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Attacking and defensive styles of play in soccer: analysis of Spanish and English elite teams.

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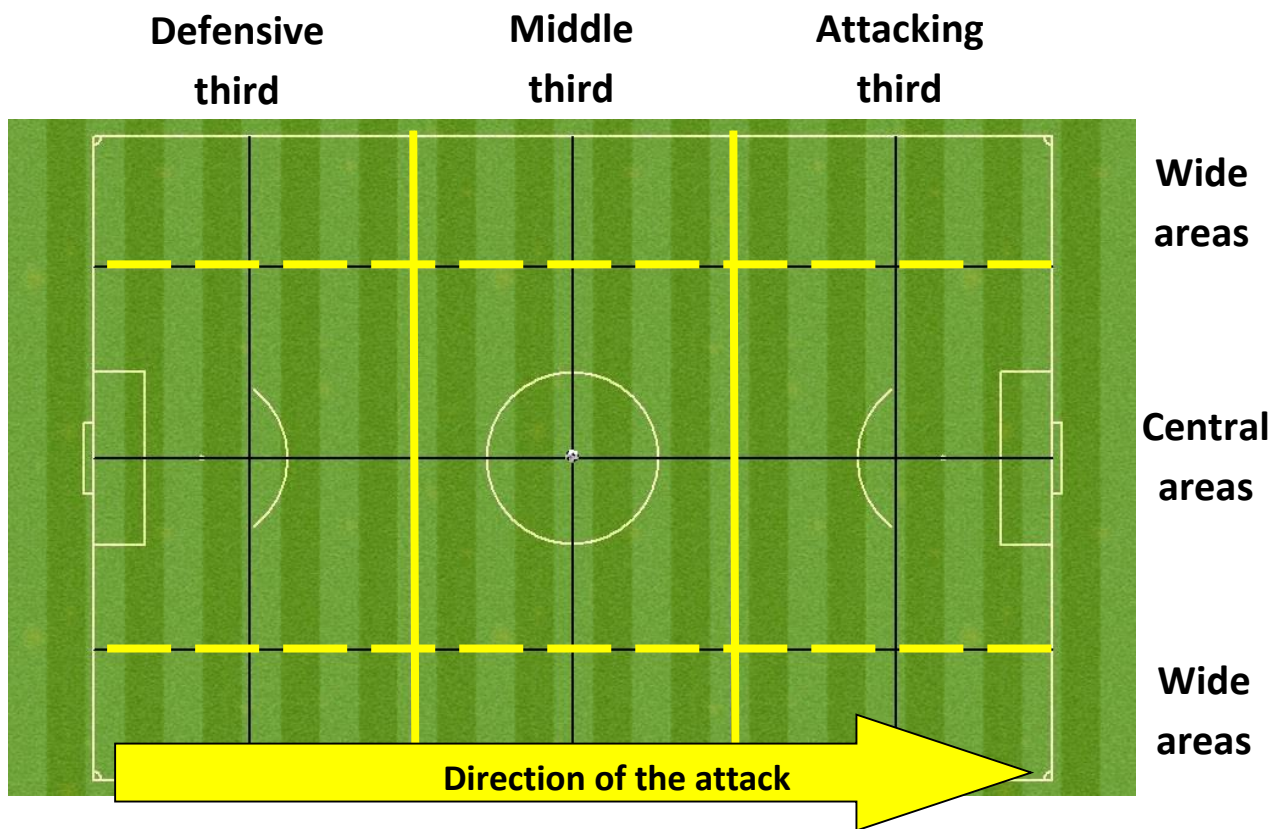


Figure 1. Pitch divisions in three thirds parallel to the goal lines and parallel to the touchlines

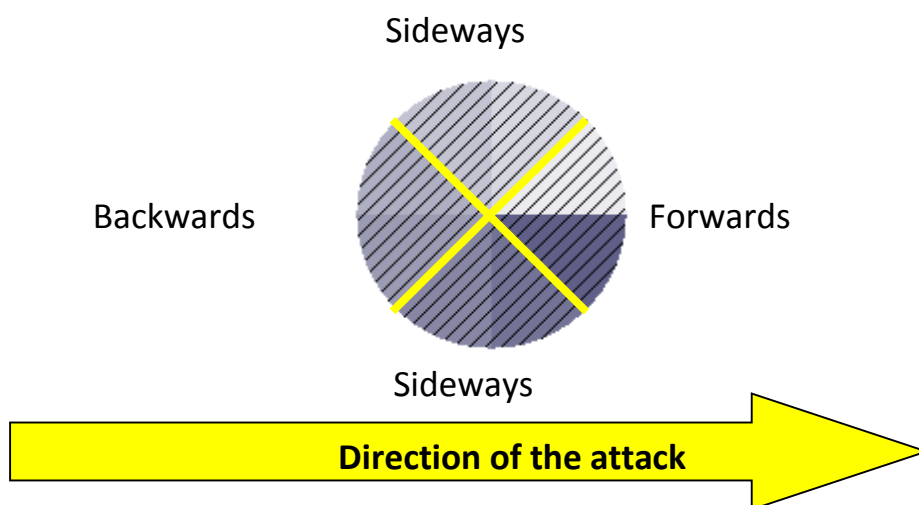


Figure 2. Direction of passes

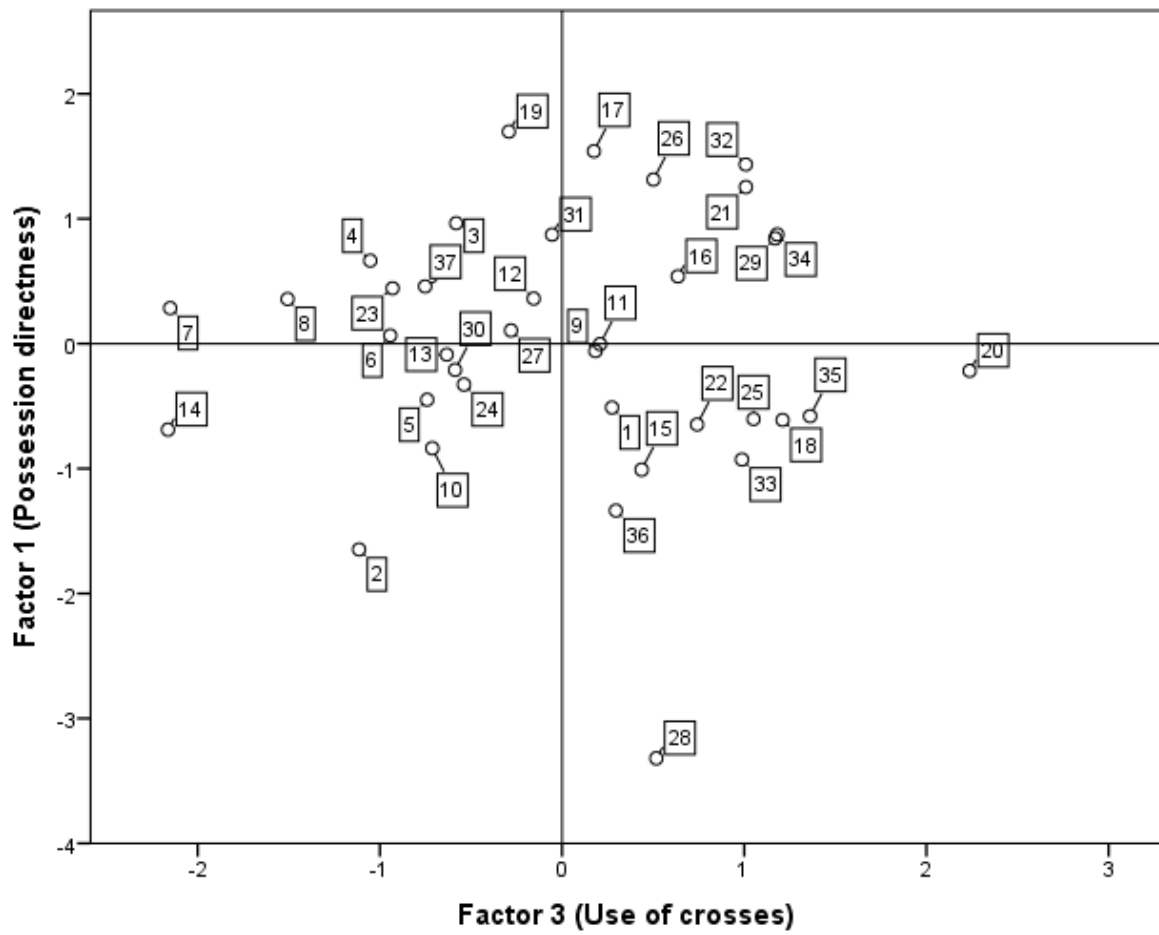


Figure 3(A). Attacking styles of play of soccer teams according factor 1 and factor 3

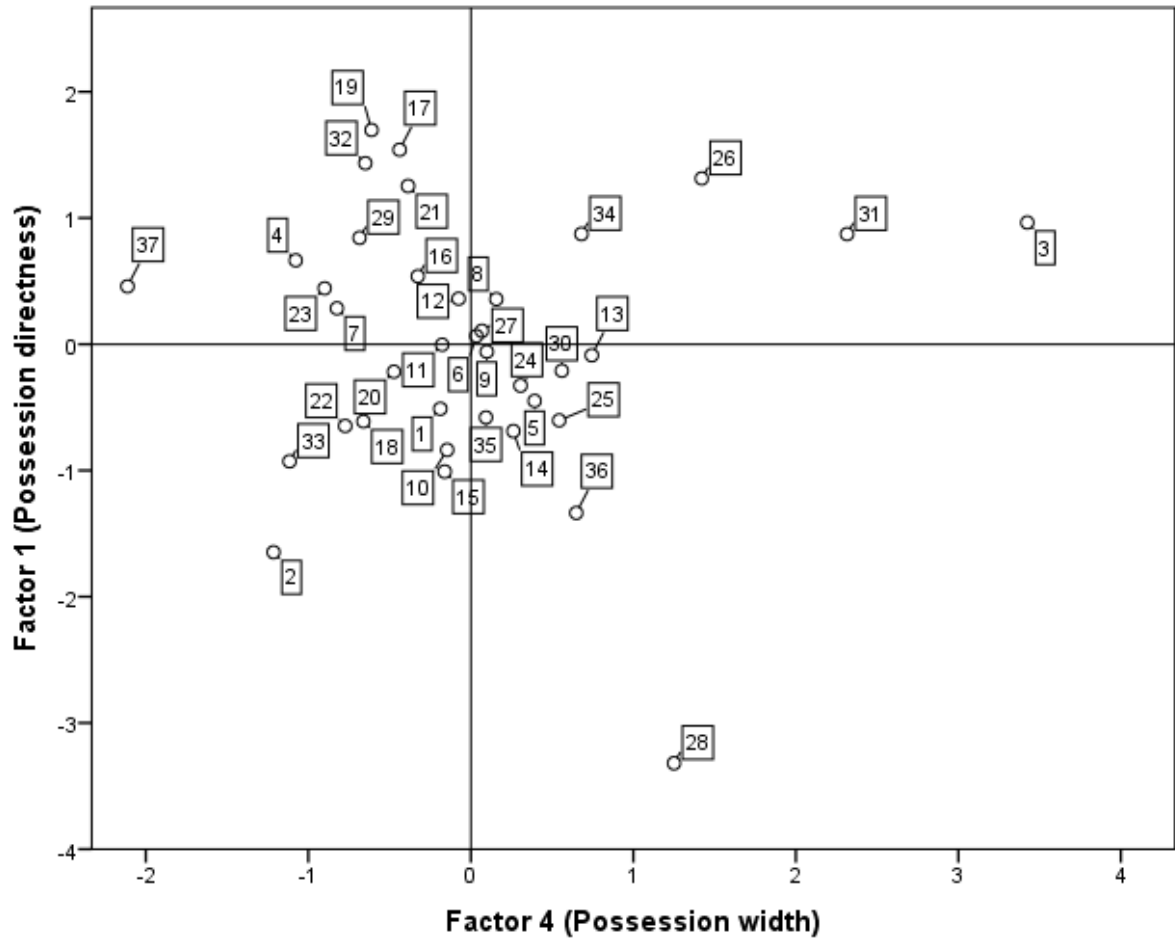


Figure 3(B). Attacking styles of play of soccer teams according factor 1 and factor 4

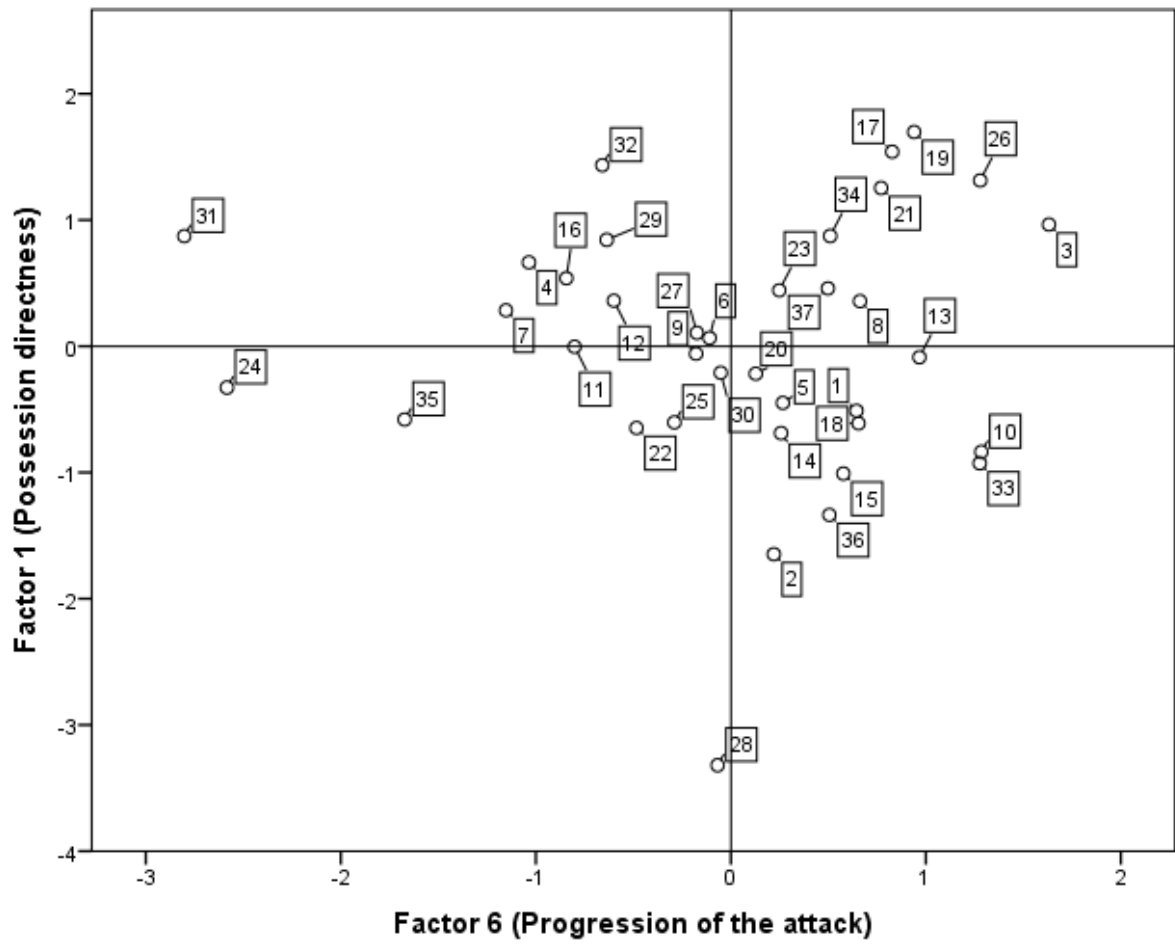


Figure 3(C). Attacking styles of play of soccer teams according factor 1 and factor 6

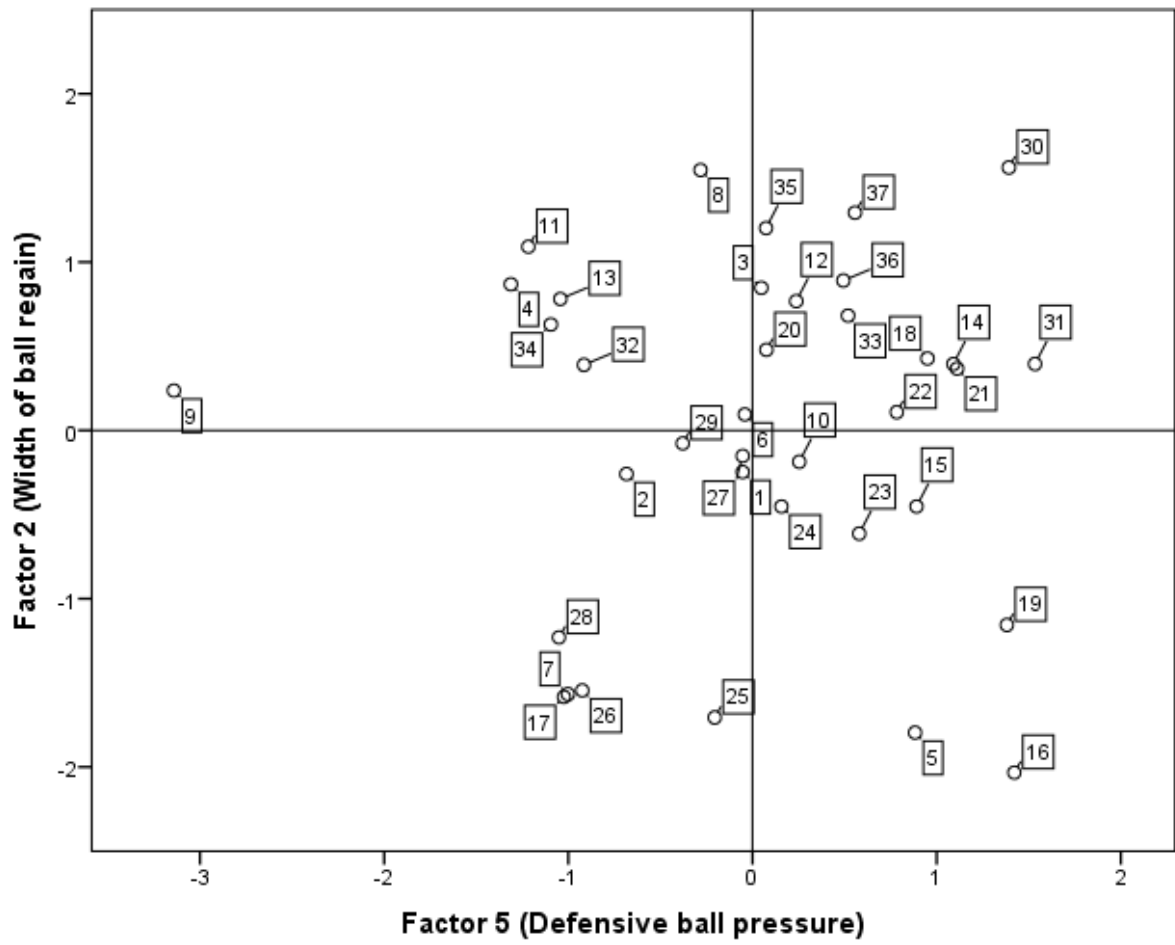


Figure 3(D). Defensive styles of play of soccer teams according factor 2 and factor 5

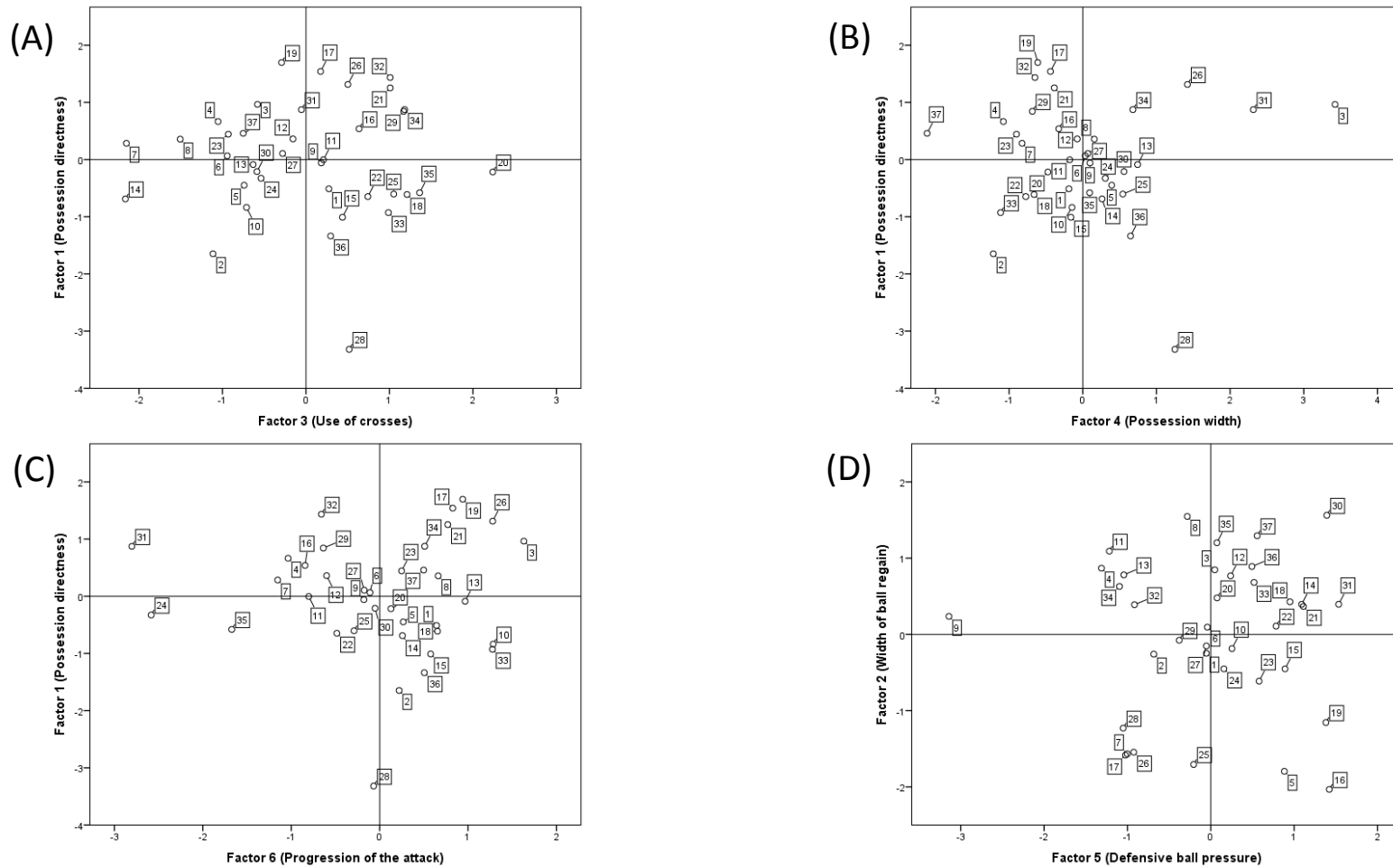


Figure 3. Styles of play of soccer teams according factors. Attacking styles of play: (A) factor 1 and factor 3, (B) factor 1 and factor 4, (C) factor 1 and factor 6. Defensive styles of play: (D) factor 2 and factor 5.

Note of Figure 3: Numbers assigned to the teams for figure interpretation were: Atletico de Madrid (1), Barcelona (2), Betis (3), Bilbao (4), Celta (5), Deportivo (6), Espanyol (7), Mallorca (8), Osasuna (9), Real Madrid (10), Real Sociedad (11), Sevilla (12), Valencia (13), Zaragoza (14), Arsenal (15), Aston Villa (16), Bolton (17), Chelsea (18), Everton (19), Liverpool (20), Manchester City (21), Manchester United (22), Portsmouth (23), Tottenham (24), West Ham (25), Wigan (26) for season 2006-2007; and Atletico de Madrid (27), Barcelona (28), Bilbao (29), Getafe (30), Levante (31), Osasuna (32), Real Madrid (33), Real Sociedad (34), Valencia (35), Villarreal (36), Zaragoza (37) for season 2010-2011.

Table I. Description and measurement of attacking and defensive performance indicators

Attacking performance indicator	Description	Measurement	
1. Possession of the ball	Percentage of time that the team has possession of the ball in the match.	Possession of the ball for the team was collected separately for each half of the match as it is provided by the Amisco system. The average from the possession of the two halves for each team was calculated.	
2. Possession of the ball in the defensive third of the pitch	Percentage of time that the team has the possession of the ball in the defensive third of the pitch.	These performance indicators were calculated by taking the overall time that the team had the possession of the ball and the time that the team had the possession of the ball in the area corresponding to the performance indicator. Hence the percentage (normalised data) was calculated from these data provided by the Amisco system.	
3. Possession of the ball in the middle third of the pitch	Percentage of time that the team has the possession of the ball in the middle third of the pitch from all the time that the team has the possession of the ball.		
4. Possession of the ball in the attacking third of the pitch	Percentage of time that the team have the possession of the ball in the attacking third of the pitch (next to the opposite goal) from all the time that the team have the possession of the ball.		
5. Possession of the ball in the central areas of the pitch	Percentage of time that the team has the possession of the ball in the central areas of the pitch from all the time that the team has the possession of the ball.		
6. Possession of the ball in the wide areas of the pitch	Percentage of time that the team has the possession of the ball in the wide areas of the pitch from all the time that the team has the possession of the ball.		
7. Direction of passes	A rate that summarise the direction of the passes made by the team. As this number increases, the team tends to use more passes in the direction of the opposite goal.		A score of one was given to the backwards passes, a score of two was given to the sideways passes, and a score of three was given to the forwards passes. The mean of the scores of all the passes made by the team were calculated.
8. Forwards passes	Percentage of passes from the overall number of passes made by the team that are made forwards (towards the opposite goal).		The Amisco system provided the direction of the movements of the ball by looking at the point where the pass started and the point where the pass was received. Consequently, depending of the trajectory of the ball the pass was categorised following the diagram showed in figure 2. Data was normalised by calculating the percentage of these passes according to the total number of passes made by the team.
9. Sideways passes	Percentage of passes from the overall number of passes made by the team that are made sideways.		
10. Backwards passes	Percentage of passes from the overall number of passes made by the team that are made backwards (towards the own goal).		
11. Passes from defensive third to middle third	Percentage of passes from the overall number of passes made by the team that are made from the defensive third (next to the own goal) to the middle third of the pitch.	These performance indicators were measured by calculating the percentage of these kinds of passes from the overall amount of passes made by the team in the match.	
12. Passes from defensive third to attacking third	Percentage of passes from the overall number of passes made by the team that are made directly from the defensive third (next to the own goal) to the attacking third of the pitch (next to the opposite goal).		
13. Crosses	Percentage of attacking sequences that finish with a cross in the opposing half from all the attacking sequences made by the team.	Data provided by the Amisco System was collected and normalised by calculating the percentage from all of these events made by a team during the whole match.	
14. Shots	Percentage of attacking sequences that finish with a shot from all the attacking sequences made by the team.		

(continued)

Table I. (Continued)

Defensive performance indicator	Description	Measurement
15. Regains in the defensive third	Percentage of the number of times that the team regains the ball in the defensive third (next to own goal) from all the regains made by the team.	These performance indicators were calculated by taking the total number of times that the team regained the possession of the ball and the number of times that the team regained the possession of the ball in the area corresponding to the performance indicator. Hence the percentage (normalised data) was calculated from these data provided by the Amisco system.
16. Regains in the middle third	Percentage of the number of times that the team regains the ball in the middle third from all the regains made by the team.	
17. Regains in the attacking third	Percentage of the number of times that the team regains the ball in the attacking third (next to opposite goal) from all the regains made by the team.	
18. Regains in the central areas of the pitch	Percentage of the number of times that the team regains the ball in the middle areas of the pitch from all the regains made by the team.	
19. Regains in the wide areas of the pitch	Percentage of the number of times that the team regains the ball in the wide areas of the pitch from all the regains made by the team.	

Table II. Eigenvalues for components and total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.043	37.069	37.069	7.043	37.069	37.069	5.281	27.795	27.795
2	3.243	17.069	54.138	3.243	17.069	54.138	2.796	14.718	42.513
3	2.402	12.640	66.778	2.402	12.640	66.778	2.777	14.617	57.130
4	1.749	9.208	75.986	1.749	9.208	75.986	2.631	13.849	70.979
5	1.159	6.098	82.083	1.159	6.098	82.083	1.879	9.890	80.869
6	1.036	5.453	87.536	1.036	5.453	87.536	1.267	6.667	87.536
7	.687	3.617	91.153						
8	.512	2.695	93.849						
9	.410	2.156	96.004						
10	.312	1.644	97.648						
11	.242	1.276	98.924						
12	.125	.658	99.582						
13	.068	.355	99.938						
14	.011	.060	99.998						
15	.000	.002	100.000						
16	.000	.000	100.000						
17	.000	.000	100.000						
18	.000	.000	100.000						
19	.000	.000	100.000						

Table III. Rotated Component Matrix for the performance indicators

	Component					
	1	2	3	4	5	6
number of sideways passes %	-.947	.084	.027	.022	-.164	.126
number of forward passes %	.945	-.092	-.065	.036	.179	.102
average direction of passes	.882	-.115	-.094	.102	.174	.309
possession %	-.858	.185	.207	-.154	-.192	.136
passes from defensive to attacking third %	.696	-.396	-.034	.174	-.128	.257
number of shots % attacking sequences	-.640	.170	.461	-.250	.238	.221
number regains wide areas %	-.253	.937	-.052	.093	-.103	-.016
number regains central areas %	.325	-.905	.041	-.120	.126	.018
number regains middle third %	.131	.602	-.116	-.599	-.319	.158
possession % middle third	.072	.156	-.930	.123	.152	-.004
possession % defensive third	-.075	-.168	.869	-.352	-.175	-.078
number of crosses % attacking sequences finish opposing half	-.179	.133	.806	.095	-.003	-.190
possession % attacking third	.049	.121	-.319	.787	.155	.255
possession % central areas	-.588	-.030	.107	-.701	.155	-.109
possession % wide areas	.588	.030	-.108	.701	-.154	.109
number regains attacking third %	-.132	.160	.148	.201	-.759	-.123
passes from defensive to middle third %	.365	-.110	-.208	.322	.672	.027
number regains defensive third %	-.056	-.603	.036	.436	.625	-.083
number of backwards passes %	-.070	-.015	.168	-.191	-.091	-.913

Note: Factor loadings in bold showed a strong positive or negative correlation

Table IV. Teams' attacking and defensive styles of play

Teams (season 2006-2007)	Attacking styles of play								Defensive styles of play			
	D	P	C	NC	WP	NP	FP	SP	PW	PC	LP	HP
1. Atletico de Madrid		•	•			•	•			•		•
2. Barcelona		••		••		••	•			•		•
3. Betis	•			•	••••		••		•		•	
4. Bilbao	•			••		••		••	•			••
5. Celta		•		•	•		•			••	•	
6. Deportivo	•			•	•			•	•			•
7. Espanyol	•			•••		•		••		••		••
8. Mallorca	•			••	•		•		••			•
9. Osasuna		•			•			•	•			••••
10. Real Madrid		•		•		•	••			•	•	
11. Real Sociedad		•	•			•		•	••			••
12. Sevilla	•			•		•		•	•		•	
13. Valencia		•		•	•		•		•			••
14. Zaragoza		•		•••	•		•		•		••	
15. Arsenal		••	•			•	•			•	•	
16. Aston Villa	•		•			•		•		•••	••	
17. Bolton	••		•			•	•			••		••
18. Chelsea		•	••			•	•		•		•	
19. Everton	••			•		•	•			••	••	
20. Liverpool		•	•••			•	•		•		•	
21. Manchester City	••		••			•	•		•		••	
22. Manchester United		•	•			•		•	•		•	
23. Portsmouth	•			•		•	•			•	•	
24. Tottenham		•		•	•			•••		•	•	
25. West Ham		•	••		•			•		••		•
26. Wigan	••		•		••		••			••		•

(continued)

Table IV. (Continued)

Teams (season 2010-2011)	Attacking styles of play								Defensive styles of play			
	D	P	C	NC	WP	NP	FP	SP	PW	PC	LP	HP
27. Atletico de Madrid	•			•	•			•		•		•
28. Barcelona		••••	•		••			•		••		••
29. Bilbao	•		••			•		•		•		•
30. Getafe		•		•	•			•	••		••	
31. Levante	•			•	•••			•••	•		••	
32. Osasuna	••		••			•		•	•			•
33. Real Madrid		•	•			••	••		•		•	
34. Real Sociedad	•		••		•		•		•			••
35. Valencia		•	••		•			••	••		•	
36. Villarreal		••	•		•		•		•		•	
37. Zaragoza	•			•		•••	•		••		•	

Note: Abbreviations for attacking and defensive styles of play: Direct (D), Possession (P), Crossing (C), No Crossing (NC), Wide Possession (WP), Narrow Possession (NP), Fast Progression (FP), Slow Progression (SP), Pressure on Wide Areas (PW), Pressure on Central Areas (PC), Low Pressure (LP), and High Pressure (HP).

The number of dots indicates the degree of utilisation of the style of play by the team, more dots indicates a higher utilisation.

• Score between 0 and ± 1 . •• Score between ± 1 and ± 2 . ••• Score between ± 2 and ± 3 . •••• Score between ± 3 and ± 4 .