

Correlations Analysis of Hand Eye Coordination and Agility Athlete Cricket Bekasi City

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Abstract

This study aims to find out, "Correlations Analysis of Hand Eye Coordination and Agility Athlete Cricket Bekasi City". This research was carried out at the Islamic University of 45 Bekasi by using a sampling technique that is total sampling with all 14 male athletes. The time of the study was completed in 2 months with data collection March 21, 2018. Methods of data collection using tests and documentation. The research method used is descriptive method, with the following research steps: (1) population, (2) samples, (3) data collection, (4) data processing and analysis. while the population in this study were all male cricket athletes in the city of Bekasi. The sampling technique used is total sampling. Based on the results of statistical calculations obtained results, partial eye-hand coordination has an influence on fielding skills in the cricket male athlete in Bekasi City, with a correlation coefficient of 4.15, a value of 't' 2.18 and a significant at alpha 5% while agility towards fielding skills in the cricket male athlete in the city of Bekasi, with an correlation efficiency value of 8.60, " t " 2.18 and alpha significance 5%. Simultaneously (together) hand eye coordination and agility give a significant relationship to the increase in fielding skills in Bekasi cricket male athletes as shown by the F ratio of 25.87 and significant at 5% alpha.

Keywords : Analysis, hand eye coordination, agility, cricket

1. Introduction

Judging from the increasing development from time to time to produce something new that has sprung up, this new thing can have a negative impact that can also have a positive impact on the recipient. In part, each of these new things is an attraction that aims to attract someone's interest in knowing about and how it is in depth. Like taking the example that the new thing can be seen from the field of sports, science and technology (Science and Technology) where it has the creation of each new thing that aims to attract sympathetic to follow and explore it.

The development of the era is directly proportional to the development of science and technology that is increasingly sophisticated and powerful, which allows other people to easily access everything they want. Here can be seen from the emergence of the internet as a means of connecting the location, can find out what developments occur anywhere because information obtained from the internet is very fast to be shared and accepted by the public because the internet is a window of the world.

In addition, the many conveniences that are gained from the growing age have resulted in the entry of diversity, especially in the field of sports. In the field of sports many types include games and sports, development activities, gymnastic activities, rhythmic activities, water activities. Games and sports include athletics, basketball, soccer, table tennis, martial arts, cricket and other activities.

Cricket is from England, in England this game is very popular besides other games such as basketball, softball, baseball, and so on. Cricket is a team game which consists of several match numbers, such as: number 20 (twenty), number 6 (six), and number 8 (eight). From each number that is contested has the weight of the number of different players. In the match number 20 (twenty) consisting of 11 players, the number 6 (six) number consists of 6 players, and the number 8 (eight) consists of 8 players. As a team game, cricket is a game performed on an oval-shaped grassy field that does not have a wide field size, but has a circle boundary which is bordered by ropes / flags and in the middle of a circle there is a solid flat place called Pitch, which is used to hit ball and membowling ball, length 20.12 meters, 2.64 meters wide and both ends of the pitch are planted stump, this stump is the same as the goal that must be protected by the bat. The standing place is limited by a line called Popping Crease and the boundary for planting stump is called Bowling Crease, according to Pont (2010).

Indonesia is inseparable from the influx of outside influences which resulted in the introduction of little by little cricket sports among the people, especially sports activists in Indonesia. In order to promote cricket to all regions, the formation of administrators in each region was carried out. In addition, a cricket community level student was also formed to channel skills and skills to the achievement path, according to Aziz Syamssudin (2006:5).

The cricket community at Islamic University 45 Bekasi is one of the institutions and fostering student talent in cricket sports. In cricket sports have fundamental techniques including punches, catches, and throws. To become a professional athlete at the student level requires a relatively long time, because in cricket sports requires deep mastery of the techniques found in this sport.

Fielding is one of the key techniques in this sport, where this fielding technique is by capturing the ball from a batsman and returning the ball to the bowler or wicket keeper correctly and quickly. Catch the ball here in a muted way to reduce impact contact and pain when receiving the ball. The weaknesses that are commonly found are usually lack of concentration and rapid eye coordination in seeing the ball coming. Often, athletes feel shocked when the ball comes with an uncertain ball speed. This can make the opposing team easily get as many run (points) as possible. Based on the above background, the problems that the researchers formulated were "Relationship Between Eye-Hand Coordination and Agility towards Fielding Skills in the Bekasi City Cricket Men Athlete".

2. Research methods

In a study the use of the method used must be appropriate and lead to the purpose of the study and can be scientifically accounted for in accordance with the applicable rules, so that the research can be obtained according to the expected goals.

There are various methods that can be used in research but must be able to choose the right and appropriate method. The success of a research does not merely lie in the good and bad of a method used, but the use of research methods must be in accordance with the problems formulated and the objectives of the study.

The research method used in this study is the Correlation method. About the correlation method explained by Feekel and Wallen (2008: 328) correlation is a study to determine the relationship and level of relationship between two or more variables without any attempt to influence these variables so that they cannot manipulate variables.

According to suharsimi arikunto (2010: 163) Correlation research is research that wants to see the relationship of two variables.

According to mia kusumawati (2015: 85) correlation research has three important characteristics for researchers who want to use it. The three characters are as follows

- The researcher correlates precisely if the variables are complex and the researcher is not able to manipulate and control variables as in the experiment research.

- Allow variables to be measured intensively in a real environment. The test used is to use the source widiastruti (2015:141) and ismaryati (2006:54) namely test is the power arm eye hand coordination test, throw a tennis ball catch and agility.

3. Result And Discussion

To prove whether there is a correlation between eye-hand coordination and agility to fielding skills by analyzing the collected data, the authors use statistics.

The first step is taken by looking for the average and standard deviation of the three research variables with the results of the calculation as follows:

Table 1
Average Calculation Results and Standard Deviation

Variable	$\sum X$	\bar{X}	S	S^2
Hand Eye Coordination (X_1)	182	13	1,4	1,96
Agility (X_2)	275,8	19,7	0,96	0,921
Fielding Skills (Y)	181	12,93	1,48	2,19

From table 1 shows to find out the distribution is normal or not, the author uses the Lilifors normality test formula. The results of normality testers are as follows:

Table 2
Normality Test Calculation Results

Variabel	L_o Count	L_o tabel	Keterangan
Hand Eye Coordination (X_1)	0,1812	0,227	Normal
Agility (X_2)	0,1209	0,227	Normal
Fielding Skills (Y)	0,1557	0,227	Normal

From table 2 shows it can be seen that the results of calculations using the critical value L for the liliefors test with a real level (α) = 0.05, n = 14 and the L value of 0.227 can be described as follows: value L_o calculate eye-hand coordination = 0, 1812, the value of L_o calculates Agility = 0.1209, and the value of L_o Fileding Skill = 0.1557. The three values of L_o count from the three variables show a value that is smaller than L table which is equal to 0.227. Thus, all variables can be said to be normally distributed (L_o count < L table).

Table 3
Results of Correlation Calculation Between Variables (X_1) (X_2) (Y) and (X_1) (X_2)

Component	R	%
Hand-Eye Coordination (X_1) with fielding skill results (Y)	0,77	77%
Agility (X_2) with fielding skill results (Y)	0,93	93%
Hand-Eye Coordination (X_1) with Agility (X_2)	0,85	85%

Validity test

From table 3 shows instrument validity is the ability of research instruments to measure what should be measured. The researcher consulted with a number of expert judgments (Test experts) regarding the measuring instruments made by the researcher. According to the experts, a measuring instrument made by researchers could be applied to his research to look at an athlete's technique when doing fielding.

In this study, the authors tested the validity of the fielding skills test for groups outside the sample (non-sample), namely the male cricket athlete in the city of Bogor. The results of the research testing the validity of this fielding skill test were carried out 2 times to the non-sample group, namely the Bogor cricket male athlete. The results of the calculation of the reliability test are as follows:

Table 4
Results of Correlation Coefficient Reliability Test Calculation

Component	$R_{1/2, 1/2}$	R_{ii}	criteria
Fielding Skill	0,64	0,78	High

From table 4 shows it can be concluded that the reliability test of the fielding skills test is obtained by $R_{1/2, 1/2} = 0.64$. After calculating the reliability coefficient correlation all tests were obtained by $R_{ii} = 0.78$.

Hypothesis testing

To find out the significance of the correlation coefficient between eye-hand coordination and agility on meterampial fielding. As data processing, the next test is significant correlation test as stated in the following table;

Table 5
Significant Test Tests Between Variables

Komponen	T count	T table	Criteria
Hand-eye coordination (X_1) with result fielding skill (Y)	4,15	2,18	significant
Agility (X_2) with result fielding skill (Y)	8,60	2,18	significant
Hand-eye coordination (X_1) with Agility(X_2)	5,56	2,18	significant

From table 5 shows that eye-hand coordination relationship with fielding skills has a calculated T value of 4.15 and T table with $dk = 12$ is obtained 2.18. Because the calculated value = $4.15 > T \text{ table} = 2.18$, the hypothesis is rejected. This means eye-hand coordination provides a significant relationship to the results of fielding skills.

The relationship of agility to the results of fielding skills has a calculated T value of 8.60 and a T table value with $dk = 12$ obtained 2.18. Because the value of T count = $8.60 > T \text{ table} = 2.18$, the hypothesis is rejected. this means that agility provides a significant relationship to the results of fielding skills.

The relationship of eye-hand coordination and agility to the results of fielding skills has T count = 5.56 and T table values with $dk = 12$ obtained 2.18. Because the value of T count = $5.56 > T \text{ table} = 2.18$, the hypothesis is rejected. This means eye-hand coordination and agility provide a significant relationship to the results of fielding skills.

Then testing the significant multiple correlation test hypotheses with the results listed in the following table:

Table 6
Calculation results of Multiple Correlation Tests

Component	Koefisien Multiple (R^2)	F count	F table	conclusion
Hand-eye Coordination (X_1) and agility (X_2) to result fielding skill (Y)	0, 91	25,87	3,98	Significant

From table 6 shows it can be concluded that multiple correlation coefficients on eye-hand coordination and agility to fielding skills obtained $R^2 = 0.91$. After calculating multiple correlations obtained F count = 25.87. Then carried out the F table test (α) = 0.05 with $dk \ 14-2-1 = 11$ obtained F table = 3.98, the multiple correlation coefficient was declared significant. This means that eye-hand coordination and agility influence the results of fielding skills.

4. Conclusion

Based on data analysis and discussion, the results of this study can be summarized as follows:

1. There is a relationship between eye-hand coordination on fielding skills which has a calculated T value of 4.15 and a T table value with $dk = 12$ obtained 2.18. Because $T \text{ count} = 4.15 > T \text{ table} = 2.18$, then the hypothesis is rejected. This means eye-hand coordination provides a significant relationship to the results of fielding skills.
2. There is a relationship between agility to fielding skills that have T count of 8.60 and T table values with $dk = 12$ obtained 2.18. Because T count is $8.60 > T \text{ table} = 2.18$, then the hypothesis is rejected. This means that agility provides a significant relationship to fielding skills.
3. There is a relationship between eye-hand coordination and agility to fielding skills obtained $R^2 = 0.91$. After calculating multiple correlations obtained F count 25.87. Then test F table (α) = 0.05 with $dk \ 14-2-1 = 11$ obtained F

table = 3.98. Thus, the calculated $F_{25.87} > F_{Table} = 3.98$, the multiple correlation coefficient is also stated to be significant. This means that eye-hand coordination and agility influence the results of fielding skills.

References:

- Kusumawati, Mia. Penelitian Pendidikan Penjas. Alfabeta. Bandung. 2015.
Widiastuti. Tes dan Pengukuran Olahraga. PT Rajagrafindo Persada. Jakarta. 2011
Arikunto, Suharsimi. Prosedur Penelitian Suatu Pendekatan Praktik Rineka Cipta. Jakarta. 2010
Ismaryati. Tes Dan Pengukuran Olahraga. Sebelas Maret University Press. Surakarta 2006
Syamssuddin, Aziz. Pengantar Olahraga Cricket. Indonesian Cricket Foundation. Jakarta. 2006
Pont, Ian. Coaching Youth Cricket. Human Kinetics, Inc. 2010

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