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FACTORIAL ANALYSIS OF THE SKILLS PREFERRED BY BASKETBALL PLAYERS: A STUDY IN YOUNG PLAYERS

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ABSTRACT: The aim of this work is to classify basketball skills according to the preference of the young players who play this sport. The most interesting results show the existence of 5 factors which could explain the variation percentage of 66,99 %. The drew factors arranged from better to worse as a function of how well they explain the issue, have been named as " Shot and scores 1 or 2 points "; " Receive + Defence + Bounce "; " Recover + 3 points scores "; " Provoke personal fault " and " Rebound ".

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Introduction

The knowledge about sports played by young men has been increasing in a remarkable way in the last years; partly, due to the organization of scientific congresses to deal with the topic and the publication of several articles which this topic.

Recently, several works have been carried out to know which elements of the game are preferred by the young sports men (Piñar, Cárdenas, Conde, Alarcón and Torre, 2007; Palao, Ortega and Olmedilla, 2004). The studies mentioned above may indicate the need to investigate which are the skills preferred by young basketball players.

Method

A survey was carried out in 221 basketball players aging from 7 to 16 year olds, belonging to 8 clubs from 3 cities of Galicia (northwest of Spain). The questionnaire developed by Ortega, Jiménez, Palao and Saínez (2008), has different sections: one of them consists on asking the young men players about the satisfaction they get when they are successful in several acts of the game. Later, a factorial analysis of principal components was carried out using

the statistical package SPSS v.15.0, to verify the structure of the answers given by the participants in the study.

Results

Factorial analysis showed the structure indicated in table 1.

The structure of the auto values points out the existence of 5 components that allow explaining, as a whole, the 66,99 % of the variance. In fact, the first component explains by itself the 34,73 % of the same one. As a more detail way and after proceeding to the rotation of the factors, it was possible to obtain the following counterfoil of the rotated components (table 2).

Once the variables of every factor were established, and always considering the percentage of variance explained by each one, it is the moment to determine the influence of every variable on the factor in order to choose the denomination of this one. The interpretation and the name of the factors will depend on the meaning of a particular combination of variables which are highly correlated to every factor (Díaz de Rada, 2002). The denomination of these factors was carried out according to the criteria of evaluation indicated by Comrey (1985) for

	Initial Auto values			Add from the saturations to the square of			Extraction of the saturations to the square of the total rotation		
	Total	% of the variance	% of the variance accumulated	Total	% of the variance	% of the variance accumulated	Total	% of the variance	% of the variance accumulated
1	6,253	34,738	34,738	6,253	34,738	34,738	2,883	16,019	16,019
2	1,816	10,088	44,826	1,816	10,088	44,826	2,721	15,114	31,133
3	1,613	8,96	53,787	1,613	8,96	53,787	2,595	14,416	45,549
4	1,312	7,289	61,076	1,312	7,289	61,076	1,976	10,978	56,527
5	1,065	5,916	66,992	1,065	5,916	66,992	1,884	10,464	66,992

Figure 1. Power-Strength curve (n = 8). Mean ± SD.

Components (skills)	Factors				
	1	2	3	4	5
Score two points shot	0,756		0,225		
Two points shot	0,676	0,224			0,326
Free throw	0,659	0,259		0,205	
Score free throw	0,659		0,358	0,211	
Three points shot	0,591		0,401		0,233
To receive a pass	0,219	0,805			
Make a good defence on shooting		0,768	0,33		
Make a good defence on dribbling		0,758	0,238	0,234	
Dribbling	0,338	0,672			
Steal	0,217		0,752	0,244	
Cut a pass		0,242	0,729		0,204
Score three points shot	0,402		0,643	0,228	
Dribble an opponent	0,343	0,382	0,563		
Provoke an offensive foul	0,211			0,81	
Provoke a defensive foul				0,733	0,213
Assistance		0,263	0,365	0,574	
Defensive Rebound				0,261	0,865
Offense Rebound	0,261		0,224		0,846

Table 2. Values of the rotated components

the orthogonal factorial weight and the percentage of variance explained.

Following the defined indications, the extracted factors are 5: the first one named as " Shot and 1 or 2 point scores " which explains 34,73 % of the variance; the second one, " Receive + Defence + Bounce ", makes for 10,08 % of the variance; the third one, " Recover + 3 points scores " explains 8,96 % of the variance; the fourth " Provoke personal fault ", makes for 7,28 % of the variance and the fifth one, " Rebound ", explains 5,91 % of the variance.

Discussion

The results obtained in the study makes it possible to see the satisfaction that the young basketball players from shooting and scoring,

especially, in the most usual situations of the game and in those occasions when the whole attention is focused just on one player: the free throw. These data agrees with Palao, Ortega and Olmedilla's results (2004) which show, for a group of players of the same categories, that throwing to basket is their favourite skill, either in competition or when they are training, for all ages.

In this respect, it is possible to state that scoring does not mean that the players enjoy it when the number of throws is great, in the same way that Piñar, Cárdenas, Conde, Alarcón and Torre indicate (2007).

The second factor includes different skills: receipt, defence and to bounce the ball from them to receive the ball from their teammates is the one that has the highest importance. In this occasion, it seems to be necessary to do the study in depth to know why it has a relative important the receipt of the ball has in the preferences of the players, while the pass has an important weight in no factor; which again fits well within the preferences distinguished by Palao, Ortega and Olmedilla (2004).

The third factor fits well with the preferences distinguished by Palao, Ortega and Olmedilla (2004), it includes recovery of the ball from the adversary's hand, and, in addition, to score a 3 point shot; that clarifies the hierarchy established in Palao, Ortega and Olmedilla's results (2004) (1st Shot; 2nd Defence; 3rd Dribbling; 4th Rebound; 5th Pass);

The fourth factor refers to provoke a personal fault by the adversary, which will allow different possibilities such as scoring free shots or the recovery of the control of the ball preventing the opponent team from throwing to basket; finally, the fifth factor, includes another version of the recovery of the ball, by means of the achieving a rebound.

Previous results and discussions lead us to think that three main conclusions can be established: first, the factors explaining preferences in skills cannot be decided in an isolated way in basketball. Second, the pass is not a relevant component in any of the extracted factors; new studies are

needed to establish the importance of the pass as a key element in team sports. Third, the skills associated by diverse procedures for the recovery of the ball and, especially, the receipt of a pass have an important weight in the second extracted factor.

References

- Comrey, A.L. (1985). *Manual of Factorial Analysis*. Madrid: Cátedra.
- Díaz De Rada, V. (2002). *Technologies of Multivariate Analysis for Social and Commercial Research*. Madrid: Ra-Ma.
- Ortega, E.; Jiménez, J.M.; Palao, J.M., & Sáinz de Baranda, P. (2008). Design and validation of a questionnaire to value the preferences and satisfaction for young players of basketball. *Cuadernos de Psicología del Deporte, 8* (2), 39-58.
- Palao, J.M., Ortega, E., & Olmedilla, A. (2004). Technical and tactical preferences among basketball players in formative years. *Iberian Congress on Basketball Research, 4*, 38-41.
- Piñar, M.I., Cárdenas, D., Conde, J.M., Alarcón, F., & Torre, E. (2007). Satisfaction in mini-basketball players. *Iberian Congress on Basketball Research, 4*, 122-125.