

Article

# Impact on evaluation of Viewpoints to assess the positioning on half-court defense in the basketball

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## Abstract

While there are some desirable and some not-so-desirable half-court positions in basketball, the "desirable positioning" may not always be clearly determined due to the values of the coach or manager. The most important factor in this is the "point of view". Therefore, the purpose of this study is to examine the perspectives that influence the evaluation of positioning in half-court defense for university teams belonging to the first and second divisions of the Basketball Federation. A total of 192 players (110 male players and 82 female players) from university teams in the first and second divisions of the K-Student Basketball Federation were included in the study. As a result, the perspectives of the reasons for the decisions obtained in the descriptive form have been classified into the following categories: "Weak-side defensive position," "Strong-side defensive position," "Ball man defensive position," "General defensive position," "Defensive position related to play selection," "Defensive position related to coordination," and "Defensive position related to situational judgment." The defensive positions were classified into seven categories: defensive positions related to situational viewpoints.

**Keywords:** Basketball, Half-court Defense, Defense positioning, Team tactics

## 1. Introduction

The purpose of defense in basketball is to reduce the number of shots taken by the opponent's offense and to decrease the probability of those getting into to the basket (Suzuki, 2016a). It also has the purpose of preventing shots, responding to offensive moves, such as passing, dribbling, and cutting, and trying to win the ball (Otaka, 2007). There have been many studies on defense (Cooper, 1930; Franks, 2015; Kozuwa et al., 2015; Inagaki, 1982; Miura et al., 2009; Yamaguchi et al., 2012; Yaita et al., 1989; Yamamoto, 2009; Yoshida et al., 2005).

Yaita et al (1995) stated that the basis of defense is to maintain a group confrontation and prevent or obstruct shots and not make them easy to execute. Uchiyama (2000) defines defense as "the actions taken by players to interfere with or prevent attacks and preparations for attacks when the enemy has possession of the ball." This requires that the offense not be given the luxury of space, time, or numerical advantage.

There are two types of defensive techniques: individual and team. Yoshii (1987) proposed two types of individual defensive techniques: "defensive stance (defense)" and "defensive prevention". He then argued that players must cooperate with each other to strengthen the defensive skills of their team, and also establish a way of thinking about defense (Yoshii, 1987).

Positioning is one of the most important factors in defense. Iwamoto (1989) states that the success or failure of the next move depends on whether or not the stance and positioning prepared in advance can be successfully made executed. In the case of half-court defensive positioning, what constitutes "proper positioning" varies greatly depending on the perspective from which it is viewed. For example, what may look appropriate to a player on the court may not necessarily look that way to a coach off the court. Also, the appropriate position may vary depending

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on whether the player is focusing on the distance and position of the offense, or on the play the offensive player is defending, such as passing, shooting, or dribbling.

In addition, the appropriate position also depends on the height of the offensive player and the tendency of the offensive player to make a certain play move (e.g., in which direction he often passes). In addition, in sports, the meaning of "understanding" differs between players and instructors (Mori, 1994). Therefore, players do not always understand the defensive tactics presented by coaches. In the present study, players do not always understand the defensive tactics presented by coaches. As stated in the previous section, coaches can change the structure of their practice programs by first learning what the players, who are actually on the court rather than the coach, are thinking and what they are focusing their attention on.

For these reasons, the positioning of the half-court defense varies according to various viewpoints, and it is necessary to establish a uniform standard for teams.

Therefore, the purpose of this study is to examine the perspectives that influence the evaluation of half-court defense positioning for university teams in the First and Second Divisions of the Basketball Federation.

## **2. Methods**

### **2.1. Subjects**

A total of 192 university students, 110 male players and 82 female players, who are members of the K-Student Basketball League first and second divisions. Each university team has a high level of skill, having achieved 8th place or higher in the major tournaments of their league.

### **2.2. Survey Items**

The scenes of the positioning items of the half-court defense were extracted from the actual plays by watching the videos of the 67th All-Japan University Basketball Championship and the 24th All-K University Basketball League Tournament, and an example of the questionnaire is shown in Fig. 1. The three items for evaluating the positioning of the half-court defense are (1) straight cut, (2) step and front cut, and (3) back cut, all related to cut-in plays. Next, there are five questions on pick-and-rolls (4. drive-to-the-goal, 5. cut-away, 6. early release, 7. open shot, 9. jump shot), which ask about the defensive positioning when the center player goes to pick the ball man. The next question is about off-ball screens. Next, The questions about off-ball screens (8. backdoor play, 10. cut in, 11. cut out, 12. out in, 13. double low post, 18. back screen, 22. outside screen). There are question about the defensive positioning of offensive players when they screen each other. Next, there are three questions on dribble screens (14. dribble to the goal, 19. cut away, 20. jump shot), which ask the defensive positioning when an offensive player crosses the dribbling player while dribbling on the outside and moves into position. There are questions about defensive positioning. Finally, there are four questions on handoff plays (15. Cut Away, 16. Pop Out, 17. Screen and Jump Shot, 21. Drive to the Goal) that ask about the defensive positioning of an offensive player when he moves up to a player who is holding the ball on the outside and hands him the ball. There are a total of 21 items in five areas, including questions on defensive positioning when an offensive player approaches a player holding the ball on the outside and receives the ball by hand (Table1).

### **2.3. Implementation of the questionnaire survey**

The age and other characteristics of the subjects included in the analysis are shown in Table 1. This study was conducted with the approval of the research ethics committee of the institution to which the subject belonged (2020-10), and with the written explanation and consent of the subject that the purpose of the study, the content of the measurements, and the research data would not be used for purposes other than those of the study, and that no individual would be identified when the study was published.

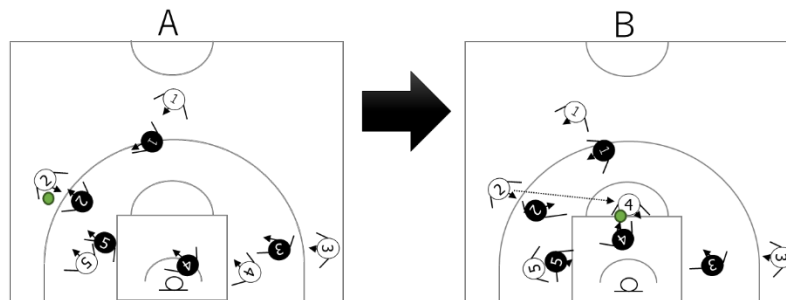
Then, questionnaires were distributed to the leaders of each school and mailed to the subjects later. The survey consisted of an example questionnaire (Figure. 1) that illustrated the positioning of offense and defense before and after the start of the play in question, with a written explanation of the reason for the defensive evaluation, and a five-point rating for the defensive evaluation. After collection of the questionnaires, the descriptive reasons were categorized into 5 to 8 for each item.

Table 1. Positioning items for half-court defense

Major items	Sub-items	Content	
Pick and roll	1. Straight cut	This question asks whether the ball man is able to jump to the ball to the ball line side immediately after he passes the ball.	
	2. Front cut	Immediately after the ball man passes the ball, he feints to the opposite side and runs to the inside. In this case, the question is whether he is able to jump to the ball line side (jump-to-the-ball) without feinting.	
	3. Off ball	This is a question on positioning when a defender floods in anticipation of a front cut.	
	4. Drive to the goal	Ball man asks about the positioning of the screener's defender as he uses the screener to advance to the goal after the screen is fully set.	
	5. Cut away	When the ball man uses the screener to get to the goal after the screen is completely set, the screener rolls and receives the ball at the goal when the defense switches and defends. The question is then about the positioning of the defender who was on the screen and rolled.	
	6. Early Release	He went for a screen against the ball man and the screener showed that he was going to set the screen and ran for the goal. The question is about the screener's defensive positioning at that moment.	
On-ball screen	7. Up on shot	When the offense used an inside screen, the defense set a stretch-the-top. The question asks about the positioning of the two defenders who set the trap against the ball man and the positioning of the other players.	
	8. Jump shot	He performs an inside screen against the ball man and shoots a jump shot because the screener's defense was down. The question asks about the positioning of the screener's defense at that time.	
	9. Backdoor play	The ballman makes a pass to the side, feints once to the opposite side, and then uses the inside player's back screen to advance in the direction of the ring. This question asks the positioning of the defender marking the ballman and the positioning of the screener's defender.	
Off-ball screen	10. Cut in	The question asks about precise positioning between the ball man and the man-on-man when the outside screen is being conducted on the opposite side of the ball man, the screen is conducted on the opposite side, and the offense cuts inside.	
	11. Cut out	The player in the low post receives a pass on the outside using the screen of the inside player in the high post. The question is about where the defender in the low post will pass to the screener who screens down, and the positioning of the inside screener's defense at that time.	
	12. Out in	The ball man passes to the low post and then goes to screen the inside player on the opposite side. The question is how to position the defender to be screened.	
	13. Double low post	The offense on the ball side goes to screen the offense on the opposite side. The question is about the positioning of the defender on the screened side, and the positioning of the defender on the screened side.	
	14. Back screen	The inside player puts a back screen on the outside player. The defense responds by diving off the screen, and the screened offense flashes to the high post. The question is about the positioning of the defense when the screened offense goes up to the high post.	
	22. Outside screen	The ball man passes the ball to the inside player who then goes to screen the player on the outside. The question is then about the positioning of the defense against the offense between the outside players.	
	Dribble screen	14. Dribble to the goal	The ballman dribbles and passes the ball to his teammate. The question is about the positioning of the ballman's defender and the positioning of the defender on the receiving end of the ball.
		19. Cut away	The ball man approaches the view and makes a pass. The offense receives the ball and thrusts a dribble, but the defense responds by playing switch defense, so the offense that made the pass runs toward the goal. This is a question of how the defense should react to the offense running toward the goal.
		20. Jump shot	The ball man approaches the view and makes a pass. The offense receives the ball, and the defense responds with a slide, so he shoots against the offense that made the pass. The question is about the defense against the offense that receives the ball again.
	Hand off play	15. Cut away	After passing the ball to the player on the outside, the ball man runs in the direction of the ball man and receives the ball again on the outside. The question is the positioning of the ballman's defender and the positioning of the defender on the side of the ballman who made the pass again on the outside.
16. Pop out		After passing the ball to the player on the outside, the ball man runs in the direction of the ball man and receives the ball again on the outside. Ballman's defense responds with a slide, but the offense that made the pass opens up on the outside and receives the ball. The question is about the positioning of the defender who received the ball on the outside.	
17. Screen and jump shot		After passing the ball to the player on the outside, the ball man runs in the direction of the ball man and receives the ball again on the outside. Ballman's defense responds with a slide, so he walls up the offense who made the pass and shoots. The question is about the positioning of the defender who received the ball at that time.	
21. Drive to the goal		After passing the ball to a player on the outside, the ball man runs in the direction of the ball man, receives the ball again on the outside, and dribbles toward the goal. The question is how to position the defense against the offense that receives the ball again.	

You will be presented with two diagrams of defensive situations, and you are to look at the two diagrams (Diagram A moving to Diagram B) and score the defensive positioning of the defender in Diagram B (black circle ●). Score on a 5-point scale.

Example Problem 1) Look at Figure A→B and answer the following questions. Please answer about the positioning of "B".



Problem 1.  
When OF No. 4 went up to the high post, OF No. 2 made a pass. The arrows on each number are from the player's perspective.  
Please answer on a 5 point scale.

Defense Evaluation Points 1 · 2 · 3 · 4 · 5

※A score of 1 means the defense is not in good shape, and a score of 5 means it is very good.

Please list at least two reasons why you gave the above score in bullet points.

Because the distance between the defender and the offender is too great and there is no space...  
Because the defender is looking too much at the ball man and not at his own marksman...

Figure 1. Examples of survey items

#### 2.4. Analysis Method

For the evaluation of defense, the differences in the means of the evaluation scores for each of the categorized were tested by on analysis of the variance. Only the reasons that showed significant differences were taken up, and their frequency and mean values were compared. Statistical processing software IBM SPSS statistics24 (IBM) was used for the analysis, and the significance level was set at less than 5%.

#### 3. Results

The results of the classification of the viewpoints of the reasons for judgment obtained in the form of descriptions were classified into seven categories: "Weekside defensive position," "Strongside defensive position," "Ball man defensive position," "General defensive position," "Defensive position related to play selection," "Defensive position related to coordination," and "Situation defensive position related to the viewpoint of judgment" (Table 2).

The results of the analysis of variance for each of these categories are: pick and roll (Early release,  $F_0=3.04$ ,  $df=[7,369]$ ), (Open-shot,  $F_0=4.16$ ,  $df=[6, 319]$ ), (Jump shot,  $F_0=5.15$ ,  $df=[5, 318]$ ), Off-ball screen (Backdoor,  $F_0=3.84$ ,  $df=[4, 332]$ ), (Cut,  $F_0=5.68$ ,  $df=[4, 314]$ ), (Out-in,  $F_0=2.87$ ,  $df=[6, 340]$ ), (Back screen,  $F_0=4.43$ ,  $df=[6, 432]$ ), Hand off play (Cut-away,  $F_0=3.20$ ,  $df=[7, 328]$ ), (Pop-out,  $F_0=3.41$ ,  $df=[6, 290]$ ), (Screen-and-jump shot,  $F_0=2.97$ ,  $df=[4, 319]$ ), (Drive-to,  $F_0=5.40$ ,  $df=[5, 332]$ ), Dribble screen (Cut-away,  $F_0=8.56$ ,  $df=[7, 432]$ ), (Jump shot,  $F_0=5.09$ ,  $df=[7, 365]$ ). There was a clear correspondence between the ratings and the reasons for them (Table 3).

**Table 2.** Seven consolidated categories of the reasons for choosing positioning based on the subjects written explanation

no.	Category
1	defense positioning on the weak side
2	defense positioning on the strong side
3	defense positioning for the ball handler
4	overall configuration of the defense
5	defense positioning related to choosing a play
6	defense positioning related to cooperative plays
7	defense positioning related to situational assessment

**Table 3.** The items showing significant difference among mean category scores by one-way ANOVA

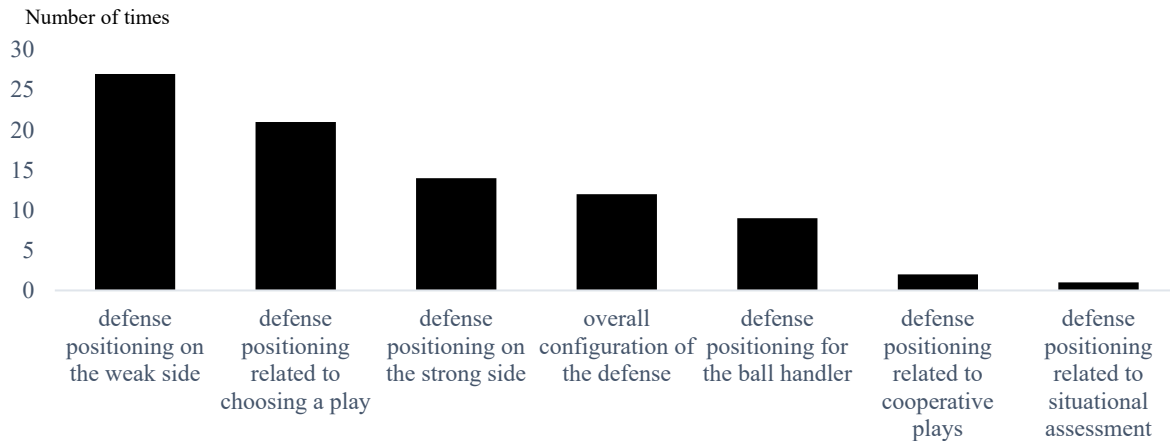
	Play items	Fo <sup>†</sup>	df1 <sup>†</sup>	df2	p	
Pick and roll	early release	3.04	7	369	p<0.01	**
	open shot	4.16	6	319	p<0.05	*
	jump shot	5.15	5	318	p<0.01	**
Off-ball screen	backdoor	3.84	4	332	p<0.01	**
	cut	5.68	4	314	p<0.05	*
	out in	2.87	6	340	p<0.05	*
Hand off play	back screen	4.43	6	432	p<0.05	*
	cut-away	3.20	7	328	p<0.01	**
	pop-out	3.41	6	290	p<0.01	**
Dribble screen	screen-and-jump shot	2.97	4	319	p<0.05	*
	drive-to	5.40	5	332	p<0.05	*
	cut away	8.56	7	432	p<0.01	**
	jump shot	5.09	7	365	p<0.01	**

<sup>†</sup> )Fo = Indicates the F value. df = degrees of freedom.

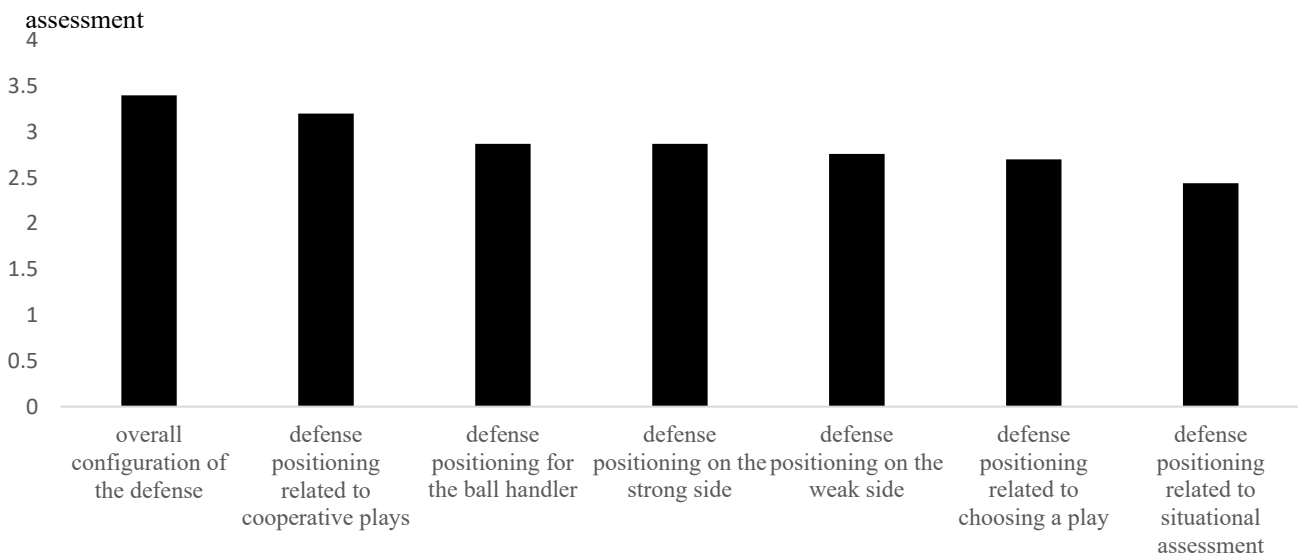
In terms of the frequency of the reason categories, limited to the items that showed significant responses, "Weak side defensive position" was the most frequent reason category (27 times), followed by "Defensive position related to play selection" (21 times), "Strong-side defensive position" (14 times), "General defensive position" defensive position related to the selection of plays" 21 times, followed by "defensive position on the strong side" 14 times, "defensive position in general" 12 times, "defensive position on the ball man" 9 times, "defensive position related to coordination" 2 times, and "defensive position related to the perspective of situational judgment" 1 time.

The mean of the ratings for each reason category was 2.44, with "defensive position related to situational perspective" being the most significant, followed by "defensive position related to play selection" with a score of 2.70, "defensive position related to weak-side" with a score of 2.76, "defensive position related to strong-side. The most significant was "general defensive position" with a score of 3.40 (Figure. 2, Figure. 3).

In other words, the players gave more points to the "Weak-side defensive position", suggesting that the "General defensive position" had the highest score in the reason category.



**Figure 2** Reasons for choice of positioning



**Figure 3** The mean assessment scores for each reason

#### 4. Discussion

In general, the ball man tends to be regarded as the center of play in basketball, but the findings of this study show that many of the subjects focused on the weak side, away from the ball man. However, the results of this study show that most of the subjects focused on the weak side, which is away from the ball man. The defensive positioning for the ball man is closer to each other and requires a faster response, so the play tends to follow theories, and there are fewer options for team tactics and individuals.

The weak-side, on the other hand, may not seem necessary at first glance, but it allows for greater distance from the offensive ball carrier, and thus offers more team tactics and individual options. There are two ways of thinking about defense: (1) to defend and prevent the opponent's attack, or (2) to reduce the offense's options and launch an attack (Kuraishi, 2016).

For defense, there are two types of stances: a closed stance, in which the body faces only the opponent, and an open stance, in which the body faces both the ball and the opponent to be defended (Japan Basketball Association, 2014). Because basketball requires players to be able to react instantly to the next possible situation in addition to defensive positioning stance and vision are considered to have become perspectives that influence evaluation. Therefore, the evaluation scores tended to be lower when the weak-side positioning was considered inappropriate.

In the reason category, the evaluation of "general defensive position" was the highest. This indicates that the evaluation is high only when the overall positioning of all players is good. Uchiyama (2000) states that the principle

of defense is "not to give the offense any room to maneuver in terms of space, time, and manpower advantage," specifically, to always "pressure" the ball carrier and the marksman, to "deny" them the ball so that they cannot advance it to the enemy's dangerous player or area, and to retreat to the ball line. This can be summed up in three points: always "pressuring" the ball carrier or marksman, "denying" him the ball so that he does not advance to a dangerous player or area, and retreating to the ball line to take a "help" position. In other words, even if the defenders at the ball man, the weak-side, and the strong side have good positioning, if there is even one player who does not have good positioning, the team as a whole will not be able to defend well. From the above, it can be concluded that defense can be evaluated highly only when the floor balance of the five players is in order.

In addition, defense includes "the defensive system chosen by the team", "the role of the player in the defensive system of the team", "the phase of the game (building the opposing team's offense and stopping the opposing team from preparing and executing an offensive end)", "the level of the player's own competitiveness" (Stiehler et al, 1988).

In recent years, there has been a remarkable development of visual information devices, which was not available a few decades ago (Kodama, 1999; Rikugawa, 2003; Sasaki et al, 1992), and changes in defensive tactics could be observed. For example, Sports Code (made by Sportstec) is one of the most famous software. By using this software, individual and team plays can be shortened and edited for use in meetings, and in addition, video footage can be inputted into the iPod and distributed to each player (Morishige, 2010). As a result, it becomes easier to analyze and collect information on the patterned offensive plays of opponents and the characteristics and habits of individual players in advance, and to take counter-measures, such as devising unique defensive tactics to counter them. Therefore, those who can analyze information more accurately and use it for defensive strategies and tactics, and the team that analyzes information faster stand a better chance of winning.

## 5. Conclusion

1. In this study, we examined the perspectives that influence the evaluation of positioning in half-court defense and we found the following: 1.
2. The following seven decision-making perspectives were extracted: (1) weak-side defensive position, (2) strong-side defensive position, (3) ball-man defensive position, (4) general defensive position, (5) defensive position related to play selection, (6) defensive position related to coordination, and (7) defensive position related to the perspective of situational judgment. The following seven defensive positions were extracted.
3. The most frequent reason category was (1) Weak-side defensive position (27 times), which was higher than (2) Strong-side defensive position (14 times) and (3) Ball man defensive position (9 times) when limited to the items that showed significant responses. The mean of the evaluations for each reason category was 2.44, which was the strictest of the seven (7) defensive positions related to situational viewpoints, and (4) general defensive position was the highest with a score of 3.40.
4. For positioning in half-court defense, the weak-side is more important than the strong side or the ball man.
5. The team that analyzes all information more accurately and uses it in its defensive strategy and tactics, will have a better chance of winning.

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