

## Offensive analysis in EUROLEAGUE final four

### *Análise ofensiva nas quartas de finais da EUROLIGA*

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**Abstract** – The aim of this study is to analyze the influence of the ball screen and 1x1 situations on the shooting effectiveness in the Euroleague Final Four of the 2016–2017 season. A total of 1122 offensive actions were analyzed by means of an ad hoc instrument called SOCCB, where the following findings stand out: a) ball screen is the most used concept followed by one-on-one played outside the three-point line and finally, the one-on-one played close to the zone; b) the limited use of the one-on-one played close to the zone and specialization of the big men in screening and shooting actions rather than team behavior is confirmed; c) almost 60% of basketball procedures (ball screen and one-on-one) studied finish in a pass, which increases the importance of being competent in this aspect of the game and play without the ball; and d) ball screen and one-on-one played close to the zone were actions generating benefits and the one-on-one played outside the three-point line was an action with greater tendency towards shooting.

**Key words:** Basketball; Sports; Observation.

**Resumo** – *Este estudo tem como objetivo analisar a influência do bloqueio direto e o 1x1 na efetividade dos arremessos nas quartas de final da Euroliga de basquete da temporada 2016–2017. Um total de 1.122 ações ofensivas foram analisadas usando um instrumento ad hoc chamado sistema de observação de conceitos-chave no basquetebol (SOCCB), onde são destacadas as seguintes conclusões: a) bloqueio direto é o conceito mais utilizado, seguido pelo exterior 1x1 e interior 1x1; b) o uso limitado do interior 1x1 e a especialização dos jogadores do interior em ações de bloqueio e finalização em vez de criação são confirmados; c) quase 60% dos procedimentos estudados terminam em passe, o que aumenta a importância de ser competente no passe e no jogo sem bola; e d) o bloqueio e o 1x1 interno foram ações que geraram vantagens e o 1x1 externo uma ação com maior tendência à conclusão.*

**Palavras-chave:** Basquetebol; Esportes; Observação.

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## INTRODUCTION

One of the main variables in basketball performance is the shooting effectiveness. This is a motor decision of individual nature and depends largely on the player's motor competence<sup>1</sup>, which is why the author states that basketball should be interpreted as an opposition-cooperation rather than a cooperation-opposition sport, as traditionally defined<sup>2</sup>. This redefinition proposal is based on the fact that the relationship that prevails in basketball in relation to the effect on the final result is not cooperation, but opposition. Passing the ball (cooperation) does not change the score, but rather obtaining the opponent's space by shooting the ball to the basket. It is for this reason that the offensive strategy of coaches must be in favoring ideal situations that increase shooting efficiency to the basket<sup>1</sup>, while the defensive strategy will seek to protect its own basket from opponent's offensive play.

High-level basketball coaches, at the beginning of their sporting projects, prepare the team's strategic plan, which consists of the theoretical plan that will be implemented by players. This plan aims to provide a collective organization that allows the team to have a game style due to a specific order. This order is defined by coaches with the configuration of their different game systems, providing their individual interpretation according to each game situation<sup>1</sup>.

In the offensive phase, the plan is composed of different game systems that seek the maximum possible shooting efficiency due to the sequencing of different fundamentals that allow obtaining advantages over the opponent team. These fundamentals can be grouped into three: direct blocks (DB), indirect blocks and one-on-one (1x1)<sup>3,4</sup>. In the defensive phase, the organization is oriented to create norms that allow combating these key concepts that, surely, rival coaches will sequence in their game systems for their teams in a genuine way, depending on the characteristics of their players.

Currently, among these key concepts, DB is probably the most important procedure for obtaining collective advantages and, practically all teams have in their Strategic Plan, different game systems in which DB is an essential part of the system. The execution of DB causes imbalances in the opponent defense system, so that a player can shoot in ideal conditions. In the DB study, it is important not only the frequency of its use, but also the execution space, the actors involved in its execution, the position of the rest of players, preparations prior to the DB execution and its consequences<sup>5</sup>.

One-on-one with the ball is another procedure, in this case of individual nature, which aims to obtain an advantage due to individual resources of the player with the ball. This advantage will be optimized by the same player who generated the advantage or by the rest of teammates who, due to the clearing of the partner with the ball, can benefit from this initial advantage, as long as the player with the ball passes the ball and players without the ball are correctly cleared, that is, they move without the ball, creating free passing lines. Two types of 1x1 can be found: outside the three-point line and close to the zone. One-on-one outside the three-point line is the one made by a

player in an outside position or space (outside the 6.75 m line) with orientation towards the basket<sup>6</sup>. One-on-one close to the zone is that performed by a player located in a position or inside space (close to the basket), in which case it can be performed with orientation towards the basket or facing outside<sup>7</sup>.

Previous studies<sup>3,8</sup> have analyzed the importance of key concepts such as DB and 1x1 in the “Copa del Rey ACB”. Among their main results, the coach’s DB implementation was highlighted as a means of building and attacking, while 1x1 uses it to finish the attack and obtain the score. In this context, the aim of this study was to assess a competition like the Euroleague Final Four, in which the four best teams in Europe play and to analyze the influence of direct block and 1x1 on the shooting effectiveness in the quarterfinals of the basketball Euroleague.

## METHOD

This study used the observational methodology to analyze the effect of one-on-one outside the three-point line and one-on-one close to the zone and direct block on the effectiveness of shoots in the basketball Euroleague<sup>9</sup>.

Observational design is ideographic, because participating teams are viewed as units. This study is punctual because it analyzed the 2017 basketball Euroleague and multidimensional because different response levels were obtained.

As it is an observational study carried out with games broadcast on television and with an influx of audiences, informed consent from athletes was not necessary, as recommended by the ethical requirements determined by the American Psychological Association<sup>10</sup>.

## Sample

The sample consists of the four quarterfinal games of the basketball Euroleague of the year 2017 (two semifinals, final and third and fourth place). The teams analyzed were Fenerbahce (Turkey), Real Madrid (Spain), CSKA (Russia) and Olympiacos (Greece). In total, 1122 offensive actions were recorded during quarterfinals (275), semifinals (547) and final (300).

## Observation instrument and procedure

Offensive plays were observed with completion, for this, the observational methodology was used. The observation instrument used was SOCCB<sup>3</sup>. The analyzed criteria were: game concept (direct block, 1x1 outside the three-point line, 1x1 close to the zone), position of player with the ball (outside, inside), initial zone (7 initial zones), final zone (7 final zones) (figure 1) and conclusion (approval, successful shooting with or without advantage, unsuccessful shooting with or without advantage). The criteria mentioned above were related to each other in order to obtain more accurate information. Sequences were recorded in the Lince v.1.3 software. The objective of focusing the observation on the study object was only analyzed by the player with the ball in the 5 situations prior to shooting.

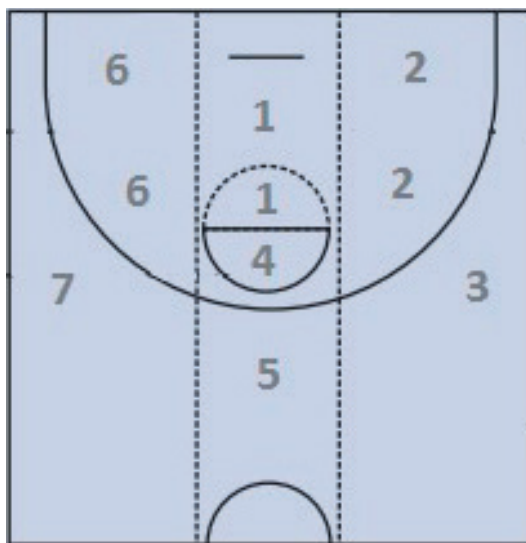


Figure 1. Categories of initial zone and conclusion criteria

## Data analysis

The observed criteria were assessed using the Kolmogorov-Smirnov normality test. Descriptive statistics was used to analyze sample frequencies (n) and percentages (%). Contingency coefficient (cc) was used to measure the strength of the association between criteria and the chi-square ( $X^2$ ) to verify the relationship between them. The likelihood ratio test (L) was used in criteria in which the condition was not met to perform this type of test (cases with frequency less than 5). For data analysis, the IBM SPSS statistical software version 20 for Windows was used.

## RESULTS

DB was the most used concept (63.7%), followed by one-on-one outside the three-point line (21.5%) and one-on-one close to the zone (14.8%), with the consequent greater prominence with the ball of outside players (73.3%) and the scarce presence of ball of inside players (26.7%).

Most actions (84.4%) started outside the 6.75m line, with greater prevalence in the central space (32.3%), followed by the left side and the right side. In relation to shootings, it was observed that these occurred mainly inside the area (36%), in the center (14.8%) and with similar percentages in the right side (12.5%) and in the right zone (11%).

When analyzing the consequence of having used the procedure by the player with the ball, it was observed that actions concluded mainly in pass (58%), in unsuccessful moves without advantage (17.5%), in successful moves (12.3%), in unsuccessful shooting with advantage (7%) and unsuccessful shooting without advantage (4.8%).

Statistically significant relationships were found between concepts with conclusion with the other observed criteria (table 1).

When analyzing the strength of the relationship between categories, it was observed that DB (99.6%) and 1x1 outside the three-point line (84.9%)

are played mainly by outside players and 1x1 close to the zone is played by inside players (57.6%).

**Table 1.** Chi-square tests and measures of association between concepts and conclusions with the other criteria of the observation instrument

Criteria	X <sup>2</sup>	L	CC	P
Concept * Game position		126.99	.522	<0.001
Concept * Start Zone		262.13	.668	<0.001
Concept * Finalization zone		118.25	.439	<0.001
Concept * Finalization		43.28	.311	<0.001

Likewise, it was confirmed that DB starts mainly at the center (41.6%), on the left side (31%) and on the right side (26.3%); finishing in the center (22.7%), out of the center (20.8%) and in the right and left sides in equal proportions (16.5%). One-on-one outside the three-point line starts on the right side (36%) and on the left side (30.2%) and in the center (26.7%); and finish mainly in the center (51.2%) and on the right (12.8%) and left sides (11.6%). One-on-one close to the zone starts mainly in the left zone (37.3%), in the right zone (35.6%) and in the center (8.6%), finishing in the center (71.2%) and on the right side (16.9%).

When analyzing the significant relationship between the analyzed concepts (DB and 1x1) and the conclusion of the action, it was observed that the main consequence of the DB performance was passing the ball (68.2%); subsequently, shooting without advantage (11.8% failure and 4.3% with score); and finally, shooting with advantage (6.3% failure and 9.4% with score).

On the other hand, when playing 1x1 outside the three-point line, 32% plays finished passing the ball, 33.7% shooting with no advantage (27.9% failure and 5.8% score) and 32.5% shooting with offensive advantage (11.6% failure and 20.9% score). In addition, greater efficiency was obtained, since 1x1 outside the three-point line was the most effective means of successfully scoring in 26.7% of shoots, more than 17% of 1x1 close to the zone and 13.7% of DB. Regarding shooting quality (level of defensive opposition), 1x1 outside the three-point line was also the concept that generated the highest proportion of shooting with advantage (32.5%), above 1x1 close to the zone (17%) and DB (15.7%).

Finally, when performing 1x1 close to the zone, in 50.8%, the ball ended up passed, 32.2% plays without advantage (27.1% failure and 5.1% with score) and 17% plays with advantage (5.1% failure and 11.9% with score), observing a greater tendency to pass.

## DISCUSSION

The aim of this study was to analyze the influence of direct block and 1x1 on the shooting effectiveness in the basketball Euroleague.

Regarding data obtained, it was observed that of the three main concepts approached in this study, DB is the most used, followed by 1x1

outside the three-point line and 1x1 close to the zone. These findings are similar to those of other studies<sup>3,5,11</sup>, which highlight high prevalence of DB in the game systems of coaches, prevailing over other concepts.

The data provided show that almost 60% of procedures end up by passing the ball, according to several issues: a) good interpretation of the game situation and that the player with the ball makes good decisions; b) good pass, as there are almost no direct moves after the key procedure; and c) the role of players without the ball is essential, as they must be cleared to create passing lines that allow the defense to be punished after obtaining an initial advantage, due to the procedure adopted.

When studying the type of player for each procedure, it was observed that DB and 1x1 outside the three-point line are practically exclusive to outside players, while 1x1 close to the zone uses inside and outside players. This aspect confirms that in basketball there is a single role, in which the five players can make all decisions, and coaches, through their Strategic Plans, are those who order and limit decision making. Therefore, in the trend observed of 1x1 outside the three-point line and DB only for outside players, it is understood that it should be changed in future investigations due to the natural evolution of the game and players<sup>1</sup>.

DB is played mainly outside the area by the central area and usually ends at that same place or in the center with passes, when shooting is made after DB, they are mostly made without advantage, concluding with greater probability of failures. The results confirm that DB is a game procedure that aims to obtain a collective advantage, 70% of DBs only pass and that only 16% can be used according to previous contributions<sup>3,5,12</sup>. In addition, the results suggest the high defensive level of opponents, the Scouting level and the excellent defensive performance of teams that understand that DB is a fundamental performance instrument that can be neutralized<sup>4</sup>.

Regarding the role of 1x1 outside the three-point line and close to the zone, there is a variation in comparison with previous studies<sup>3</sup>. In this study, unlike previous ones, 1x1 close to the zone was less used than 1x1 outside the three-point line, and this difference may be due to problems specific to the type of matches and players involved in the four teams. It is not possible to draw conclusions about the evolution of this concept, because a larger sample must be used to make comparisons between different leagues. What could be inferred is the limited use of 1x1 close to the zone in recent years in modern European basketball<sup>5</sup> and the non-implementation of research contributions made in NBA<sup>13</sup>, which confirm that the best NBA teams were those that most used 1x1 close to the zone and that its use allowed for more successful ball possessions.

One-on-one outside the three-point line was played almost entirely by outside players, differing from other studies in which similar proportions were observed between 1x1 outside the three-point line and close to the zone<sup>3</sup>. These actions were preferably performed by the sides and ended with shooting, where the effectiveness percentage was conditioned by the level of opposition during shooting, that is, shooting made without opposition

were more effective. One-on-one outside the three-point line was the most effective procedure for obtaining scores and its use is intended to obtain the score, instead of building the collective game<sup>5</sup>, although these findings are contrary to other studies<sup>12,14</sup>, which indicate that DB is the most used and effective finishing action.

One-on-one close to the zone was played mainly by inside players, preferably by the sides of the area (left and right, respectively) and finishing in the center with similar proportions in passes and shootings with low success rates and also with low success rates in ideal conditions (without opposition), because as they contribute to other investigations<sup>5</sup>, shootings after 1x1 close to the zone are highly defended, usually by inside players (with high anthropometric capacity) and also helped by other teammates due to the danger generated by obtaining the interior space near the basket. Therefore, with data presented, it is confirmed that 1x1 close to the zone allows a combination between the pass-oriented collective game and the conclusion-oriented game. In addition, as also performed on previous occasions<sup>5</sup>, the current specialization of inside actors as blockers and finishers, in which this issue, which seems to be limiting the creation of inside players, differs from the contributions in which it is considered that the evolution of the modern basketball player tends to a more versatile player<sup>1</sup>.

## CONCLUSIONS

The results obtained in the ACB League confirmed that DB and 1x1 close to the zone were advantageous actions and 1x1 outside the three-point line is an action with greater tendency to completion. In addition, as in other studies, direct blocking was the most used concept. On the other hand, in this investigation, 1x1 outside the three-point line had greater presence than 1x1 close to the zone. The low use of 1x1 close to the zone and the specialization of inside players in blocking and finishing actions, and not in creation, is confirmed, giving greater emphasis to the ball, mainly in the creation of advantages to outside players.

A high percentage of plays (almost 60%), after the execution of the study procedures, continues with pass, which increases the importance of being competent in this aspect of the game and the need to play without the ball, correctly allowing passing lines so that the player with the ball can pass without losing the ball.

## COMPLIANCE WITH ETHICAL STANDARDS

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### Ethical approval

This research is in accordance with standards set by the Declaration of Helsinki.

## Conflict of interest statement

The authors have no conflict of interests to declare.

## Author Contributions

Conceived and designed the experiments: ES, JS, VM, AE. Performed the experiments: ES, JS, VM, AE. Analyzed data: ES, JS, VM, AE. Contributed with reagents/materials/analysis tools: ES, JS, VM, AE. Wrote the paper: ES, JS, VM, AE.

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