

COMPARATIVE ANALYSIS OF PERFORMANCE IN MEN VOLLEYBALL WINNER'S TEAM IN THE OLYMPICS 2020

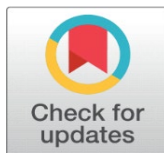
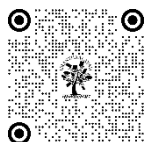
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ABSTRACT

This comparative analysis uses chi-square statistical analysis to evaluate and compare the performance of the Tokyo men's volleyball team in different matches played during the Tokyo Olympics 2020. The analysis thoroughly examines performance metrics collected from official game statistics, including service, passing, attacking, blocking, and defense. The data will be analyzed using chi-square tests to identify significant differences in the performance of the men's volleyball team across different matches. The study will also consider the impact of the opponent team's performance on the Tokyo team's performance. The findings of this analysis will provide valuable insights into the Tokyo men's volleyball team, highlighting areas for improvement and offering strategies for enhancing the overall team's performance. This study's results will benefit coaches and administrators in developing effective training programs and strategies for achieving success in men's volleyball at the international level.

Keywords: Performance analysis, Tokyo Olympics, Statistical Technique



1. INTRODUCTION

Performance analysis in volleyball skills typically involves using technology such as video analysis, GPS tracking, and sensor to collect data on various aspects of an athlete's performance. Coaches and athletes can then use this data to make informed decisions about training, strategy, and tactics to improve performance. The analysis itself aids in analyzing the opponent in the face setter's positioning and highlights the important location during the offensive phase (Harabagiu, 2021). On the other hand, whenever attackers obtained sets of very high quality, often even better, performing efficiency in the attack could be guaranteed because an attacker could spike the ball against a defensive block that was only partially or entirely made (Sattler et al., 2015). Setters should become more proficient at attacking and blocking during a game (Sattler et al., 2015). The efficacy of attacking appears to be dependent on the quality and adaptability of the setting (Inkinen et al., 2014). Receiving and blocking mistakes had the highest discriminating ability to predict match outcomes, but service points had a stronger association with match success (Peña & Casals, 2016). Teams incurred fewer risks by executing more jump-float serves than jump-spike serves with proper efficacy (Marcelino et al., 2011). Attack blunders specify a greater variation in the number of sets won (Maneiro et al., 2019). If the attack point is accurate in the counterattack or the side-out can be boosted, the likelihood of victory increases (Silva et al., 2014). Without any

variations in offensive organizations, the attacker was more proficient in attacking and neutralizing the opponent's counterattacks (Maneiro et al., 2019) serve as the initial element of defense since a successful serve moves the opposing team away from the net, allowing for superior block and defense organization (Stamm et al., 2016). Serve direction- the server determines the direction according to the serving area and the reception zone. Parallel- the service and reception areas are in a straight line, with directions corresponding to serves from 1 to 5, 6 to 6, and 5 to 1. Mid cross court- near the reception area from 1 to 6, 6 to 5, 6 to 1, and 5 to 6. Long cross-court from 1 to 1 and 5 to 5, moves far away from the reception zone (Gil-Arias et al., 2016).

2. METHODS

The number of services (attempt, success), the number of attacks (attempt, success), the range of blocks (attempt, success), the variety of digs (attempt), the wide variety of settings, and the number of receptions. The statistics can be used, throughout the recreation and its preparation, at some point of the exercise to help to enhance positive rotations or to enlarge the effectiveness of the sports of each player. The wide variety of variables used was pointed at the top of the opposition (each received factors and misplaced points) ratio of the complete variety of factors gained and lost, the whole ratio of units gained and lost, and the share of units won. The first team was once labeled the prevailing crew and in opposition to the trumping team. The Tokyo Olympic 2020 volleyball participated in 12 teams and performed 146 sets and 38 matches. And who received the opposition and second location group of factors and sports outcomes are compared. Also, information from the triumphing group and all the opposing groups used to be collected. And every group has a minimum of three fits, and most of the eight fits have been performed during the tournament. Each of these pinnacle two groups faces twice. We acquired records from the groups as 6 variables: attack, block, service, set, dig, and reception (attack success, attack attempt, block attempt, block success, service attempt, service success, dig attempt, set attempt, and reception attempt).

As in profile range and get the time that the group performed and that all information had been accumulated as of the case of the competition. The attempt supplies of the group that obtained them are in all sets. The attack success (441 points), the attack attempt (823 points), the block success (488 points), the block attempt (866), the service success (24), the service attempt (734), dig (198), set (354), and the reception (337). A whole of 8485 points has been collected. It additionally considers factors scored by using the opposing teams. The crew is undefeated in the whole of eight fits coming into the remaining stage and growing their crew points. The second-placed crew ROC additionally performed in a minimum of three matches and most of eight matches. In this group success and attempts are additionally 9 variables. The information accumulated with the aid of France was once divided into ROC group companies such facts are collected. All particulars of the ROC group and the set time factors scored in every set are collected. All suit particulars of the ROC group and the set time factors scored in every set are collected. Also, 387 points for attack success, attack attempt 783 points 75 points for block success, block attempt 426 points, 32 points for service success, 697 points for service attempt, 193 points for digging, 353 points for setting, and 307 points for reception, and whole factor of 3235 has been collected.

3. RESULTS

The primary purpose of the present investigation was to examine the performance of Olympic-level volleyball men's matches and the comparative analysis of winning and losing teams. Our results showed that the resulting overall performance will be assessed as good in attack success (12%), attack attempt (23%), block success (1%), block attempt (23%), service success (1%), service attempt (23), the dig (12%), and the reception (11%) in an excellent performance of France.

Performance Indicators	χ^2	df	Cramer's V
Attack Attempt	0.575	78	0.884
Attack Success	0.356	78	0.924
Block Attempt	0.227	78	0.952
Block Success	0.535	66	0.819
Service Attempt	0.286	66	0.866
Service Success	0.936	42	0.550
Reception	0.267	72	0.907
Setting	0.175	84	1.00
Dig	0.282	84	0.974

The overall team's attack attempt of chi-square value is greater than the table value it is insignificant, the attack success value is superior to the table value it is irrelevant, the block attempt value is superior to the table value it is irrelevant,

the block success value is superior to the table value it is irrelevant, the service attempt value is superior to the table value it is irrelevant, the service success value is inferior to the table value there is a significant, the dig attempt value is superior to the table value it is irrelevant, the set attempt value is superior to the table value it is irrelevant, and the reception attempt value is higher than the table value it is insignificant.

4. DISCUSSION

Against the USA, the France squad competed in its inaugural game. A total of one hour and twenty-five minutes was spent on the game. And both parties compare the allotted time or duration.

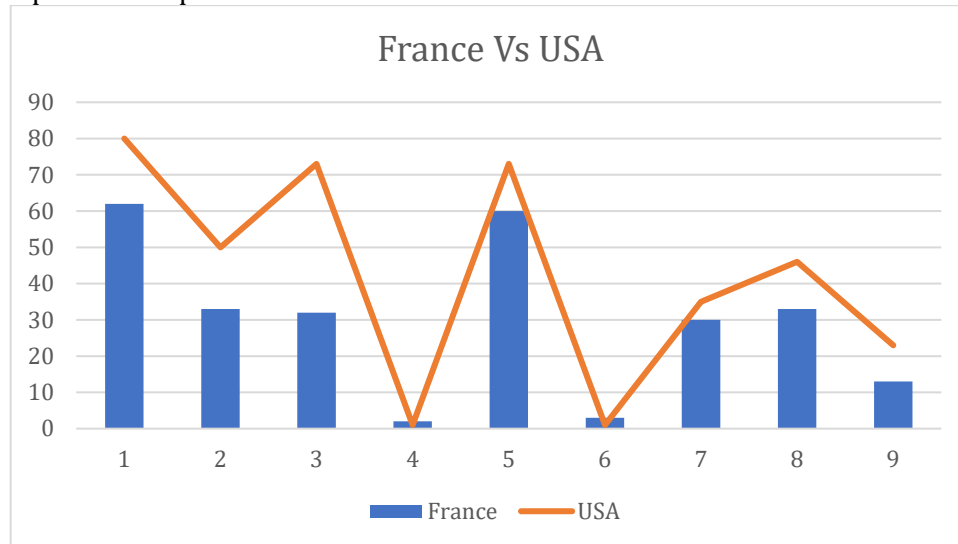


Fig.1: The development level of France Vs USA.

The first set lasted 28mins (25-18), the second set played 27mins (25-18), and the final set played 30mins (25-22). Team USA won the opening game (75-58). The first game's attack success points for three sets of (50-33), attack attempt points for (80-62), block success points for (15-12), block attempt points for (30-32), service success points (1-3), service attempt points for (73-60), dig points for (23-13), setting points for (46-33), and the reception points for (35-30) are compared with both teams. And the maximum number of success points required to win the game.

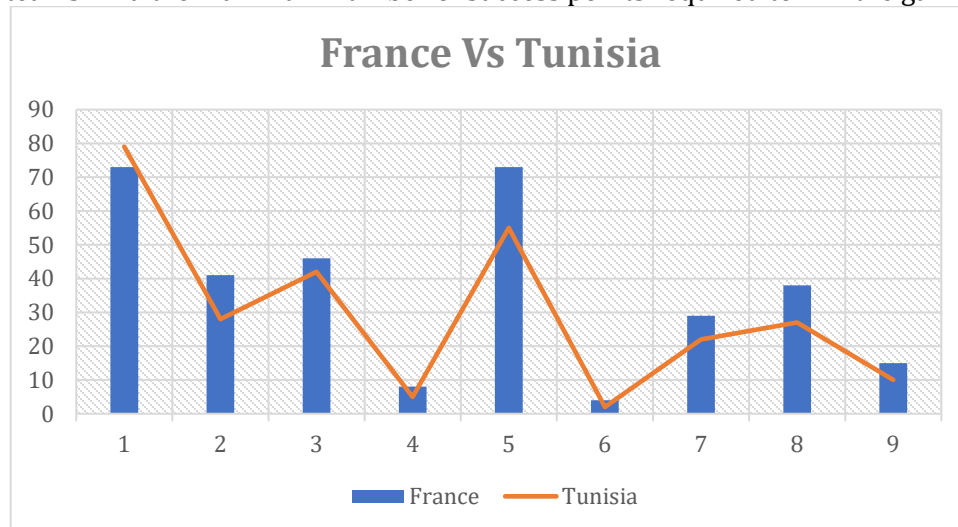


Fig.2: The development level of France Vs Tunisia.

The second match was played against the team France Vs Tunisia. France's squad won the second match (75-53). The 2nd match was played for 1hr 22mins, and the set duration is compared with both the teams. The 1st set played for 27mins (25-21), the 2nd set was 23mins (25-11), 3rd set was 32mins (25-21). The 2nd match attack success points for three sets of (41-28), attack attempt points (73-79), block success points (8-5), block attempt (46-42), service success (4-2), service attempt (73-55), dig points (15-10), setting points (38-27), and the reception points (29-22) are compared with both the teams.

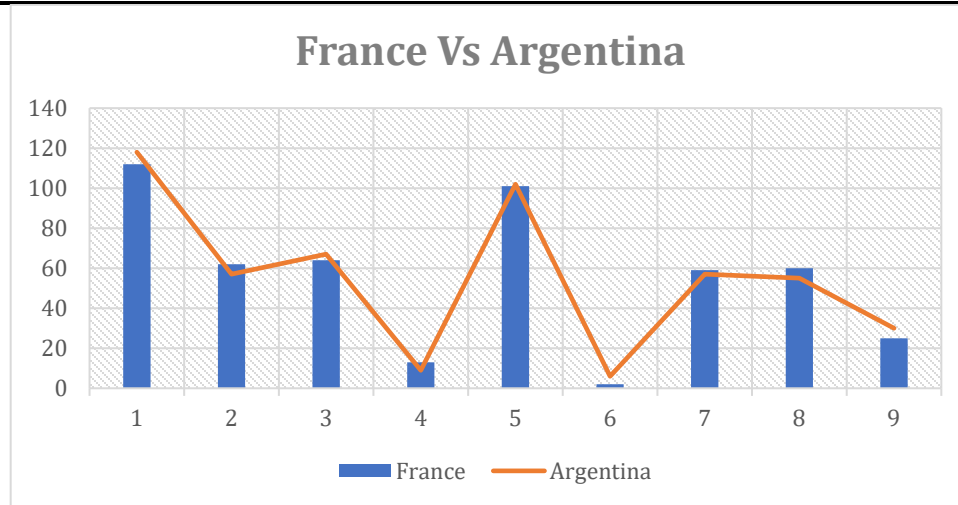


Fig.3: The development level of France Vs Argentina.

The third match played Argentina Vs France, the match duration was 2hr 09mins and the set time or set duration is compared both the teams. The 1st set played 28mins (23-25), the 2nd set 27mins (25-17), 3rd set is 29mins (25-20), the 4th set is 28mins (15-25), and the 5th set is 17mins (15-13). The team Argentina won the third match. The 3rd match attack success points (62-57), attack attempt (112-118), block success (13-9), block attempt (64-67), service success (4-2), service attempt (73-55), dig points (15-10), setting points (38-27), and the reception points (29-22) the points compared for five sets of this match.

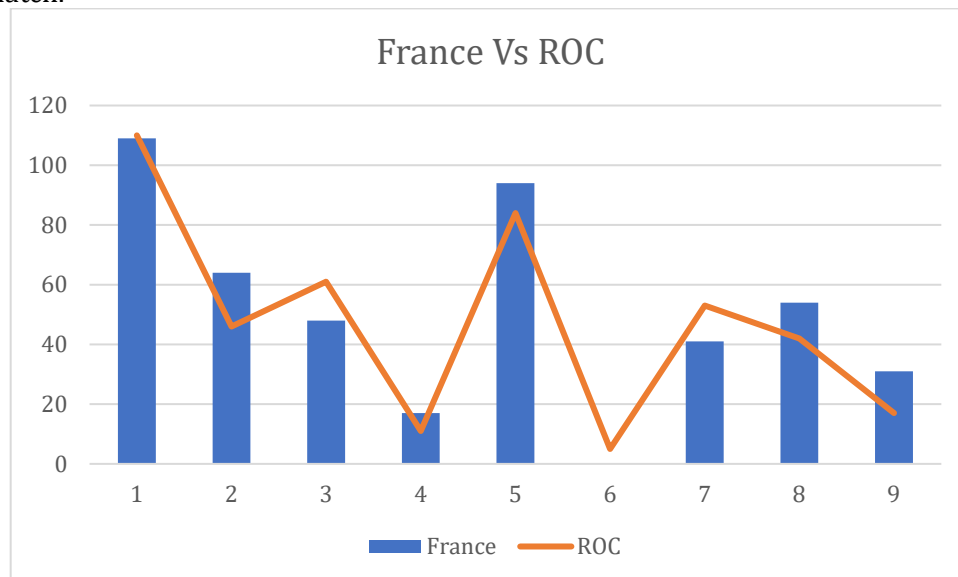


Fig.4: The development level of France Vs ROC.

The fourth match played ROC Vs France, the match duration is 1hr 49mins. Then the fourth match was won by France (83-95). The 1st set played for 26mins (21-25), 2nd set 27mins (25-20), the 3rd set is 26mins (17-25), and the 4th set was 30mins (20-25). The attack success points (46-64), attack attempt (110-109), block success (11-17), block attempt (61-48), service success (5-0), service attempt (84-94), dig points (17-31), the setting points (42-54), and the reception points (53-41) the points compared with both the teams.

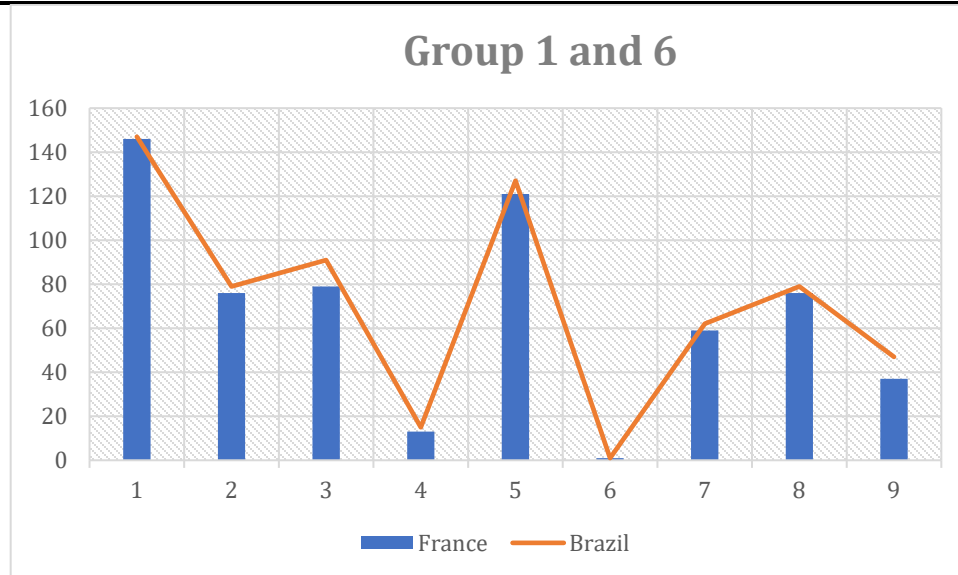


Fig.5: The development level of France Vs Brazil.

Brazil and France squared off in the 5th game. The game played 2hrs 38mins. And both teams compare the allotted time or period. A total of five sets were played, with the 1st set played 26mins 25-22, the 2nd set was 51mins 37-39, the 3rd set was 25mins 25-17, the 4th set was 29mins 20-25, and the 5th set was 27mins 20-18. Brazilian athletes won the fifth game 128-121. Attack success is 79-76 for the 5th games played four sets, attack attempt points are 147-146, block success points are 15-13, block attempt points are 91-79, service success points are 1-1, service attempt points are 127-121, dig points are 47-37, set points are 79-76, and the reception points are 62-59 for both teams.

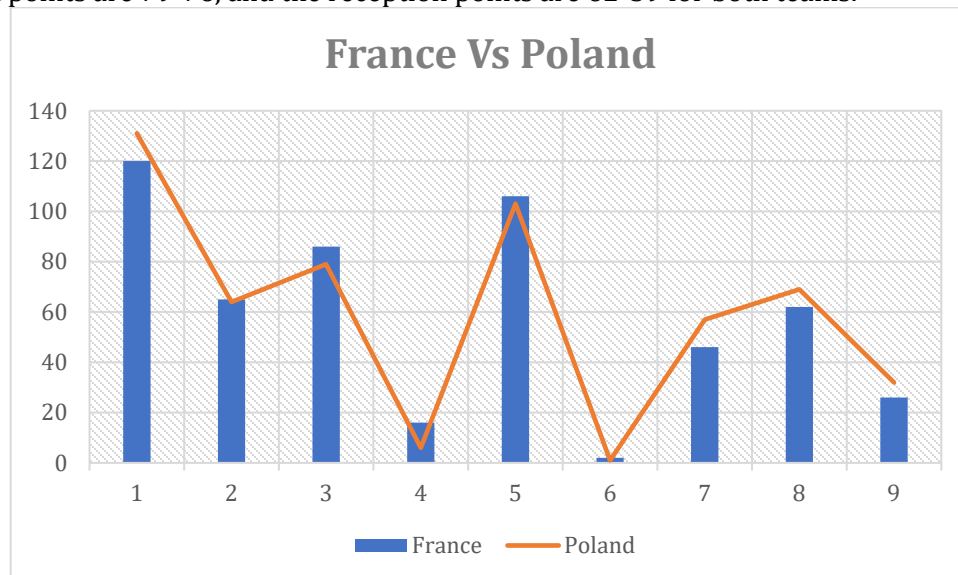


Fig.6: The development level of France Vs Poland.

Poland and France squared off in the sixth match. The game played for 2hr 13mins. And the set time or duration is compared with both teams. The 1st set played 30mins (25-21), the 2nd set played 28mins (22-25), the 3rd set is 30mins (25-21), the 4th set was 29mins (21-25), and the 5th set was 16mins (9-15). The sixth match was won by France (102-107). The 6th match attack success point for four sets of 64-65, attack attempt point 131-120, block success point 6-16, block attempt points 79-86, service success points 1-2, service attempt point 103-106, dig points 32-26, setting points 69-62, and the reception points 57-46 are compared with both teams.

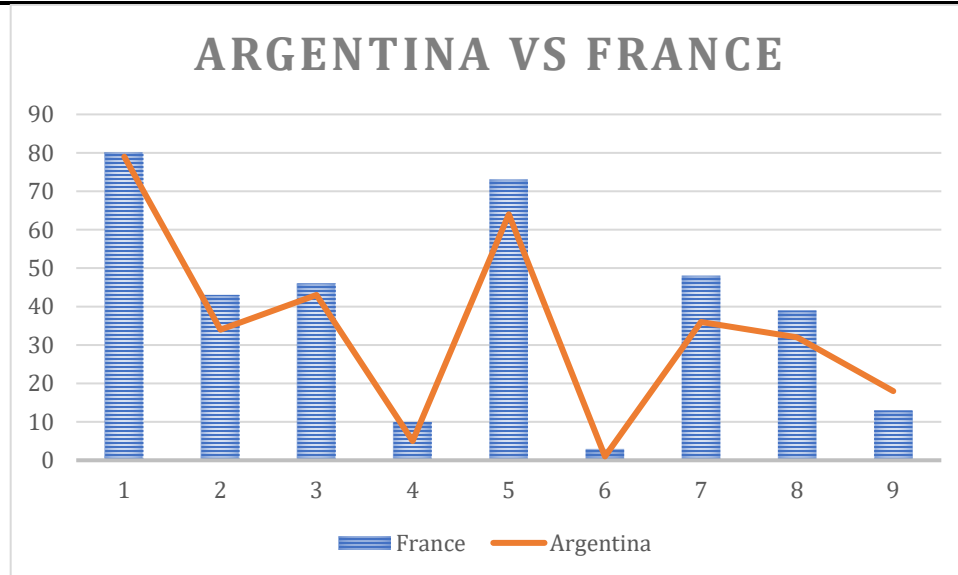


Fig.7: The development level of France Vs Argentina.

The seventh match played France Vs Argentina. And both the teams are faced twice, the 1st time played both the teams, the team Argentina won the match but again the second time played both teams, the team France won the match. The match was played for 1hr 15mins. And the set time or duration is compared with both teams. The 1st set played 27mins (25-22), the 2nd set was 29mins (25-19), and the 3rd set was 31mins (25-22). The seventh match was won by France (75-63). The seventh match attack success points for four sets of 43-34, attack attempt points 80-79, block success points 10-5, block attempt points 46-43, service success point 3-1, service attempt points 73-64, dig points 16-15, setting points 39-32, and the reception points 31-36 are compared with both the teams.

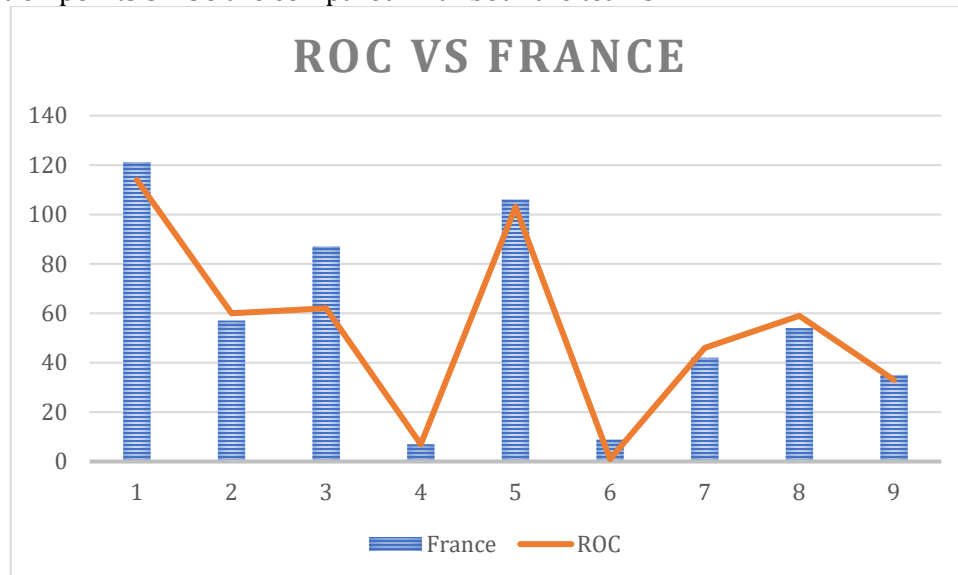


Fig.8: The development level of the ROC Vs France.

The final match played France Vs ROC. And both the teams are faced two times, and both matches team France won the match. Further, it's placed 1st position in the Olympic tournament. The match was played for 2hr 28mins. And the set time or set duration is compared with both teams. The 1st set played 29mins (21-25), the 2nd set played 27mins (25-17), the 3rd set is 30mins (21-25), the 4th set was 31mins (21-25), and the 5th set was 18mins (15-12). The final match was won by France (107-102). The final match attack success points for 5 sets of 57-60, attack attempt points 121-114, block success points 7-7, block attempt points 87-62, service success points 9-1, service attempt points 106-103, and dig points 35-33, and setting points 54-59, and the reception points 42-46 are compared with both teams.

5. CONCLUSIONS

The France team took first place in the Olympic event after playing eight matches, of which they won five and lost three, analysis has revealed that they made more efforts than they have been successful.

After looking at 12 teams (38 matches), it was determined that the team taking service showed chances versus side-over, successful service versus unsuccessful service, successful block versus unsuccessful block, successful attack versus unsuccessful attack, the attempt of dig, set, and the reception.

Additionally, it was seen that successful attacks (441) had a better chance of winning than those with unsuccessful attacks (823), successful blocks (488), unsuccessful blocks (866), and successful services (24).

ACKNOWLEDGMENT

The act of gathering and analyzing data to comprehend an athlete's strengths, weaknesses, and overall performance profiling in sports.

I suggest searching for reliable sports news, websites, academic databases, or specialized sports publications if you're seeking information concerning performance profiling in volleyball at the Tokyo Olympics 2020.

CONFLICT OF INTERESTS

None.

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