

## COMPARATIVE STUDY REGARDING THE EVOLUTION OF ROMANIAN AND FOREIGN U-BT CLUJ-NAPOCA BASKETBALL PLAYERS, IN THE 2016-2017 ROMANIAN CUP COMPETITION

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**ABSTRACT. Premises:** This paper makes a significant contribution to developing a database regarding players' behaviour during competition. Also, by processing, analyzing and valorizing the available information and resources, the aim is to know the players better and to give full support to the coach so that he can make objective decisions. **Subject of research:** The research was conducted on six players, 3 foreigners and 3 Romanians, members of U-BT Cluj-Napoca basketball team, who competed in 2016/2017 in the Romanian Cup competition. **Method:** The relevant published literature was a major reference point for documenting this paper. The gathering of data was done by observing and registering basketball specific parameters. The processing of data was done using the statistical-mathematical method. **Hypothesis:** The study and acknowledgement of the players' behaviour during matches offers premises and foundations for the coach's activity and decisions. Comparing players' results and achievements leads to a better understanding and ranking of the players' contribution and role within the team's assembly mechanism, necessary in the decision making process. **Results:** In what follows, a comparison will be drawn analyzing the main parameters defining foreign players as compared to Romanian players, taking in consideration: shots, offensive rebounds, defensive rebounds, steals, blocks, decisive pass, stolen balls, scored points. The purpose of this study is to sketch a comparative model of the foreign players' behaviour during games compared to the Romanians' game behaviour. **Conclusions:** Observing, registering, analyzing and processing game related data gives the coach objective information regarding players and overall team evolution, enabling him to make better decisions. The conclusions of the study show that, in most of the cases, the foreign players perform better. Thus, they add value to the team.

**Key words:** *basketball, players, men's basketball, Cluj-Napoca, Romanian Cup*

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**REZUMAT. Studiu comparativ privind evoluția jucătorilor români și străini de la echipa de baschet UBT Cluj-Napoca, în competiția Cupa României 2016-2017. Premize.** Prin elaborarea unei asemenea lucrări se contribuie la realizarea unei baze de date. Totodată, prin prelucrare, analiză și valorificare se ajunge la o mai bună cunoaștere a jucătorilor, la sprijinirea antrenorului pentru luarea unor decizii pe baze obiective. **Subiecți.** Am făcut obiectul cercetării pe șase jucători, trei străini și trei români, componenți ai echipei de baschet UBT Cluj-Napoca, care au participat în anul competițional 2016/2017, în competiția Cupa României. **Metode.** Pentru informarea legată de tema studiată s-a utilizat studiul literaturii de specialitate. Culegerea datelor s-a realizat prin observarea și înregistrarea principalilor parametrii specifici jocului de baschet. Prelucrarea datelor s-a făcut utilizând metoda statistico-matematică. **Ipoteze.** Studiarea și cunoașterea diferitelor aspecte privind comportamentul în joc al componenților echipei oferă premise pentru ca antrenorul să-și orienteze activitatea pe baze obiective. Prin compararea performanțelor realizate de jucători în competiție se poate realiza o mai bună cunoaștere și ierarhizare a contribuției, a rolului pe care îl au aceștia în angrenajul echipei, care să conducă la luarea unor decizii optime. **Rezultate.** Sunt prezentați și analizați principalii parametri realizați de către jucătorii străini comparativ cu jucătorii români – aruncările la coș, recuperările ofensive, recuperările defensive, interceptările, capacele - blocările mingilor aruncate la coș, pasele decisive, mingile pierdute, punctele marcate. În final, s-a realizat un model comparativ privind comportamentul în competiție al jucătorilor români și cei străini. **Concluzii.** Observarea, înregistrarea, prelucrarea și analiza datelor privind o seamă de parametrii ai jocului oferă antrenorului date obiective pe baza cărora acesta poate să cunoască mai bine jucătorii, evoluția de ansamblu a echipei și, astfel, să ia decizii mai corecte. Din analiza comparativă a datelor rezultă că, în majoritatea situațiilor, jucătorii străini au un comportament în joc mai bun. În acest fel contribuie la ridicarea valorii echipei.

**Cuvinte cheie:** *baschet, jucători, masculin, Cluj-Napoca, Cupa României*

## Introduction

Basketball is a sport played between two teams whose players are characterized by remarkable somatic and genetic features. (Colibaba-Evuleț and Bota, 1997) Their physical abilities are trained to be able to withstand intense physical effort, alternating submaximal graded exercises with short maximal effort periods (Baroga, 1994) in order to achieve the highest results in direct confrontation with an adversary player, both in defense as well as attack. (Teodorescu, 1975) Due to the game's specific requirements, a very important element is the basketball shooting, which requires spatio-temporal representation,

an above-average kinesthetic sense, a high sense of precision and high efficiency. All these skills are acquired with special training over a course of time (Ionescu and Dîrjan, 1997).

Taking into consideration all these factors, in order for the basketball players to reach the level and performance of professional senior players, they need to undergo a consistent training of about ten to twelve years. That is why, the selection and initial physical preparation starts at very young ages, around seven – nine years old, while the peak performance age will be around 25 – 27 years old. The work to reach high performance levels requires a systematic long term and complex training, the intensity of which increases at regular intervals. Designed to prepare the body for intense effort and resilience in competitions, the training is built on a set of pedagogic, biologic and psychological principles and has an interdisciplinary approach. (Dragnea and Mate, 2002)

The work of a basketball coach, like any other coaching activity, is conditioned by the systematic action of objective and subjective factors that determine the training process and the participation in competitions. Some of these are: the methodology and technology used, conditions and human resources, activity coordination and management etc. (Florescu, 1985) In order to reach the high performance standards of today's competitions and maintain top technical and methodological parameters, the coach is assisted by specialists from different areas of expertise: the theory and methodology of sportive training, medicine, psychology, sociology, informatics (Epuran, 2005). Their research and guidance contribute to the maintaining of the players' health, the better choosing of efficient trainings and the right proportioning of physical effort during training (Nicu, 1993).

There are many studies and research papers focusing on the different aspects of the basketball game. Depending on the demands, the research has been conducted towards basketball learning and consolidation methods (Pop and Roman, 2003), or towards the vocational training of higher education sport specialists (Predescu and Negulescu, 1998), or the theory and methodology of physical training (Colibaba-Evuleț and Bota, 1998), progressive training (Berceanu and Moanță, 2007), the optimum exploitation of the research results in order to maximize the coach's activity (Vicenzi & a, 2007). Besides these general approaches, other issues have also been studied such as: basketball seen from a mathematical and physical point of view (Hajossy and Macura, 2011; Brancazio, 1981), the study of the biomechanics of technical procedures (Feflea, 2011), the evolution of technical elements (Schmidt and Clausmayer, 1995; Smirnov, 1973), physical exercise (Feflea and Roșca, 2013), and many others.

The research papers are based on significant statistic information, acquired as a result of observing and recording the players' behaviour during matches. (Bachner, 1998) The purpose is to offer basketball specialists relevant

data regarding different aspects of the basketball game and to build data bases for objective analyses of the teams as wholes and of the individual players. (Maroti, 1996) The researcher can come in possession of such data either by accessing the competition's organizers' website, the international federation's website, the national federation's website, or he/she can personally record and collect the information.

### **Methods and subjects:**

The paper follows the evolution of six players of U-BT Cluj-Napoca, three foreigners and three Romanians, which in 2016/2017 competed in the Romanian Cup competition. Representative players were selected, grouped according to the position occupied in the team.

Scientific documentation was the foundation regarding information about level of knowledge and direction of interest concerning the studied theme, establishing behavioral in-game indicators for team members, gathering, processing and making full use of data.

The paper is based on data gathered by observing and recording the main parameters of the basketball game, during the three matches played in Romanian Cup Final Eight: shots, offensive rebounds, defensive recoveries, interceptions, blocks – blocked basketball throws, assists, turnovers, points scored - all related to the playing time of each team member that has been the subject of this research, downloaded from the competition's website (1).

The following abbreviations have been used in the registration process: Min / M - minutes played per game; 3PA –three points shot attempt; 3PM - scored three points shot; 2PAM – two points shot attempt; 2PM - scored two points shot; 1Pa – attempted free throws ; 1PM – scored free throws; REC / M O - offensive rebounds (attack) ; REC / MD - defense rebounds (defense), I/M - number of intercepted balls ; C / M - number of blocked balls (caps ), PD/M - the number of assists, MP/M - the number of turnovers, MC/M – the number of balls won, PCT / M - Total points scored per game, EF - The players' efficiency (coefficient of efficiency).

Data processing and calculating averages, percentages, efficiency indices were achieved through the statistical-mathematical method.

### **Purpose:**

- The objective understanding of the behavior in the game of the best components of the team;

- Comparing the results and efficiency of these players;
- Providing the coach with objective data that would help in designing and implementing the training process, optimizing the management of the team during the competition, choosing more rationally when and what players to use.

### Hypotheses:

The study and acknowledgement of different aspects of the players' game behavior provide the prerequisites for the coach to have an objective foundation on which to build his training activity. By comparing the actual performance of players in the competition better knowledge and ranking is achieved, their contribution is better highlighted, resulting in the coach's ability to take better decisions.

### The results and their interpretation:

Comparative study of games played and active game time shows us that we find that all players have evolved in all matches. The actual playing time of the six players involved in the study is between 58,25 and 107,59 minutes.

**Table 1.** Number of games and minutes played

	Foreign players			Romanian players		
	R.A.	B.U.	D.K.	M.V.	T.R.	K.N.
Matches	3	3	3	3	3	3
Minutes	92.49	69.23	81.91	107.59	58.25	60.79

Given the purpose of the basketball game, which is to score as many points as possible in the opponent team's basket, one of the important indicators of the behaviour during game is the basketball shooting efficiency index.

Analyzing the basketball shooting, the 3points shots represented 42.87% in the case of the foreign players and 33.27% in the case of Romanian players. Of the total 2 points shots, the foreign players achieved 71.06%, while the Romanian ones only 40.55%. So the foreign players clearly stand out in what concerns basketball throws. If we analyze this proportion individually, the discrepancy is significant: 58 shots (the highest achievement) versus only 14 shots (the lowest achievement). Of the total of 201 throws, 112 were made by foreign players and 89 by Romanians players. The free throw situation is changing, where the share of attempts made by foreigners players is 38.30% and much higher for Romanians players 61.70%.

Foreign players have a percentage of 56.96 % in what concerns the efficiency of throws in action while the Romanians have a percentage of 36.91 %. The successful free throws percentage of foreigners is 77.66 % and 89.64 % of the native players.

**Table 2.** Efficiency Index of shooting

Shots	Foreign players									Romanian players								
	R.A.			B.U.			D.K.			M.V.			T.R.			K.N.		
	AT	MA	%	AT	MA	%	AT	MA	%	AT	MA	%	AT	MA	%	AT	MA	%
3 points	20	9	45	0	0	0	8	3	37.5	14	8	57.14	6	1	16.66	13	2	15.38
2 points	5	4	80	14	9	64.28	26	18	69.23	19	7	36.84	11	4	36.36	7	4	57.14
1 point	4	4	100	8	6	75	6	4	66.66	21	20	95.23	6	6	100	2	0	0

The classification compiled based on points scored shows that the first places belongs to a Romanian player, the next three places in the hierarchy are occupied by foreign players and the last two places are returned to the Romanian players.

**Table 3.** Player ranking based on contributions to points

Place	Player	Statute	Scored shots			Total	Game average
			3 pct.	2 pct.	1 pct.		
I	M.V.	Romanian	24	14	20	58	19.33
II	D.K.	Foreigner	9	36	4	49	16.33
II	R.A.	Foreigner	27	8	4	39	13
IV	B.U.	Foreigner	0	18	6	24	8
V	T.R.	Romanian	3	8	6	17	5.66
VI	K.N.	Romanian	6	8	0	14	4.66

In relation to game strategy, possession of the ball is an important element in the economy of the basketball game. It is obtained after a field goal scored by the opponent as a result of misconduct, a wrong action of a defense player or as a result of a player’s individual moves (a rebound, intercepting a pass, a block, a steal etc.)

Out of all these, we have focused on offensive rebounds, given the important role they play in ball possession. The difference between two teams in what concerns possession of the ball is in tight connection with the number of offensive rebounds made by the members of each team. (Dirjan, 1974)

**Table 4.** Offensive and defensive rebounds

Parameter	Foreign players			Romanian players		
	R.A.	B.U.	D.K.	M.V.	T.R.	K.N.
Offensive rebounds	4	5	3	9	5	2
Defensive rebounds	6	11	5	25	6	4

From the comparison of the averages achieved on the match, it results that the foreign players have an average of 4 offensive rebounds, compared to 5,33 obtained by the Romanian players. And in case of defensive rebounds foreigners have weaker achievements 7,33 compared to Romanians 11.66. As shown in table no. 4, comparing the other ways to obtain ball possession, the Romanians players outperform the foreign players.

**Table 5.** Balls won through interceptions and blocks

Parameter	Foreign players			Romanian players		
	R.A.	B.U.	D.K.	M.V.	T.R.	K.N.
Interceptions	0	1	3	3	1	7
Blocks	0	4	1	2	1	0

Based on averages obtained from the studied parameters, we conducted a comparison of the Romanian and foreign players' behavior, that can be a model of their game.

**Table 6.** Comparative presentation of the evolution model

Parameter		Foreign players		Romanian players	
MIN/M		27.07		25.18	
3 P	M	4		3,66	
	A	9.33		11	
	%	42.87		33.27	
2P	M	10.66		5	
	A	15		12.33	
	%	71.06		40.55	
1P	M	4.66		8.66	
	A	6		9.66	
	%	77.66		89.64	
REC	O	4		5,33	
	D	7.33		11.66	
	T	11.33		16.99	
I/M		1.33		3.66	
C/M		1.66		1	
MC/M		13		21.66	
PD/M		7.66		3	
MP/M		6.33		6.66	
PCT/M					
PCT/M/JUC		37.33	12.44	30.66	10.22
EF/M					
EF/M/JUC		41.33	13.77	33	11

## Conclusions

Observing, registering, and processing game related data gives the coach objective information regarding players, empowering him to build a database concerning both his own players and opponent team's players. Processing and analyzing the data leads to a better understanding and awareness of the players, resulting in better and more objective decisions.

The conclusions of the study show that, in most of the cases, the foreign players perform better, taking into consideration the following parameters: game time, attempts percentage, basketball shooting efficiency from game action and free throws, offensive rebounds, defensive rebounds, steals, blocks, efficiency in the game.



## Specifications:

The data regarding the game parameters analyzed was downloaded from the official website of the competition from Romanian Basketball Federation website. We thank the players, coaches and managers of U – BT Cluj-Napoca for collaboration and support.

## Conflicts of interest:

Nothing of note.

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