

**COMPARATIVE CHARACTERISTICS OF TTA OF THE WORLD'S  
LEADING FOOTBALL CLUBS**

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**Purpose:** to determine model indicators of performing technical and tactical actions by high-level teams.

**Material and methods:** registration of technical and tactical actions was carried out on the example of games of participating teams in the 2020/2021 UEFA Champions League. A total of 242138 technical and tactical actions in 25 games of the teams «Manchester City» (Manchester, England), «Chelsea» (London, England), «Olympique» (Marseille, France), «Olympiacos» (Piraeus, Greece), «Porto» (Porto, Portugal), «Krasnodar» (Krasnodar, Russia), «Rennes» (Rennes, France), «Sevilla» (Sevilla, Spain), «Atletico» (Madrid, Spain), «Borussia» (Dortmund, Germany), «Borussia» (Monchengladbach, Germany), «Real» (Madrid, Spain), «Paris Saint-Germain» (Paris, France) were registered and analyzed. The following research methods were used to solve the tasks: analysis of scientific and methodological literature, registration of technical and tactical actions, methods of mathematical statistics.

**Results:** the article presents data characterizing features of the defensive and attacking TTA by high level teams based on the results of the 2020/2021 UEFA Champions League games. Model indicators of making the ball passes (different in purpose, distance, direction, trajectory, method of performance), shots on target (with

a foot and head from different areas of the football field), dribbling of an opponent, aerial duels, tackles, interceptions, knocking out the ball, blocking strikes into the goal have been developed.

**Conclusions:** the data of the study show differences in the structure of competitive activity of different level teams in the games of the 2020/2021 UEFA Champions League. The winning team outnumbered their rivals in almost every indicator.

**Keywords:** football players, model indicators, TTA, passes, shots, interceptions, tackles attempted.

## **Introduction**

It is known that the management of football players should be based on the use of models [6, 12, 13, 22, 27, 29]. In this case, there are several definitions of the term «model», but all authors define it as a certain sample, standard, standard or benchmark [5, 6, 22, 24].

The study of literature sources allowed us to establish that for the evaluation of certain models by experts using model characteristics [1, 8] and model indicators [5, 6].

Model characteristics are considered as [1, 8, 22]:

- ideal characteristics of the athlete's condition, in which he can show record results;
- indicators (tests), increasing the results of which leads to an increase in competitive achievements;
- some indicators that are part of the model.

In turn, the model indicators of football players are divided into model indicators of sports opportunities, sportsmanship and competitive activity [6].

Thus, model indicators of sports opportunities include indicators that reflect the morphological and functional features of the body of athletes. Currently, a study of morphofunctional features of the player, namely:

- age of players of different roles [14];

- overall body dimensions of football players of different levels and roles [2, 3, 9, 16, 23, 30];

- functional training of football players of different qualifications [5, 15, 25, 32, 36, 34].

Model indicators of sportsmanship are based on the level of different aspects of football players training:

- physical [6, 24, 31];

- technical [7];

- tactical [17, 19].

Model indicators of competitive activity of football players are developed following the results of control of their competitive activity which is carried out in two directions:

- registration of motor activity [20, 26, 28, 33];

- registration of technical and tactical indicators [8, 10, 17, 18, 24].

The analysis of the available literature allowed to study and generalize the information concerning development of models of competitive activity of three levels:

- generalized models [4, 37];

- group models [17, 35];

- individual models [11, 21].

**Purpose** is to determine model indicators of performing technical and tactical actions by high-level teams.

### **Material and Methods of research**

The following research methods were used to solve the tasks: analysis of scientific and methodological literature, registration of technical and tactical actions, methods of mathematical statistics. Registration of technical and tactical actions was carried out on the example of games of participating teams in the 2020/2021 UEFA Champions League. A total of 25 games of the teams «Manchester City» (Manchester, England), «Chelsea» (London, England), «Olympique» (Marseille, France), «Olympiacos» (Piraeus, Greece), «Porto» (Porto, Portugal), «Krasnodar»

(Krasnodar, Russia), «Rennes» (Rennes, France), «Sevilla» (Sevilla, Spain), «Atletico» (Madrid, Spain), «Borussia» (Dortmund, Germany), «Borussia» (Monchengladbach, Germany), «Real» (Madrid, Spain), «Paris Saint-Germain» (Paris, France) were registered and analyzed. The teams participating in this tournament registered the following TTA: aerial duels, tackles attempted, interceptions, clearances, blocks, shots, dribbles, short and long passes, crosses, through ball and key passes.

### **Results of the research**

Table 1 shows the average quantitative indicators of the team TTA of the team «Manchester City» (finalist of the UEFA Champions League season 2020/2021) and its rival teams.

*Table 1*

#### **Quantitative indicators of the TTA of the team «Manchester City» (Manchester, England) in the games of the UEFA Champions League season 2020/2021 (n=13)**

Technical and tactical actions	Team «MC»		Rival teams		t	p
	X <sub>1</sub>	m <sub>1</sub>	X <sub>2</sub>	m <sub>2</sub>		
• <i>Touches</i>	859,1	21,4	599,2	19,4	<b>9,00</b>	<b>&lt;0,001</b>
• <i>Passes</i>	684,5	27,9	442,9	25,1	<b>6,44</b>	<b>&lt;0,001</b>
• <i>Dribbles</i>	22,6	2,0	15,0	1,4	<b>3,11</b>	<b>&lt;0,01</b>
• <i>Shots</i>	13,0	1,4	6,5	1,0	<b>3,78</b>	<b>&lt;0,001</b>
• <i>Aerial duels</i>	18,8	2,6	18,8	2,6	0,00	>0,05
• <i>Tackles attempted</i>	22,6	1,5	29,8	1,9	<b>2,97</b>	<b>&lt;0,01</b>
• <i>Interceptions</i>	9,0	1,1	10,5	1,2	0,92	>0,05
• <i>Clearances</i>	10,2	1,4	18,6	2,6	<b>2,84</b>	<b>&lt;0,01</b>
Blocked shots	2,0	0,7	3,3	0,6	1,41	>0,05
Blocked crosses	8,0	0,7	8,2	0,7	0,20	>0,05

The table shows that the players of the team «Manchester City» in the games of this tournament significantly outperformed their opponents in the quantity of touches to the ball (t=9,00; p<0,001), passes (t=6,44; p<0,001), dribbles of the opponent (t=3,11; p<0,01) and shots on goal (t=3,78; p<0,001). In turn, Manchester City's opponents outperformed them in the quantity of tackles attempted (t=2,97; p<0,01) and clearances (t=2,84; p<0,01).

Table 2 shows the average quantitative indicators of the TTA of the team «Chelsea» (winner of the UEFA Champions League season 2020/2021) and its rival teams.

Table 2

**Quantities of TTA of the team «Chelsea» (London, England) in the UEFA Champions League games of the 2020/2021 season (n=13)**

Technical and tactical actions	Team «Chelsea»		Rival teams		t	p
	X <sub>1</sub>	m <sub>1</sub>	X <sub>2</sub>	m <sub>2</sub>		
• <i>Touches</i>	720,5	31,4	671,6	32,6	1,08	>0,05
• <i>Passes</i>	535,5	32,2	488,3	33,4	1,02	>0,05
• <i>Dribbles</i>	18,0	1,9	18,5	2,4	0,16	>0,05
• <i>Shots</i>	11,2	1,1	9,3	1,0	1,28	>0,05
• <i>Aerial duels</i>	31,2	2,2	31,2	2,2	0,00	>0,05
• <i>Tackles attempted</i>	24,2	2,3	24,8	2,2	0,19	>0,05
• <i>Interceptions</i>	11,2	1,1	10,5	1,0	0,47	>0,05
• <i>Clearances</i>	18,2	2,0	13,1	2,0	1,80	>0,05
Blocked shots	3,2	0,6	2,6	0,5	0,77	>0,05
Blocked crosses	10,5	1,0	8,2	0,7	1,88	>0,05

The results of the table show that no significant differences in the quantity of TTA teams of the team «Chelsea» and rival teams were found.

As a result of a comparative analysis of the competitive activity of the Champions League finalists 2020/2021 in the games of this tournament, it was found (Table 3) that the attacking TTA was dominated by players of the team «Manchester City», and the defensive TTA – players of the team «Chelsea».

Table 3

**Quantitative indicators of TTA teams «Manchester City» (Manchester, England) and «Chelsea» (London, England) in the UEFA Champions League games of the 2020/2021 season (n=13)**

Technical and tactical actions	Team «MC»		Team «Chelsea»		t	p
	X <sub>1</sub>	m <sub>1</sub>	X <sub>2</sub>	m <sub>2</sub>		
• <i>Touches</i>	859,1	21,4	720,5	31,4	<b>3,65</b>	<b>&lt;0,01</b>
• <i>Passes</i>	684,5	27,9	535,5	32,2	<b>3,50</b>	<b>&lt;0,01</b>
• <i>Dribbles</i>	22,6	2,0	18,0	1,9	1,67	>0,05
• <i>Shots</i>	13,0	1,4	11,2	1,1	1,01	>0,05
• <i>Aerial duels</i>	18,8	2,6	31,2	2,2	<b>3,64</b>	<b>&lt;0,01</b>
• <i>Tackles attempted</i>	22,6	1,5	24,2	2,3	0,58	>0,05
• <i>Interceptions</i>	9,0	1,1	11,2	1,1	1,41	>0,05
• <i>Clearances</i>	10,2	1,4	18,2	2,0	<b>3,28</b>	<b>&lt;0,01</b>
Blocked shots	2,0	0,7	3,2	0,6	1,30	>0,05
Blocked crosses	8,0	0,7	10,5	1,0	2,05	>0,05

Table 4 shows the average quantity of shots on goal in the games of the team «Manchester City». These tables show that the players of the team «Manchester City» on average per game performed much more shots against their opponents.

Table 4

**Quantities of shots on goal of the team «Manchester City» (Manchester, England) in the UEFA Champions League games of the 2020/2021 season (n=13)**

• Shots	Team «MC»		Rival teams		t	p
	X <sub>1</sub>	m <sub>1</sub>	X <sub>2</sub>	m <sub>2</sub>		
All	13,0	1,4	6,5	1,0	<b>3,78</b>	<b>&lt;0,001</b>
Goals	1,9	0,3	0,4	0,1	<b>4,74</b>	<b>&lt;0,001</b>
Shots on target	5,7	0,6	1,8	0,3	<b>5,81</b>	<b>&lt;0,001</b>
Shots off target	4,0	0,5	2,5	0,4	<b>2,34</b>	<b>&lt;0,05</b>
Woodworks	0,4	0,2	0,1	0,1	1,34	>0,05
Blocked	3,3	0,6	2,1	0,7	1,30	>0,05
6-yard box	1,3	0,2	0,5	0,3	<b>2,22</b>	<b>&lt;0,05</b>
Penalty Area	7,0	0,7	3,4	0,6	<b>3,90</b>	<b>&lt;0,001</b>
Outside of box	4,7	0,7	2,6	0,4	<b>2,60</b>	<b>&lt;0,05</b>
Right foot	5,9	0,9	3,5	0,7	<b>2,10</b>	<b>&lt;0,05</b>
Left foot	5,4	0,6	2,2	0,4	<b>4,44</b>	<b>&lt;0,001</b>
Head	1,6	0,3	0,8	0,2	<b>2,22</b>	<b>&lt;0,05</b>

In turn, the analysis of the quantitative indicators of shots on goal in the games of the team «Chelsea» shows (Table 5) that the players of this team were insignificantly superior to their rivals in most indicators.

Table 5

**Quantities of shots on goal of the team «Chelsea» (London, England) in the UEFA Champions League games of the 2020/2021 season (n=13)**

• Shots	Team «Chelsea»		Rival teams		t	p
	X <sub>1</sub>	m <sub>1</sub>	X <sub>2</sub>	m <sub>2</sub>		
All	11,2	1,1	9,3	1,0	1,28	>0,05
Goals	1,8	0,4	0,3	0,1	<b>3,64</b>	<b>&lt;0,01</b>
Shots on target	4,5	0,5	2,8	0,5	<b>2,40</b>	<b>&lt;0,05</b>
Shots off target	4,1	0,7	3,2	0,4	1,12	>0,05
Woodworks	0,3	0,2	0,2	0,1	0,45	>0,05
Blocked	2,6	0,5	3,2	0,6	0,77	>0,05
6-yard box	0,7	0,3	0,5	0,2	0,55	>0,05
Penalty Area	7,7	0,9	5,5	0,5	<b>2,14</b>	<b>&lt;0,05</b>
Outside of box	2,8	0,5	3,3	0,6	0,64	>0,05
Right foot	5,9	0,7	4,6	0,4	1,61	>0,05
Left foot	3,4	0,6	2,8	0,6	0,71	>0,05
Head	1,8	0,3	1,8	0,4	0,00	>0,05

At the same time, as a result of a comparative analysis of the quantitative indicators of shots on goal (table 6), it was found that the players of the team «Manchester City» were almost in all respects superior to the players of the team

«Chelsea». However, we found significant differences only in the quantity of shots on goal from outside the penalty area ( $t=2,21$ ;  $p<0,05$ ) and the number of shots with the left foot ( $t=2,36$ ;  $p<0,05$ ).

Table 6

**Quantities of shots on goal of the team «Manchester City» (Manchester, England) and «Chelsea» (London, England) in the UEFA Champions League games of the 2020/2021 season (n=13)**

• Shots	Team «MC»		Team «Chelsea»		t	p
	X <sub>1</sub>	m <sub>1</sub>	X <sub>2</sub>	m <sub>2</sub>		
All	13,0	1,4	11,2	1,1	1,01	>0,05
Goals	1,9	0,3	1,8	0,4	0,20	>0,05
Shots on target	5,7	0,6	4,5	0,5	1,54	>0,05
Shots off target	4,0	0,5	4,1	0,7	0,12	>0,05
Woodworks	0,4	0,2	0,3	0,2	0,35	>0,05
Blocked	3,3	0,6	2,6	0,5	0,90	>0,05
6-yard box	1,3	0,2	0,7	0,3	1,66	>0,05
Penalty Area	7,0	0,7	7,7	0,9	0,61	>0,05
Outside of box	4,7	0,7	2,8	0,5	<b>2,21</b>	<b>&lt;0,05</b>
Right foot	5,9	0,9	5,9	0,7	0,00	>0,05
Left foot	5,4	0,6	3,4	0,6	<b>2,36</b>	<b>&lt;0,05</b>
Head	1,6	0,3	1,8	0,3	0,47	>0,05

An analysis of the quantitative indicators of the ball passes of the UEFA Champions League teams shows that the «Manchester City» team significantly outperformed its opponents in these indicators (Table 7).

Table 7

**Quantities of passes of the team «Manchester City» (Manchester, England) in the UEFA Champions League games of the 2020/2021 season (n=13)**

Passes	Team «MC»		Rival teams		t	p
	X <sub>1</sub>	m <sub>1</sub>	X <sub>2</sub>	m <sub>2</sub>		
All	684,5	27,9	442,9	25,1	<b>6,44</b>	<b>&lt;0,001</b>
Crosses	15,3	2,1	9,1	1,5	<b>2,40</b>	<b>&lt;0,05</b>
Long	39,3	1,7	47,4	3,7	1,99	>0,05
Short	682,0	28,6	427,6	25,3	<b>6,66</b>	<b>&lt;0,001</b>
Chipped	47,7	2,6	47,7	3,0	0,00	>0,05
Ground	673,6	28,6	427,3	23,1	<b>6,70</b>	<b>&lt;0,001</b>
Forward	409,4	14,0	287,8	13,1	<b>6,34</b>	<b>&lt;0,001</b>
Backward	305,5	15,6	185,1	11,0	<b>6,31</b>	<b>&lt;0,001</b>
Right	358,6	14,8	239,9	12,6	<b>6,11</b>	<b>&lt;0,001</b>
Left	359,2	14,0	232,5	11,3	<b>7,04</b>	<b>&lt;0,001</b>
Defensive third	105,5	9,6	184,6	14,8	<b>4,48</b>	<b>&lt;0,001</b>
Mid third	413,6	21,3	207,8	12,4	<b>8,35</b>	<b>&lt;0,001</b>
Final third	202,2	12,3	82,6	7,9	<b>8,18</b>	<b>&lt;0,001</b>

Thus, the players of this team on average per game performed significantly more crosses of the opposing team ( $t=2,40$ ;  $p<0,05$ ), short passes ( $t=6,66$ ;  $p<0,001$ ), ground passes ( $t=6,70$ ;  $p<0,001$ ), forward ( $t=6,34$ ;  $p<0,001$ ), backward ( $t=6,31$ ;  $p<0,001$ ), right ( $t=6,11$ ;  $p<0,001$ ), left ( $t=7,04$ ;  $p<0,001$ ), in the middle zone ( $t=8,35$ ;  $p<0,001$ ) and the attack zone ( $t=8,18$ ;  $p<0,001$ ).

In turn, in the games of the team «Chelsea» the quantity of passes made by the players of this team and their opponents did not have significant differences (Table 8).

*Table 8*

**Quantities of passes of the team «Chelsea» (London, England) in the UEFA Champions League games of the 2020/2021 season (n=13)**

Passes	Team «Chelsea»		Rival teams		t	p
	X <sub>1</sub>	m <sub>1</sub>	X <sub>2</sub>	m <sub>2</sub>		
All	535,5	32,2	488,3	33,4	1,02	>0,05
Crosses	14,2	1,5	16,9	2,0	1,08	>0,05
Long	50,5	2,4	58,8	3,4	1,99	>0,05
Short	523,1	34,0	476,2	34,7	0,97	>0,05
Chipped	48,2	1,8	56,2	3,8	1,90	>0,05
Ground	525,4	33,6	478,8	32,9	0,99	>0,05
Forward	350,9	19,0	330,2	18,5	0,78	>0,05
Backward	220,8	14,8	202,9	16,1	0,82	>0,05
Right	290,4	16,3	269,9	18,3	0,84	>0,05
Left	280,8	17,4	262,1	16,4	0,78	>0,05
Defensive third	125,9	10,6	122,7	12,0	0,20	>0,05
Mid third	288,8	18,3	266,4	23,4	0,75	>0,05
Final third	158,8	14,7	145,9	7,6	0,78	>0,05

Table 9 shows the average ball passes of of the team «Manchester City» and «Chelsea» in 13 UEFA Champions League games.

Analysis of the data shows that «Manchester City» players made significantly more short passes ( $t=3,58$ ;  $p<0,01$ ), passes ground ( $t=3,36$ ;  $p<0,01$ ), forward ( $t=2,48$ ;  $p<0,05$ ), backward ( $t=3,94$ ;  $p<0,001$ ), right ( $t=3,10$ ;  $p<0,01$ ), left ( $t=3,51$ ;  $p<0,01$ ), in the middle zone ( $t=4,44$ ;  $p<0,001$ ) and the attack zone ( $t=2,26$ ;  $p<0,05$ ). The «Chelsea» players outperformed their counterparts only in terms of the quantity of long passes ( $t=3,81$ ;  $p<0,001$ ).



Table 9

**Quantities of passes of the team «Manchester City» (Manchester, England) and «Chelsea» (London, England) in the UEFA Champions League games of the 2020/2021 season (n=13)**

Passes	Team «MC»		Team «Chelsea»		t	p
	X <sub>1</sub>	m <sub>1</sub>	X <sub>2</sub>	m <sub>2</sub>		
All	684,5	27,9	535,5	32,2	<b>3,50</b>	<b>&lt;0,01</b>
Crosses	15,3	2,1	14,2	1,5	0,43	>0,05
Long	39,3	1,7	50,5	2,4	<b>3,81</b>	<b>&lt;0,001</b>
Short	682,0	28,6	523,1	34,0	<b>3,58</b>	<b>&lt;0,01</b>
Chipped	47,7	2,6	48,2	1,8	0,16	>0,05
Ground	673,6	28,6	525,4	33,6	<b>3,36</b>	<b>&lt;0,01</b>
Forward	409,4	14,0	350,9	19,0	<b>2,48</b>	<b>&lt;0,05</b>
Backward	305,5	15,6	220,8	14,8	<b>3,94</b>	<b>&lt;0,001</b>
Right	358,6	14,8	290,4	16,3	<b>3,10</b>	<b>&lt;0,01</b>
Left	359,2	14,0	280,8	17,4	<b>3,51</b>	<b>&lt;0,01</b>
Defensive third	105,5	9,6	125,9	10,6	1,43	>0,05
Mid third	413,6	21,3	288,8	18,3	<b>4,44</b>	<b>&lt;0,001</b>
Final third	202,2	12,3	158,8	14,7	<b>2,26</b>	<b>&lt;0,05</b>

### **Conclusions / Discussion**

The data of the study show the differences in the quantitative indicators of defensive and offensive technical and tactical actions in the structure of competitive activities of the best football clubs in Europe in the UEFA Champions League games of the 2020/2021 season. The team of «Manchester City» (finalist of the UEFA Champions League) in the games of this tournament surpassed their opponents in terms of attacking TTA. In turn, the team «Chelsea» (winner of the UEFA Champions League) had the best performance of defensive TTA.

The results of the study confirmed the information on the quantitative indicators of team TTA teams of different levels (Shamardin V., 2002, 2012, Kostyukevich V., 2006). Data on the peculiarities of attacking and defensive TTAs by teams of different levels (Perevoznyk V., Mulyk V., Payevsky V., 2020, Perevoznyk V.I., Zhurid S.M., Marchenko V., Pertsukhov A.A., 2018, 2020). Models of competitive activity of the best teams-participants of the UEFA Champions League of the 2020/2021 season have been developed.

The provisions and conclusions of this study can be taken into account in the formation of club and national teams of different levels and in the planning of technical and tactical training of players of different qualifications.

**Prospects for further research.** Further research can be devoted to establishing the peculiarities of the implementation of the TTA teams of the Premier League of the Ukrainian championship, the first and second leagues of the Ukrainian championship.

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