Differences in Service Position Against Service Accuracy in Volleyball

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Abstract

Purpose study. This study aims to find out the difference between serving for volleyball from behind position one, serving from behind position six, and serving from behind position five for UKM Volleyball UNMUS players, also to find out which is more effective between serving from behind position one, serving from behind position six, and serving from position five on top serving ability.

Materials and methods. The subjects of this study were 21 UNMUS volleyball players. Data collection uses tests, with instruments in the form of service accuracy tests carried out from the right, left and center positions. The t-value for service accuracy between the right position and the left position is 0.225 and the calculated significant value (Sig) is 0.824. The t value for service accuracy between the right position and the middle position is 0.846 and the calculated significant value (Sig) is 0.407. The t value for service accuracy between the left position and the middle position is 1.091 and the calculated significant value (Sig) is 0.288. The data analysis technique uses ANOVA analysis and t-test through the prerequisite test for normality and homogeneity.

Results. The results showed that there was no significant difference in the accuracy of the top serve from different positions, namely from the right, left and center positions. In detail, there is no significant difference in the accuracy of services performed from the right and left positions, the accuracy of services performed from the right and center positions, the accuracy of services performed from the left and center positions.

Conclusions. Research results conclude that No There is significant difference accuracy service performed from position left and position in the middle of UKM Musamus Merauke University Volleyball players.

Key words: Service, Volleyball, Accuracy, UKM

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Introduction

On life Now sport is need important for public in life daily (Sari & Asri, 2020). Man Now No can separated with sport, fine need For fitness physical, performance and recreation (Hiskya, Effect of Double Leg Bound Exercise on Explosive Capability of Leg Muscle Power in the Unmus Volleyball Men’s, 2019); (Dahrial, 2021). Sport moment This Already growing, fine sport with use a small ball nor with a big ball. Sports that use a small ball as well as the big ball in society wide already known even Now Already many competed. one branch sport above can give fitness physical, performance, and recreation is branch sport volleyball (Hiskya, Lewar, & Marlissa, 2022). Sports branch volleyball Alone can done or played inside room and outside room. volleyball is branch sports played by both team with objective cross the ball over the net.

Sport volleyball Already known in society Indonesia Good from layer public rural nor public urban and lots of competition even Now Already become A interesting spectacle For enjoyed (Azis, 2020), (Ningsih, Witarsyah, & Setiawan, 2020). Even now in society sport volleyball No only just For guard fitness physical and recreational (Maliki, 2017), but sport volleyball too reach achievement. one of the basic capital For reach performance peak in something branch sport is own talented seeds in accordance demands and specifics of each branch sport certain. On sports volleyball, talent seed is something important, because will make it easy in the process of training, so walk with good and ultimate target from coaching volleyball achieved (Pahrian & Esser, 2017). Performance the sport you want achieved as effort For reveal ability and potential athlete in this is achieved sport achievements, at the National and International levels can increase honor and dignity nation in the eyes of the world. Sport Indonesian volleyball already give good achievement at the Asia Landmarks level (SEAGAMES).

In game volleyball winning team A rally obtain One number (Rally Point System) (Sulistiadinata & Sulistiadinata, 2020). If medium team accept service win rally, will obtain One numbers and rights For do service and the players do shift One position in the same direction clockwork. Mastery technique base sport volleyball is one accompanying elements determine win or lose squad inside something match beside elements condition physically, tactically, and (Saputra, 2017) (Rahail, Bawawa, & Hiskya, 2023).

Service is start in sport volleyball For obtain number or score (Hiskya, 2019). Service technique in development his be one technique attack to against. Sport volleyball there is various type form technique service with variety advantages and disadvantages of each. decisive factor Good nope accuracy among them is strong coordination weak something movement. Coordination needed For align movement as well as efficiency power and effectiveness movement. Then strength effect on settings strong weak blow so that can about desired target. (Marsiyem, Destriana, & Pratama, 2018) If somebody servers don't have sufficient power, then will difficult For put the ball to desired target. Second factor the originate from in individual, so can controlled and trained. With thereby effort For reach mastery more skills Good can resolved. decisive factor Good nope accuracy among them is strong coordination weak something movement (Hiskya et al, 2022). Coordination needed For align movement as well as efficiency power and effectiveness movement (Sari & Guntur, 2017). (Wismiarti & Hermanzoni, 2020); (Isabela & Bakti, 2021) Then strength effect on settings strong weak blow so that can about desired target.

Service inside game volleyball is the main asset For get number or score (Utomo, 2020). Inside volleyball place service There is three place servicing, which will determine accuracy servers at the moment do service. Place service behind position one, place service behind position six and place service behind position five. Implementation good serve besides loud blow hopefully the ball can lead to the desired target. With set targets for implementation service so business For make it difficult reception of the ball served by the opponent will
reached. Opponents who have technique received less service OK, field field blank or far away from range is attainable target aim servers. Observation results obtained that player volleyball utilise service as attack First For get point or score. Player only do No with Really they think that the important thing is the ball can over the net. In volleyball, there are always player mistakes that result in points for the opposing team, such as imperfect service a. accuracy is ability For direct something to object in accordance with will or desire with goals certain Objective from study This is For know There is or nope difference between do service on sport volleyball from behind position one, service from behind position six, and serve from behind fifth position in UNMUS Volleyball Student Activity Unit athletes.

**Materials and methods**

**Study Participants.**

Research location is Universitas Musamus Volleyball Field. subject study is volleyball player who is team from Student activity units (UKM) Volleyball Unmus. Sample using a total sampling of 21 people.

**Study Organization.**

Study This is study quantitative with design study comparative. The method used in study This is method survey with approach test and measurement. Study This aim For know difference place position service to accuracy service on in sport volleyball. In study This have three variable free namely: Position service from behind position one, position service from behind position six, position service from behind position five. And have One variable bound that is accuracy service in sport volleyball. Research design is as following:

![Figure 1. Research Design](image)

Data collection techniques using test service.

![Figure 2. Test Service](image)

**Statistical Analysis**

Data analysis techniques using prerequisite tests and hypothesis testing. As for the tests carried out among others:

1. Data Normality Test

\[ p > \alpha 0.050 \]
2. Homogeneity Test Variance

$$F_{db\text{H}o;db\text{V}c} = \frac{SD^2_{bs}}{SD^2_{kc}}$$

3. Hypothesis Test

$$r = \frac{\sum D}{\sqrt{(N \sum D^2) - (\sum D)^2}}$$

$$N - 1$$

Results

This study consisted of only 1 variable, namely service accuracy, but in this study the data were grouped into three based on service position aspects, namely right position (behind position 1), left position (behind position 5), and middle position (behind position 6). Furthermore, to make research easier to do, the three positions are grouped separately and denoted X1 for the right position, X2 for the left position, and X3 for the middle position. The research data was obtained from 21 subjects, all of whom were UNMUS volleyball club players. In order to be clearer about the description of the research data, the following will describe each of them.

1. Accuracy Service from Position Right

Service accuracy from the right position was obtained from 21 research subjects. The results of the study obtained a maximum score of 62 and a minimum score of 34, an average of 44.38, while those who obtained a score below the average were 12 and above the average were 9. The standard deviation was 7.67, the mode was 40.00 and the median was 41.00. Then the frequency distribution is arranged by determining the number of class intervals (1+3.3log N), range (maximum value-minimum value), and class length. The following is the frequency distribution table obtained:

<table>
<thead>
<tr>
<th>No</th>
<th>Interval Class</th>
<th>Frequency</th>
<th>Frequency Relatively</th>
<th>Frequency cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>34 - 39</td>
<td>6</td>
<td>28.57%</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>40 - 45</td>
<td>6</td>
<td>28.57%</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>46 - 51</td>
<td>5</td>
<td>23.81%</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>52 - 57</td>
<td>3</td>
<td>14.29%</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>58 - 63</td>
<td>1</td>
<td>4.76%</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>100.00%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Accuracy Service from Left Position

The results of the study obtained a maximum score of 58 and a minimum score of 36, an average of 44.86, while those who obtained a score below the average were 11 and above the average were 10. The standard deviation was 7.367, the mode was 40.00 and the median was 44.00. To clarify the research data, it can be seen in the frequency distribution table below:
### Table 2. Distribution Frequency Accuracy Service from Left Position

<table>
<thead>
<tr>
<th>No</th>
<th>Interval Class</th>
<th>Frequency</th>
<th>Frequency Relatively</th>
<th>Frequency cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>35 - 39</td>
<td>6</td>
<td>28.57%</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>40 - 44</td>
<td>5</td>
<td>23.81%</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>45 - 49</td>
<td>4</td>
<td>19.05%</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>50 - 54</td>
<td>3</td>
<td>14.29%</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>55 - 59</td>
<td>3</td>
<td>14.29%</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

3. Accuracy Service from Middle Position

The results of the study obtained a maximum score of 70 and a minimum score of 29, an average of 42.19 was obtained, while those who obtained a score below the average were 11 and above the average were 10. The standard deviation was 8.73, the mode was 39.00 and the median was 41.00. To clarify the research data, it can be seen in the frequency distribution table below:

### Table 3. Distribution Frequency Accuracy Service Middle Position

<table>
<thead>
<tr>
<th>No</th>
<th>Interval Class</th>
<th>Frequency</th>
<th>Frequency Relatively</th>
<th>Frequency cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>29 - 37</td>
<td>6</td>
<td>28.57%</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>38 - 46</td>
<td>10</td>
<td>47.62%</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>47-55</td>
<td>4</td>
<td>19.05%</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>56 - 64</td>
<td>0</td>
<td>0.00%</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>65 - 73</td>
<td>1</td>
<td>4.76%</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

### A. Prerequisite Test Results

Before done analysis statistics, especially formerly assumption test is carried out or test requirements analysis which includes normality test and homogeneity test. Use of the normality test For know normal or nope distribution of data obtained whereas use of the homogeneity test For know is sample study originate from characteristic population homogeneous.

1. Normality Test

Testing normality using the Kolmogorov-Smirnov test. This test will test the hypothesis that the sample comes from a normally distributed population, to accept or reject the hypothesis by comparing the Asymp.Sig value (calculation significance) with 0.05. The criteria accept the hypothesis if Asymp.Sig is greater than 0.05, if it does not meet the criteria then the hypothesis is rejected.

### Table 4. Results of normality test calculations

<table>
<thead>
<tr>
<th>No</th>
<th>Group Variable</th>
<th>Kolmogorov-Smirnov Z</th>
<th>Asymp. Sig</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Accuracy service</td>
<td>0.890</td>
<td>0.407</td>
<td>Normal</td>
</tr>
</tbody>
</table>

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From the table on price Asymp. Sig (significant calculation) of variable accuracy service with aspect position right (back position 1) of 0.407, position left (back position 5) of 0.880, and position middle (back position 6) of 0.747. Because of the price Asymp. Sig from third position everything more big of 0.05 then stated hypothesis sample originate from normally distributed population is accepted. From this information, the variable data in this study can be analyzed using a parametric statistical approach.

2. Homogeneity Test
   Homogeneity test useful for test similarity between data group. Homogeneity test using the F test. In this test will test the hypothesis that the sample comes from a homogeneous population. To accept or reject the hypothesis by comparing prices significant calculation with 0.05. The criteria accept the hypothesis if the significant calculation is greater than 0.05, if it does not meet the criteria then the hypothesis is rejected. The following table shows the results of the homogeneity test:

<table>
<thead>
<tr>
<th>Levene Statistics</th>
<th>(F)</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.028</td>
<td>2</td>
<td>60</td>
<td>.972</td>
</tr>
</tbody>
</table>

From the calculation results, the calculated F value is 0.028 with a significant calculation value of 0.972. because the significant value of the calculation is greater than 0.05 (Sig>0.05), the hypothesis that the sample variance comes from a homogeneous population is accepted. Thus it can be concluded that the population variance in this study is homogeneous.

B. Hypothesis Testing Results
   Testing hypothesis done for test is the proposed hypothesis Correct or no. In study This will test hypothesis No There is difference accuracy service performed from different position. Position service to research This shared into 3 positions, position right, left and center, so in study This besides test difference from third position service will too test difference accuracy service from each position service.

1. ANOVA test
   Test it used for test hypothesis that No There is difference from third group, that is accuracy service from position right, left and center. As for the criteria for reject or accept hypothesis is with compare price significant calculation with 0.05. The criteria is accept hypothesis If significant calculation more big from 0.05. Results of ANOVA analysis for know is there is difference between third data group can seen in the table following:
Table 6. Summary of ANOVA Analysis Results

<table>
<thead>
<tr>
<th>Accuracy Service</th>
<th>N</th>
<th>Average</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position right (1)</td>
<td>21</td>
<td>44.38</td>
<td>0.673</td>
<td>0.541</td>
</tr>
<tr>
<td>Position (5)</td>
<td>21</td>
<td>44.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position (6)</td>
<td>21</td>
<td>42.19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the table above can is known that F count of 0.673, with mark significant calculation of 0.541. It turns out price significant more big from 0.05 (Sig>0.05), so stated hypothesis No there is difference accuracy service performed from different positions accepted.

2. t test (t test)

Test it used For test hypothesis No There is difference from two groups or between group, that is accuracy service from position right with position left, position right with position center, and position left with position middle. As for the criteria For reject or accept hypothesis is with significant calculation (Sig) with 0.05. The criteria is accept hypothesis if price Sig more big of 0.05 (Sig > 0.05). The results of the t test analysis for know is there is difference between second data group can seen in the table following:

Table 7. Summary of Analysis Results t test

<table>
<thead>
<tr>
<th>Accuracy Service</th>
<th>Position right (1)</th>
<th>Position (5)</th>
<th>Position Tough (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position right (1)</td>
<td>_</td>
<td>t(-0.225)</td>
<td>p(0.824)</td>
</tr>
<tr>
<td>Position (5)</td>
<td>t(-0.225)</td>
<td>_</td>
<td>p(0.824)</td>
</tr>
<tr>
<td>Position (6)</td>
<td>t(0.846)</td>
<td>t(1.091)</td>
<td>_</td>
</tr>
</tbody>
</table>

Based on t test table above can so can concluded:

1. t value for accuracy service between position right with position left of 0.225 and value significant calculation (Sig) of 0.824. It turns out mark Significant calculation more big of 0.05 (Sig > 0.05). With thereby stated hypothesis No There is significant difference from two groups accepted, so can concluded that No There is significant difference accuracy service performed from position right and position left.

2. t value for accuracy service between position right with position middle of 0.846 and value significant calculation (Sig) of 0.407. It turns out mark Significant calculation more big of 0.05 (Sig > 0.05). With thereby stated hypothesis No There is significant difference from two groups accepted, so can concluded that No There is significant difference accuracy service performed from position right and position middle.

3. t value for accuracy service between position left with position middle of 1.091 and value significant calculation (Sig) of 0.288. It turns out mark Significant calculation more big of 0.05 (Sig > 0.05). With thereby stated hypothesis No There is difference significant from two groups accepted so can concluded that No There is significant difference accuracy service performed from position left and position middle.
Discussion

Based on testing hypothesis, then discussion in study This can outlined as following:

The ANOVA test shows that No there is difference accuracy service performed from different positions, between position right, left and center. Whereas based on t-test results obtain results that No there is difference accuracy service performed from position right and left, no there is difference accuracy service performed from position right and center, as well No there is difference accuracy service performed from position left and center.

The magnitude average accuracy service performed from position right is 44.38 with standard deviation 7.67, mean accuracy service performed from position left is 44.86 with standard deviation 7.37, and mean accuracy service performed from position middle of 42.19 with standard deviation 8.73. Notice mark average results research, it turns out magnitude average accuracy service performed from position the left is largest compared to the position right and center. On standard deviation, magnitude mark standard deviation accuracy service performed from position the left is also the smallest than position right and center. It means service performed from position left have level best proven accuracy with mark average highest, as well have level proven best stability with standard smallest deviation.

Research results on testing hypothesis show that from third position service No there is significant difference level accuracy the service. Service is initial capital in A game volleyball, so service performed must right so alwan difficulty returns the ball or make attack. On research this, researcher differentiate accuracy service from position right, left and center, and turns result No there is significant difference from third position That Good in a manner whole nor by each position. Service from position right no lost good with accuracy service from position left and position middle, precision service position neither did the left lost good with accuracy service position right and center, as well accuracy service from position middle No lost good with accuracy service from position right and left.

Testing hypothesis mention No there is significant difference, however here there is interesting thing, the bottom line mark there is difference mark average and standard deviation from accuracy service based third position service. Average value accuracy service from position the highest left, and standard the smallest deviation. That It means service from position left have level accuracy the most stable service, so based study This should when do service take position service behind position 5 or position left.

Conclusions

Based on results study with data analysis and testing hypothesis, then can pulled conclusion t value for accuracy service between position right with position left of 0.225 and value significant calculation (Sig) of 0.824, value calculation more big of 0.05 (Sig > 0.05). The stated hypothesis No There is significant difference from two groups accepted. t value for accuracy service between position right with position middle of 0.846 and value significant calculation (Sig) of 0.407 value Significant more big of 0.05 (Sig > 0.05) no There is significant difference from two groups accepted, so can concluded that No There is significant difference accuracy service performed from position right and position middle. t value for accuracy service between position left with position middle of 1.091 and value significant calculation (Sig ) of 0.288, value calculation more big of 0.05 (Sig > 0.05). With thereby stated hypothesis No There is significant difference from two groups accepted, so can concluded that No There is significant difference accuracy service performed from position left and position middle.
Acknowledgment

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Conflict of interests

There are no conflicts of interest in this research.

References


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