAR00001	Pearson correlation	1	.446
	Sign. (with two tails)		.056
	N	19	19
VAR00002	Pearson correlation	.446	1
	Sign. (with two tails)	.056	
	N	19	19

Table 4. Pearson's correlation between ball possession and total shots of Juventus

Correlation		VAR00003	VAR00004
VAR00003	Pearson correlation	1	0.555
	Sign. (with two tails)		.014
	N	19	19
VAR00004	Pearson correlation	.555*	1
	Sign. (with two tails)	.014	
	N	19	19

Table 5. Pearson's correlation between ball possession and total shots of Liverpool

Correlation		VAR00008	VAR00009
VAR00008	Pearson correlation	1	.356
	Sign. (with two tails)		.135
	N	19	19
VAR00009	Pearson correlation	.356	1
	Sign. (with two tails)	.135	
	N	19	19

DISCUSSION

There is a fair correlation between the goals scored and total shots made in Borussia Dortmund with the Pearson correlation index of 0.446. Good correlation between the goals scored and the total shots made in

Juventus, with a Pearson correlation index of 0.555. Fair correlation between goals scored and total throws in Liverpool, with Pearson correlation index of 0.356.

CONCLUSION

The research hypothesis was confirmed by the analysed data. The three groups are homogeneous. It is important to know if there is a correlation between the possession of the ball and the shots taken so that you can set your game in the best possible way. For example, if you face a team that has a lot of ball possession and lots of shots on goal, you will need to make the most of the opportunities that will be given by them to reach the goal. In anticipation of further future studies, these data may be correlated with the number of successful passes, with goals scored at head, right or left and with the number of crosses from right and left. In such a way as to have a good complete view of the dynamics of the construction and the finalization of the game of the teams examined.

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