



Notational Analysis in the Achievement of Back-line and Front line Attacking in the Fourth World Women's Volleyball League 2022

Yijuan Feng¹, and Weraphong Bangthamai²

^{1,2}Faculty of Sports Science and Technology, Bangkokthonburi University, Thailand

¹E-mail: 1521093669@qq.com, ORCID ID: <https://orcid.org/0009-0007-1141-0004>

²E-mail: weraphong.ban@bkkthon.ac.th, ORCID ID: <https://orcid.org/0009-0005-1630-1697>

Received 12/05/2023

Revised 17/05/2023

Accepted 21/05/2023

Abstract

Background and Aim: In the international competitions, each volleyball team except the front-line players to attack. and players in the back line to attack At the same time, net blocking strategies have also been improved., that is, blocking the attack of the players in the front line and the attack of the players in the back line. Especially because there are restrictions on the blocking rules, players in the backline are prohibited from blocking the net. In this case, the blocking side must decide whether to block the players in the front line or the back line, increasing the defense's difficulty. The objectives of this research were: (1) To study the performance of the attacking score of the backline players; (2) To compare the percentage of backline attacks for each volleyball team in the second round; and (3) To compare the percentage of the attacking by a front-line player and backline player of every team in this round.

Materials and Methods: This is survey research. The research sample is the top four teams in the 2022 World Women's Volleyball League, which are Italy, Brazil, Serbia, and Türkiye. The research tool includes statistical tables of front-line and backline attacks of four volleyball teams, complete game videos of four teams, and analysis of game videos using Kinovea software. The statistics used in the data analysis were percentages and mean for related samples.

Results: The results show that: (1) The distribution of the backline attack positions of the four teams in the game focuses on positions 1 and 6, and the number of attacks at position 5 is far lower than that at positions 1 and 6; (2) The Italian team, which won the championship, has the highest percentage of backline attacks in the total number of attack balls and the highest success rate among the four teams; (3) This indicates that the teams that use more backcourt attacks and have a higher success rate can obtain a higher ranking in the competition.

Conclusion: (1) The team with the more direct attack points scored by the backline players has a greater chance of winning the game and ranking higher in the game performance; (2) Teams with a higher percentage of backline attacks will rank higher in the game performance rankings; and (3) The higher the average number of attacks in the backline per set, the higher the score ranking of the team.

Keywords: World Women's Volleyball League; Back-Line Attack; Front line Attack; Front line Players; Back-Line Players

Introduction

Volleyball players' attack score is divided into two types: the front-line player's attack and the back-line player's attack. In the past, various volleyball teams generally used front-line players to attack. Because of the front-line players need a great sense of satisfaction, and the audience liked, excited, and liked to watch sports games. In the early years of the game, the backline attack was used as a means of supplementing the attack, usually done when the first pass was not in the setter's position. But at present, as the height of volleyball players continues to increase, their jumping ability is also improving. Each volleyball team has also developed more effective blocking. Factors only relying on the two-point attack or three-point attack in the front line can no longer meet the needs of modern volleyball competitive games, making it more difficult for the players in the front line to succeed in attacking, so it is necessary to find more diversified attack strategies. In this regard, it is necessary to apply the attack of the backline players to the volleyball game. To start using this strategy, only 1-2 players of each volleyball team are backline attackers.

In the rules of volleyball, players in the backline are prohibited from participating in the attack or blocking the opponent's attack in front of the attack line. With the development of athletes' physical fitness and volleyball skills, only the front-line attack in front of the net can no longer meet the needs

[131]

Citation:



Feng, Y., & Bangthamai, W., (2023). Notational Analysis in the Achievement of Back-line and Front-Line Attacking in the Fourth World Women's Volleyball League 2022. International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3), 131-142; DOI:

<https://doi.org/10.14456/jsasr.2023.41>



of scoring in the game. (Schmidt, B, 2015). But how to make a more effective attack depends not only on the physical fitness and skills of the offensive players but also on the variability of the offensive position. An effective attack needs to enrich the attack options of the whole network, avoid the organized blocking of the attacking opponent, and distract the opponent's blocking attention, to better increase the chance of a successful attack. (Drikos, S., Sotiropoulos, K., Gkreka, S., Tsakiri, M., & Barzouka, K, 2023). In the 1977 World Men's Volleyball Competition, the Polish team used the tactic of back-line attack for the first time, and the offensive method of backline attack came into being. (Zhao, B., 2011). The backline attack is an offensive shot that needs to be completed from behind the three-meter line, so the requirements for the physical fitness of the players, as well as the technology and game experience of volleyball, are relatively higher. (Yuan, J., 2010). A study on the use of backline attack found that the overall use of backline attack by the men's volleyball team of Hunan Normal University is too low, and the use of backline attack is too concentrated and single (Cui, Q., 2020).

In international competitions, each volleyball team, except the setter, has a strategy of using players in the front line to attack and players in the backline to attack. The alternating attack of the front and backlines can confuse the defending team, which will make the volleyball team's attack more successful. At the same time, the tactic of blocking out the net has also been improved, that is, blocking the attack of the players in the front line and the attack of the players in the backline. Especially because there are restrictions on the blocking rules, players in the backline are prohibited from blocking the net. In this case, the blocking side must decide whether to block the players in the front line or the backline, which increases the difficulty of the defense. Circumstances can affect the winning or losing of the game.

Therefore, the researcher needs to compare the impact of the attack results of the players in the front line and those in the backline in the international volleyball competition, to be a guide for volleyball competition and training in the future.

Objectives

The purpose of this research is to find out as follows:

1. To study the attacking score of the backline players.
2. To compare the percentage of backline attacks for each volleyball team in the second round.
3. To compare the percentage of the attacking by the front-line player and backline player of every team in this round.

Literature Review

1. Backline Attack

1.1 The origin and characteristics of backline attack

The backline attack originated in the third World Cup men's volleyball match in 1977. At that time, the Polish team, a world powerhouse, first used it (Zhou, L., 2007). The backline attack has the characteristics of a strong attack, fast ball speed, outstanding strength, high scoring rate, strong suddenness, concealment, and wide attack range. It is one of the most widely used attack techniques in domestic and foreign volleyball teams. Its technical characteristics determine that it has become the mainstream of the development of volleyball attack techniques and tactics in the world today.

1.2 The rise and development of backline attack

There are two reasons for the rapid rise of the backline attack: 1. The height of the athletes and the obvious improvement of special skills; 2. To give the main attacker or the strong attacker a better chance to attack (Guo, S., 1995). With the development of attack technology and defensive technology, fast break in the backline is in line with the current trend of deep development in volleyball (Nie, H., 2006). Due to the continuous improvement of the world volleyball defense system, the psychological changes of the players and the effect of the back-line attack on the rotation of the lineup have led to the rapid development of the back-line attack (Xu, C., 2014).

2. The Use of Backline Attack

2.1 The scope and characteristics of the use of attack tactics in the backline

The backline attack is an offensive shot that needs to be completed from behind the three-meter line, so the requirements for the physical fitness of the players, as well as the technology and





game experience of volleyball, are relatively higher. The backline attack has become one of the common attack methods used by high-level volleyball teams, and it has been analyzed that volleyball players with insufficient levels need to have certain jumping ability and jumping skills, and a long-distance run-up if they want to use the backline tactics with a strong ability to control the ball and a tacit understanding of the tactics of the setter and the attacker. Backline attacks can be widely used in professional teams and can also be used partially in college volleyball teams and high-level volleyball teams (Yuan, J., 2010). A study on the use of backline attack found that the overall use of backline attack by the men's volleyball team of Hunan Normal University is too low, and the use of backline attack is too concentrated and single (Cui, Q., 2020).

2.2 Positional characteristics of backline attack

In terms of position division, the backline attacks are carried out from positions 1, 5, and 6. Generally speaking, the backline attacks are mostly from positions 1 and 6, because No. 6 is in the middle of the field, the attack vision is more open, and there are more options for attacking routes. However, the attack of the No. 1 position is often related to the characteristics of the position played by the athlete, and most of them are based on the support position.

From the analysis of the characteristics of the back-line attack in the 2008 Beijing Olympic Men's Volleyball Final, it is concluded that the back-line screen is widely used. (Shi Lixin, 2009). To identify predictors of attacks executed from positions 1 and 6 based on the catch effect of high-level Brazilian men's volleyball teams, and to identify predictors that differentiate play from these positions. To identify predictors of attacks executed from positions 1 and 6 based on the catch effect of high-level Brazilian men's volleyball teams, and to identify predictors that differentiate play from these positions. Regardless of the effect of the catch, the use of back-line attackers is recommended to increase the uncertainty and scoring chances of the opposing team (Costa, G. D. C. T., de Oliveira Castro, H., Freire, A. B., Evangelista, B. F., Pedrosa, G. F., Ugrinowitsch, H., & Praça, G. M., 2018). Against high-level teams, the strong attack and second-attack rhythm of the 6 positions will increase the chance of attacking points; The strong attacks of the 1st and 5th positions reduce the chance of the game continuing; A powerful attack at the 6 position increases the chance of blocking (Rocha & Freire, 2019). Teams with lower levels will rely too much on the adjusted attack and single-point attack of the second and third positions in the backline. Lack of use of the fourth position in the backline, lack of tactical deployment for the three-dimensional attack, and failure to integrate the backline attack into its own "quick-changing" tactical system (Cui, Q., 2020).

Conceptual Framework

The conceptual framework for the research is as follows:

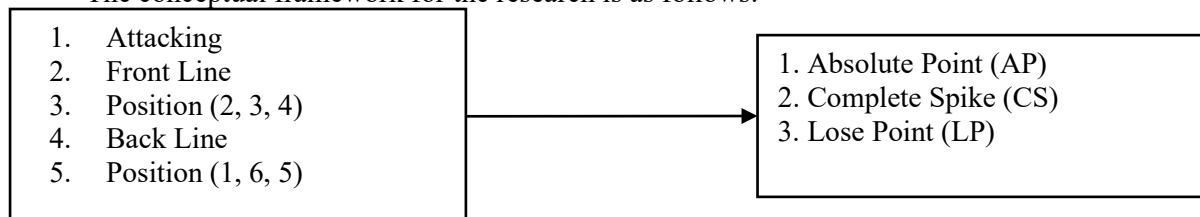


Figure 1: Conceptual framework of the study

Methodology

1. Population and sample

- 1.1. Population: 16 participating teams for the 2022 World Women's Volleyball League.
- 1.2. Sample: The top 4 participating teams in the second round of the 2022 World Women's Volleyball League are Italy, Brazil, Serbia, and Türkiye.
- 1.3. Sampling techniques: Purposive sampling, use non-random, purposeful sampling. According to the results of the first three weeks of the World Women's Volleyball League, the top 4 women's volleyball teams in the standings were selected from 16 teams.





2. Data collection and Data analysis

In this research, we analyzed the aggression of each game through the video of the World Women's Volleyball League Finals. When watching a video of the game, pause the video after each attack and write down the required information on the record sheet, and when the World Women's Volleyball League game is over, the information recorded on the record sheet is used to analyze the attack results. Afterward, we utilized the percentages for data analysis when analyzing attack performance and used the Mean to describe the success of teams.

Results

By using Kinovea software to watch the game video and using a self-made record table to collect the game data required for this article, press the pause button for each attack shot encountered during the video viewing process, and record the required data in the record table.

Table 1: Statistics of AP, CS, and LP in Brazil vs Serbia front line and backline attack

Playing Team: Brazil vs Serbia Semi-finals 1									
Date: 7/16/2022									
The Winner: Brazil 3-1									
Position	Front line attack			Total	Position	Backline attack			Total
	AP	CS	LP			AP	CS	LP	
4	26	26	11	63	5	1	0	0	1
3	11	5	4	20	6	4	5	2	11
2	14	7	4	25	1	3	4	1	8
Total	51	38	19	108		8	9	3	20
Serbia 1-3									
Position	Front line attack			Total	Position	Backline attack			Total
	AP	CS	LP			AP	CS	LP	
4	18	23	7	48	5	1	0	0	1
3	9	5	2	16	6	3	2	2	7
2	20	18	8	46	1	1	3	4	8
Total	47	46	17	110		5	5	6	16

Remark: AP = Absolute Point, CS = Complete Spike, LP = Lose Point

Table 1 shows that this competition is the first game of the semi-finals, with Brazil vs Serbia. The Brazilian team won 3-1 against the Serbia team. The specific information about this competition is as follows:

1. The data for the front-line attack of the Brazilian team are AP: 51, CS: 38, and LP: 19, with a total of 108 attack counts; The data for the backline attacks are AP: 8, CS: 9, and LP: 3, with a total of 20 attacks.





2. The data of front-line attacks of the Serbian team are AP: 47, CS: 46, and LP: 17, with a total of 110 attacks; The data for backline attacks are AP: 5, CS: 5, and LP: 6, respectively. The total number of backline attacks is 16.

Table 2: Statistics of AP, CS, and LP of Italy vs Türkiye front line and backline attack

Playing Team: Italy vs Türkiye semi-finals 2									
Date: 7/16/2022									
The Winner: Italy 3-0									
Position	Front line attack			Total	Position	Backline attack			Total
	AP	CS	LP			AP	CS	LP	
4	16	24	3	43	5	0	0	0	0
3	6	3	1	10	6	3	2	0	5
2	18	10	5	33	1	7	4	2	13
Total	40	37	9	86		10	6	2	18
Türkiye 0-3									
Position	Front line attack			Total	Position	Backline attack			Total
	AP	CS	LP			AP	CS	LP	
4	11	15	8	34	5	0	0	0	0
3	9	6	1	16	6	1	2	3	6
2	19	15	5	39	1	2	1	2	5
Total	39	36	14	89		3	3	5	11

Remark: AP = Absolute Point, CS = Complete Spike, LP = Lose Point

Table 2 shows that this match is the second semi-final between Italy and Türkiye. In this match, the Italian team defeated Türkiye 3-0. The attack data of the two teams in this game are as follows:

1. The data of the front-line attack of the Italian team in this match are AP: 40, CS: 37, LP: 9, with a total of 86 front-line attacks; The backline attack is AP: 10, CS: 6, and LP: 2, with a total of 18 attacks.

2. Türkiye Team attacked in the front line of the game with the number of AP: 39, CS: 36, LP: 14, a total of 89; The data for backline attacks are AP: 3, CS: 3, and LP: 5, with a total of 11 backline attacks.

Table 3: Statistics of AP, CS, and LP of Serbia vs Türkiye front line and backline attack

Playing Team: Serbia vs Türkiye Third place final									
Date: 7/17/2022									
The Winner: Serbia 3-0									
Position	Front line attack			Total	Position	Backline attack			Total
	AP	CS	LP			AP	CS	LP	
4	31	15	9	55	5	0	1	0	1





Playing Team: Serbia vs Türkiye Third place final									
Date: 7/17/2022									
The Winner: Serbia 3-0									
3	7	5	3	15	6	1	1	0	2
2	15	17	4	36	1	0	1	1	2
Total	53	37	16	106		1	3	1	5
Türkiye 0-3									
Position	Front line attack			Total	Position	Backline attack			Total
	AP	CS	LP			AP	CS	LP	
4	9	13	11	33	5	0	0	0	0
3	11	8	0	19	6	0	1	1	2
2	12	11	6	29	1	5	6	2	13
Total	32	32	17	81		5	7	3	15

Remark: AP = Absolute Point, CS = Complete Spike, LP = Lose Point

Table 3 shows that Serbia vs Türkiye played in the final of third and fourth place. In the end, the Serbian team defeated the Türkiye team 3-0, and won third place in the World Women's Volleyball League, while the Turkish women's volleyball team won fourth place. Two teams in this game. The attack data of both sides are as follows:

1. The data of front-line attacks of the Serbian women's volleyball team in this match are AP: 53, CS: 37, and LP: 16, totaling 106; The data for backline attacks are AP: 1, CS: 3, and LP: 1, respectively, with a total of 5 rear line attacks.

2. The front-line attack data of the Türkiye women's volleyball team is AP: 32 times, CS: 32 times, LP: 17 times, and the total number of front-line attacks is 81; The data for backline attacks are AP: 5, CS: 7, and LP: 3, with a total of 15 backline attacks.

Table 4: Statistics of AP, CS, and LP in Italy vs Brazil of front-line and backline attack Championship final Italy VS Brazil

Playing Team: Italy vs Brazil Championship final									
Date: 7/17/2022									
The Winner: Italy 3-0									
Position	Front line attack			Total	Position	Backline attack			Total
	AP	CS	LP			AP	CS	LP	
4	17	14	2	33	5	0	0	0	0
3	13	1	0	14	6	2	2	0	4
2	16	12	5	33	1	3	3	4	10





Playing Team: Italy vs Brazil Championship final									
Date: 7/17/2022									
The Winner: Italy 3-0									
Total	46	27	7	80		5	5	4	14
Brazil 0-3									
Position	Front line attack			Total	Position	Backline attack			Total
	AP	CS	LP			AP	CS	LP	
4	14	18	7	39	5	0	0	1	1
3	7	4	0	11	6	2	3	4	9
2	12	12	4	28	1	5	3	2	10
Total	33	34	11	78		7	6	7	20

Table 4 shows that the result of the match between the Italian team and the Brazilian team is 3-0. This is the last game of the World Women's Volleyball League. After three games, the Brazilian team lost to the Italian team, winning second place, while the Italian team won the final victory and won the championship. The specific attack situation of this game is as follows:

1. The front-line attacks of the Italian team were AP: 46, CS: 27, and LP: 7, a total of 80; The backline attack is AP: 5, CS: 5, and LP: 4. The total number of backline attacks is 14.
2. The Brazilian team has a total of 78 front-line attacks, with AP: 33, CS: 34, and LP: 11 respectively; The backline attack is AP: 7, CS: 6, and LP: 7. The total number of backline attacks is 20.

Table 5: The total attacks statistics of the four teams

Competition ranking	Team name	Front line attack				Backline attack				Total number
		AP	CS	LP	Total	AP	CS	LP	Total	
1	Italy	86	64	16	166	15	11	6	32	198
2	Brazil	93	92	40	225	15	15	10	40	265
3	Serbia	100	83	33	216	6	8	7	21	237
4	Türkiye	71	68	31	170	8	10	8	26	196

Table 5 shows the total data of the front-line attack and backline attack of four teams, namely Italy, Brazil, Serbia, and Türkiye, from the semi-final to the final according to the final ranking order of the World Women's Volleyball League. The details are as follows:

1. The data of front-line attacks of the Italian team are AP: 86 times, CS: 64 times, and LP: 16 times, a total of 166 times; The data of backline attacks are AP: 15 times, CS: 11 times, and LP: 6 times, a total of 32 times; The total number of attacks in the two areas was 198.
2. The data of front-line attack of the Brazil team are AP: 93 times, CS: 92 times, and LP: 40 times, a total of 225 times; The data of backline attacks are AP: 15 times, CS: 15 times, and LP: 10 times, a total of 40 times; The total number of attacks in the two areas was 265.
3. The data of front-line attacks of the Serbian team are AP: 100 times, CS: 83 times, and LP: 33 times, totaling 216 times; The data of backline attacks are AP: 6 times, CS: 8 times, and LP: 7 times, a total of 21 times; The total number of attacks in the two areas was 237.

[137]

Citation:



Feng, Y., & Bangthamai, W., (2023). Notational Analysis in the Achievement of Back-line and Front-Line Attacking in the Fourth World Women's Volleyball League 2022. International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3), 131-142; DOI:

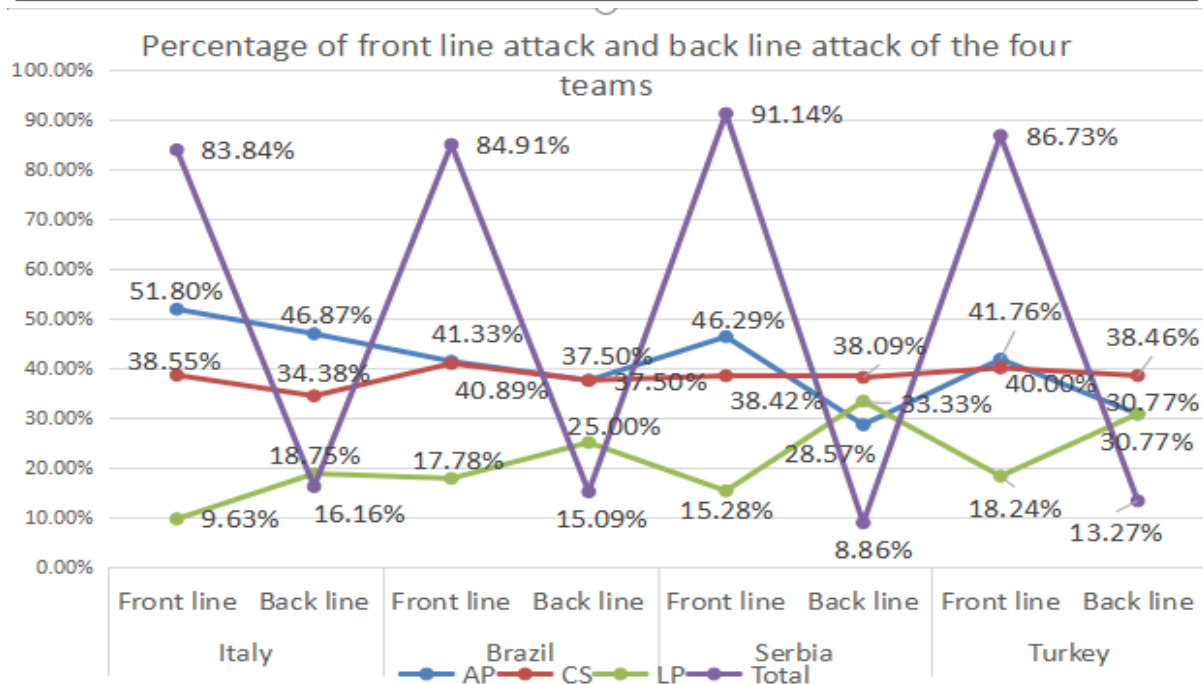
<https://doi.org/10.14456/jsasr.2023.41>



4. The data of the front-line attacks of the Türkiye team are AP: 71 times, CS: 68 times, and LP: 31 times, a total of 170 times; The data of backline attacks are AP: 8 times, CS: 10 times, and LP: 8 times, a total of 26 times; The total number of attacks in the two areas was 196.

Table 6: Percentage of front-line and backline attacks by four teams

Competition ranking	Team Name	%	AP	CS	LP	Total
1	Italy	Front line	51.80%	38.55%	9.63%	83.84%
		Back line	46.87%	34.38%	18.75%	16.16%
2	Brazil	Front line	41.33%	40.89%	17.78%	84.91%
		Back line	37.50%	37.50%	25.00%	15.09%
3	Serbia	Front line	46.29%	38.42%	15.28%	91.14%
		Back line	28.57%	38.09%	33.33%	8.86%
4	Turkey	Front line	41.76%	40.00%	18.24%	86.73%
		Back line	30.77%	38.46%	30.77%	13.27%



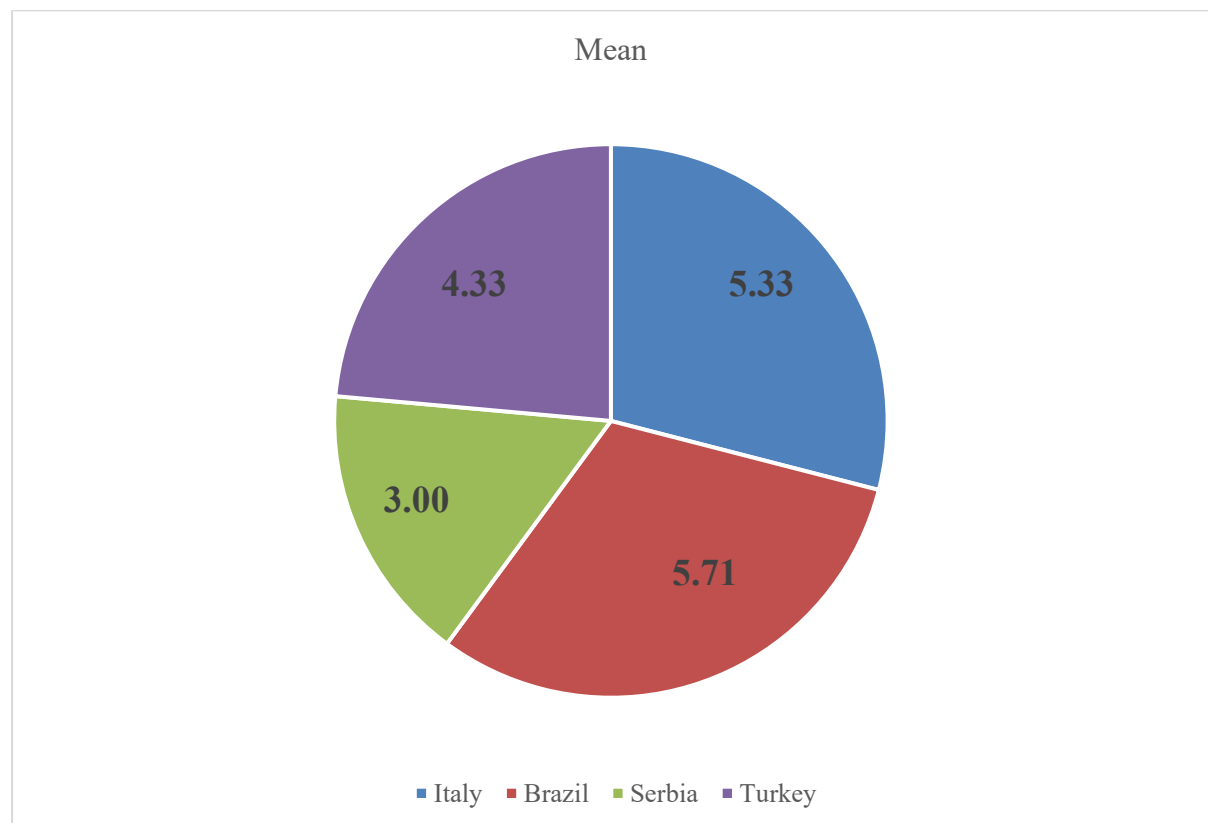
From Table 6, it can be seen that the front-line attack and backline attack of the four teams is arranged in the order of percentage. The percentage of front-line attacks of the Serbian team in the total number of attacks is 91.14%, and the other three teams are 86.73% of the Turkish team, 84.91% of the Brazilian team, and 83.84% of the Italian team. Among the percentage of backline attacks in total attacks, the Italian team ranked first at 16.16%, followed by the Brazilian team at 15.09%, the Türkiye team at 13.27%, and the Serbian team at 8.86%. From this, the Serbian team has the most attacks in the front line, while the Italian team has the most attacks in the backline.





Table 7: Average of the four teams' backline attacks, Average backline attack in a set

Team Name	Backline attack Total	Set	Mean
Italy	32	6	5.33
Brazil	40	7	5.71
Serbia	21	7	3.00
Türkiye	26	6	4.33



From Table 7, arranged in order of ranking, the average backline attack of the four teams per set is 5.33 for the Italian team, 5.71 for the Brazilian team, 3.00 for the Serbian team, and 4.33 for the Türkiye team.

Table 8: The position distribution of the backline attack of the four teams

Position	Italy	Brazil	Serbia	Türkiye	Total
5	0	2	2	0	4
6	9	20	9	8	46
1	23	17	10	18	68

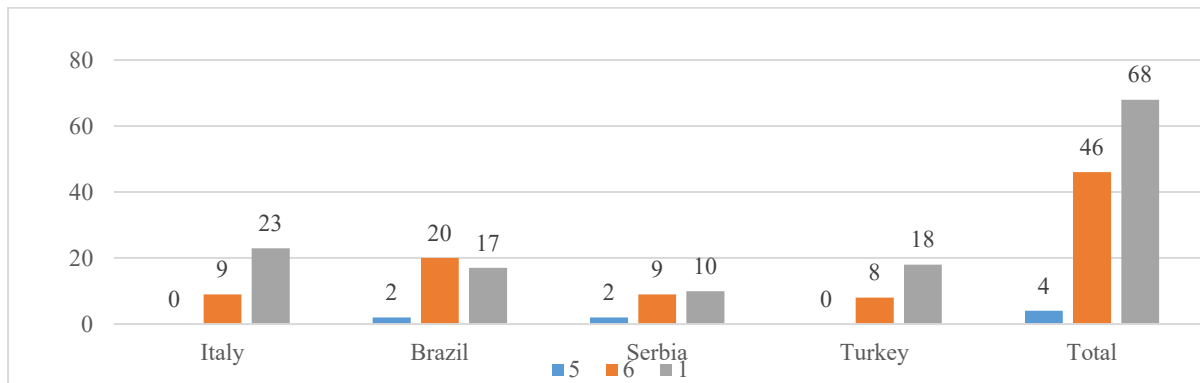


Table 8 shows that (1) In the backline attack, the attack number of the Italian team at position 5 is 0, that of the Brazilian team is 2, that of the Serbian team is 2, that of the Turkish team is 0, and that the total number of attacks is 4; (2) In the attack of the position 6, the Italian team has 9, the Brazilian team has 20, the Serbian team has 9, and the Turkish team has 8. The total number of attacks is 46.; (3) Among the attacks at position 1, the Italian team is 23, the Brazilian team is 17, the Serbian team is 10, and the Turkish team is 8. The total number of attacks is 68.

Discussion

We can believe by the statistical data analysis of four matches, it can be seen that the total number of attacks in the backline of the Italian team is not as much as that of the Brazilian team, mainly because the Brazilian team has more total matches than the Italian team; However, the Italian team has a higher proportion of total attack balls in the backline and direct scoring in the backline than the Brazilian team, and is also the highest team among the four teams. Therefore, the Italian team can win the first place in this competition. However, the Serbian team ranked third has a lower attack ratio and success rate in the backline than the Türkiye team ranked fourth. This may be because the Serbian team is the team with the most direct scores in the front-line attack, and its success rate is only second to the Italian team ranked first. This also explains why the Serbian team ranks higher than the Türkiye team. However, the Serbian team is far lower in terms of the percentage of backline attacks and the success rate of backline attacks than the Italian and Brazilian teams, indicating that the higher the percentage of backline attacks and the success rate, the higher the performance ranking of the teams. This is also consistent with the research content of scholars (Yun, J., 2020), who found that backline attack improves the drawbacks of traditional volleyball attack methods and expands the attack range of volleyball players by studying "the role of backline attack on the volleyball attack system"; Backline attack can confuse the opponent's blocking and defense, thereby improving attack efficiency and achieving even better results. The percentage difference between the front and back attack of the Italian team is relatively small, while the percentage difference between the front and back attack of the Serbian team is relatively large, indicating that the percentage difference between the front and back attack of teams ranking higher is smaller, which also indicates that back attack is also an important way of scoring in volleyball matches. If you want to achieve excellent performance, you should combine front and back attack tactics, and increase attack methods to improve the success rate of the attack. The backline attacks of the four teams are mainly concentrated in Position 1 and Position 6, and the number of attacks in Position 1 is generally more than that in Position 6. The more significant teams are the Italian and Türkiye teams, which may have a certain relationship with the players' personal ability and technical characteristics. The receiving position is a special position. When rotating to the front line, it is usually only in position 2 to attack, and when rotating to the backline, it is usually only in position 1 to attack. When the individual ability to receive positions in a team is more prominent, the attack opportunities will increase relatively. In all the games of the four teams, there was almost no attack at position 5 and there was a lack of tactical deployment (Cui, Q., 2020).

Conclusion

[140]

Citation:



Feng, Y., & Bangthamai, W., (2023). Notational Analysis in the Achievement of Back-line and Front-Line Attacking in the Fourth World Women's Volleyball League 2022. International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3), 131-142; DOI: <https://doi.org/10.14456/jsasr.2023.41>



On the above data, we can believe that the team with the more direct attack points scored by the backline players has a greater chance of winning the game and ranking higher in the game. In the two semi-final matches Brazil vs Serbia and Italy vs Türkiye, it was found that the Brazilian women's volleyball team and the Italian women's volleyball team that won the match scored more direct points in the backline attack than their opponents, and the teams with a higher percentage of backline attacks will rank higher in the game rankings. The Italian women's volleyball team has the highest success rate in front-line and backline attacks and the lowest error rate. In the competition, the AP success rates of the front and back attack of the Italian women's volleyball team are the highest, 51.80% and 46.87% respectively, while the LP error rates are the lowest, 9.63% and 18.75%, respectively. The higher the average number of attacks in the backline per inning, the higher the score ranking of the team. The Italian and Brazilian women's volleyball teams, ranked first and second, have significantly higher average values of backline attack per set than the third and fourth places.

Recommendations

1. Arrange training courses in schools to better apply rear row offense in teaching and training.
2. It is beneficial for volleyball players with short stature, who are less restricted by front-row blocking, has more offensive lines, and can make more use of back-row attacking.
3. It is beneficial for the elderly, and the rear row offense requires relatively low physical fitness requirements for older people, making it easier to complete.
4. In training, targeted increases in rear-row offensive training to improve the success rate of rear-row attacks.
5. According to the characteristics of the offensive players in the back row and the technical and tactical characteristics of the team, appropriately increase the number 5 offensive position.

Further recommendation

1. The sample size of this study is only four teams. During the research process, it was found that the number of backline attacks by each team is limited, and there may be a chance. It is possible to increase the sample size of the study in competitions of the same size for further research.
2. What are the factors that affect the attack success rate of backline players? Further research is needed.

Reference

- Costa, G.D.C.T., de Oliveira Castro, H., Freire, A.B., Evangelista, B.F., Pedrosa, G.F., Ugrinowitsch, H., & Praça, G.M. (2018). High level of Brazilian men's volleyball: characterization and difference of predictive factors of backline attack. *Motricidade*, 14(1), 58-65.
- Cui, Q., (2020). *Research on Backline Attack Application by Men's Volleyball Team of Hunan Normal University in CUA24 Top Match in 2018-2019 Season*. Doctoral dissertation: Hunan normal university.
- Drikos, S., Sotiropoulos, K., Gkreka, S., Tsakiri, M., & Barzouka, K. (2023). Variations in Attack Patterns between Female and Male outside hitters in Top-level Volleyball. *International Journal of Sports Science & Coaching*, 18(1), 245-256.
- Guo, S., (1995). A brief discussion on the reasons for the rise of the rear attack and the application of technology. *Journal of Qujing Normal University*. (5), 2.
- Nie, H., (2006). A Preliminary Study on the Fast Break Tactics System in the Backline of Volleyball. *Youth Sports*. (4), 15-15.
- Rocha, A.C.R., Freire, A.B., Martins, L.R., Maia, M.P., Guimarães, J.D.S., Ugrinowitsch, H., & Costa, G.D.C.T. (2019). Predictive factors of the attack efficacy: the case of the Brazilian women's Volleyball League champion team. *Revista Brasileira de Cineantropometria & Desempenho Humano*, 21. <https://doi.org/10.1590/1980-0037.2019v21e59383>
- Schmidt, B., (2015). *Volleyball: steps to success*. Human Kinetics.

[141]

Citation:



Feng, Y., & Bangthamai, W., (2023). Notational Analysis in the Achievement of Back-line and Front-Line Attacking in the Fourth World Women's Volleyball League 2022. *International Journal of Sociologies and Anthropologies Science Reviews (IJSASR)*, 3 (3), 131-142; DOI: <https://doi.org/10.14456/jsasr.2023.41>



- Shi, L., Yang, Q., Tan, M., & Nie, H., (2009). Analysis of the attack characteristics of the backline in the men's volleyball finals of the 2008 Beijing Olympic Games. *Journal of Yangtze University Natural Science Edition: Science and Technology Vol. 2*, 112-114.
- Xu, C., (2014). *The Effectiveness of Backline Attack in Modern Women's Volleyball*. New Course Learning (Part 2).
- Yuan, J., (2010). Research on the skills of the backcourt attack in volleyball matches. *QuFu Normal University*, (2), 122-124.
- Yun, J., (2020). The Role of Backline Attack in the Volleyball Offensive. *System Sports Fashion*. (7), 2
- Zhao, B., (2011). My opinion on the application of backline attack in college volleyball games. *The Road to Success*, (1), 60-61.
- Zhou, L., (2007). Analysis of the Characteristics and Application of Backline Attack in Modern Volleyball Competition. *Exam Weekly*. (39), 2.

