

## STRENGTH CONTRIBUTION LEG MUSCLE, EXPLOSIVE POWER ARM AND BACK TO THE ABILITY FLEXIBILITY TOGOK DINGS KAYANG GULAT GULAT SULAWESI ATHLETES IN SOUTH

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### ABSTRACT

JUHANIS, 2013. Contribution Limbs Muscle Strength , Explosive Power arm and flexibility Rear Togok against dings ability of Kayang Wrestling Athlete Wrestling at South Sulawesi. *Independent Research*. Faculty of Sport Sciences, State University of Makassar.

This study aimed to determine : (1) Is there a leg muscle strength contribute to the ability of an athlete slam wrestling of Wrestling kayang in South Sulawesi ; (2) Is there a contribution to the explosive power arm wrestling ability kayang dings in South Sulawesi Wrestling athletes , (3) Is no contribution flexibility togok back against dings kayang wrestling ability of athletes of wrestling in South Sulawesi. (4) Is there a contribution of leg muscle strength, explosive power and flexibility togok arm back against dings kayang wrestling ability of Wrestling of athletes in South Sulawesi.

It's population is around Wrestling athletes in South Sulawesi . The sample used was 40 male athlete. Sampling technique is the total sampling technique. The data analysis technique used is descriptive analysis, analysis of the Pearson product moment correlation coefficient ( $r$ ) , regression analysis and correlation analysis of double ( $R$ ) via the SPSS 19 program at the significant level  $\alpha = 0.05$ .

The results showed that: 1). There is a significant contribution to the ability of leg muscle strength dings kayang Wrestling athlete in South Sulawesi, with  $r$  values of 0.733 ( $Pvalue < \alpha 0.05$ ) with a contribution of 53.70 % ; 2). There's significant contribution eof xplosive power arm wrestling ability kayang dings in South Sulawesi wrestling athletes, with  $r$  values of 0.724 ( $Pvalue < \alpha 0.05$ ) with a contribution of 52.40 % ; 3). There is a significant contribution to the ability of flexibility rear togok dings on the wrestling kayang of Wrestling athlete of South Sulawesi , with  $r$  values of 0.738 ( $Pvalue < \alpha 0.05$ ) with a contribution of 54.40 % , (4) There is a significant contribution limb muscle strength , explosive power and flexibility togok arm back together on the ability of kickback kayang wrestling wrestling athlete of South Sulawesi , with a value of  $R_0$  0.848 ( $Pvalue < \alpha 0.05$ ) with a contribution of 71.90 % .

## **A. Library Studies**

Literature review is a frame of reference that form the basis for research. Thus, this section will discuss the concepts related to the research to be carried out .

### **1 . WRESTLING**

Wrestling is a martial sport that focuses on techniques dings, rolls and locks the opponent. This sport is one of the oldest in the world. Existed since ancient Greece where at that time, was born an Olympic Event that was first held and contested sports besides wrestling match long jump, javelin, sprinting and discus throwing.

Quality sport of wrestling is very dependent on the mastery of basic techniques. Sport to master the basic techniques properly will be showing the game skillfully. This can be seen in such movements : roll (*gutwrench*), poke (*nelson*), slam (*throw*), freeing themselves from the control of the opponent (*reversal*), liberation (*escave*), and lockdown techniques. In the sport of wrestling technique and physical ability, a very important role and determines to perform slam technique (*throw*). Therefore, the wrestler who has the basic techniques and good dings techniques have a greater opportunity to win a game.

Implementation of the technique of motion patterns kayang dings in the sport of wrestling consists of several movements, namely: prefix or pedestal, strength, balance and flexibility. To support the implementation of kayang dings, it must first understand the parts and be able to control the movement of the body while moving, including control exertion. Value engineering for dings kayang is 5 (five) and is the highest in the wrestling match, in which the values that exist in the sport of wrestling , which is 5 (five), 3 (three), 2 (two), and a value of 1 (one). Besides that, a victory by unanimous decision is generally caused by kickback kayang like that are often encountered in a wrestling match.

If you look at the elements and supporting factors in winning a wrestling match in the sports mentioned above pretty much, so in this study focused only limited to the ability kayang dings .

#### **a. Lockdown**

Contribution lockdown techniques in the sport of wrestling , especially for the collection of values and techniques with a unanimous victory. Lockdown is a technique that uses the movement of considerable power. To be able to perform techniques properly lock, then the required physical elements such as strength, speed and agility. Lockdown techniques are also frequently encountered in wrestling matches .

#### **b . Rolls**

Roll technique is one way to obtain the value of the techniques of the sport of wrestling, which roll technique is often used in 2 (two) the style, free style and style grigo. In this roll techniques, often in combination between arm strength and explosive leg power. To be able to move up the needed physical elements such as strength , speed and agility. Thus it can be understood that the techniques of coil elements physical interplay between the movement with other movements. On the roll technique is done by moving the opponent from one place to another with the position of the opponent with a powerful embrace, so that the opponent is not easily separated and facilitate the conduct of the roll, and roll moment, the position of the body such as kayang.

### c . Dings Kayang

Contribution kickback kayang in wrestling match, especially for the collection of value engineering and victory by unanimous decision. Asrian (1985), describes the participants in front of the wrestlers coach upgrading dijakarta that : "*...Technique of slamming kayang is especial technique in wrestling of Greek Roman style, in consequence the techniques have to be skillfully mastered in practice and also contest if we like to champion.*"

Freely interpreted that : Mechanical engineering major dings kayang is the Greek Roman style wrestling, because it's the technique to be mastered by skilled training or match if wanted to win.

Dings kayang also called absolute catch, meaning an absolute catch so it's worth getting the value of 5 (five), if the catch proceed with mastery for 30 seconds , then the value plus 1 (one). FILA in PB - PGSI, (1944:41) explains that : Top 5 (five) given to (1) all amplitudes are done in a standing position so directly opposed to bringing a dangerous position, (2) wrestler who did catch in squat position lifting an opponent off the floor and did catch a *grand amplitude* that is directly opposed to bringing a dangerous position .

### 2 . Leg Muscle Strength

Muscle strength is a very important component to improve overall physical condition. Power is the driving force any physical activity, the strength also plays an important role in protecting athletes from injury.

Djen Djalal (2006:13), "In common sports - tendon and tendon damage have held exercises to strengthen the tendon before the race so that no injury."

To improve the overall physical condition , the muscle strength is one of the main factors, as proposed by Harsono (1988.177), as follows :

**First, because the power is the driving force of any physical activity. Second, because of the power plays an important role in protecting athletes/people from possible injury. Third , because of the strength, the athlete will be able to run faster, throw or kick farther and more efficiently, hitting harder, so too can help strengthen the stability of the joints. Each activity is the driving force or motion activity.**

Limits on the power according to some practitioners berpariasi enough , but the essence is the same. Kasiyo Dwijowinoto (1993:299), argues that : "As a force that could be deployed single group of muscles at maximum effort." Strength is a physical element that needs to be developed, because the physical elements such as speed and endurance, usually develop along with the development muscle strength. Muscle strength is essentially a muscle contraction that is used to generate internal power to regulate the movement of body parts.

**According Soedarminto ( 1992:30 ),"The contraction is a term used to describe a muscular response to a stimulus that would result in tension (voltage). Muscles can only shrink towards the middle of the muscle. Tension on both large attachments are usually the same. There are two types of muscle contraction is isotonic and isometric".**

Power needs in every sport is different, as in the sport of wrestling is different from sports of badminton, volleyball, and other. This fact raises the knowledge, that are specific exercises that power in accordance with the desired sport .

Efforts to memksimalkan muscle work can be realized , it is necessary to exercises that can develop muscle strength. Like exercises using your own body weight and a member of external loads . Concept development of muscle strength can be argued that the development of muscle strength should really be consistent exercise program. An effective strength training program not only depends on the design which is designed systematically. Any exercise by the concept of the right to contribute great if carried out regularly by showing the correct principles .

***"Muscle strength is biomotorik components required by all branches of the sport with different levels from each other. This component can be enhanced by providing both internal and external resistance to the muscle in question."***  
***Loulembah Nur Halim (2004:24)***

Then continued Fox, et al ( 1988:158 ), describes the meaning of muscle strength , as follows: *"Muscular strength my be defined as the force or tension a muscle, Mora Correctly, a muscle group can exert against a resistance in one maximal effect."*

The opinions above can be interpreted freely , that muscle strength is defined as a *force* or tension that can be used to hold the load at a maximum effort.

From the above limitations, it can be argued that the leg muscle strength is kamampuan that allows maximum power in the development of the maximum contraction to overcome the load or resistance. So the leg muscle strength is the amount of strain that is used in the maximum contraction in strenuous activities.

### **3 . Explosive power arm**

Explosive power is a term derived from the word explosion (Britain) which means the eruption, and adapted into Indonesian to express about the events that are an element of an eruption or explosion of limbs such as arms, where it involves an element of strength and speed. In the field of sports *explosive* term is often used as a substitute for the word *power*. As proposed by Harsono (1988:200) as follows: Power is especially important for those sports where athletes must direct the *explosive* force as the numbers in the athletic throwing and pitching soft ball.

*Explosive* power capability is also known by the term muscle power, it is worth advanced by Abdul Kadir Ateng (1992:140) that : power is the ability of muscle to release maximum muscle strength in the shortest possible time. Someone said full power (the ability of an *explosive*) is an individual who has :

- a) a high level of muscle strength
- b) a high level of speed
- c) a high level of ability in integrating the speed and muscle strength.

In that regard, it can be done that power is a combination of strength and speed so that the development process is done by training elements of strength and speed. In connection with the above opinion, it can be said that the ability of an *explosive* arm strength and speed capabilities mengintegrsikan muscle in a pattern of movement in a relatively short time with maximum force, such as in sports, jumping, running, throwing and others.

Ability *explosive* power as a component of the physical potential is very important in moving the sport. Physical components must also be supported by other physical components to achieve the best performance in peak fitness. Other physical components intended is power (*strength*), velocity (speed), agility (*agility*), durability (*endurance*), flexibility (*fleksibility*), balance (*balance*) and precision (*accuracy*). Due to the explosive power capability is integrasi between power and speed to perform a movement pattern , the ability to develop explosive power through the elements of strength and speed development .

According to Harre D. (1982:108) expressed his opinion on the definition of explosive power capability which states that : "*power is the ability of an athlete to Overcome resistance by a high speed of contraction.*" Opinions can be freely interpreted that the ability of an *explosive* athlete is the ability to overcome the resistance with a high speed of contraction . High speed of muscle contraction is defined as the ability of muscles to contract strong and fast.

Furthermore Fox , E.L. (1988:64) argues that "*power is used to express work done in a unit of time*". Opinions can be freely interpreted that *explosive* power capability is the ability to display the maximum work per unit time. In accordance with the above opinion, expressed also by Harsono (1988:199) who said that "*power is the result of a force times velocity, where the force is equal (equivalent) with strength and velocity with speed*". Thus it can be said that the *explosive* power capability is determined by the quality of muscle strength and speed, including the speed of nerve stimulation and muscle contraction.

In his contribution to the energy, work and power , explosive power capability is said by Fox, EL (1984:10-11) that : "*Energy is described as the capacity or ability to perform work , mechanical work is the product of a force acting through a distance , power is work per unit time*". The opinion interpreted freely stating that the energy or power is the ability to do work, and work is the use of *force* or force through a certain distance, while the *explosive* power or ability of a maximum work per unit time.

It has been argued that in order to determine the *explosive* power, must combine the two elements of the physical condition to exert power and speed in an optimal movement patterns of motion, resulting in an *explosive* power development is done by increasing the strength and speed together. This is in accordance with the opinion of Jansen C.R. (1983:168) that : "*Power can be Increased by increasing strength without sacrificing speed, by increasing speed of movement without sacrificing strength, or by increasing both speed and strength.*"

Opinions mentioned above can be freely dirtikan that explosive power is influenced by two elements, namely speed and strength so that the development process is done by increasing the strength without compromising strength, or increasing strength and speed together.

Arm is an upper body limb or collectively, the "*superior extremity*" which consists of the upper arm and forearm. Thus the explosive power of the arm includes a wheelbase measuring the elbow joint (*articulatio cubitalis*), wrist joint (*articulatio carpalialis*), and joints of the hands (*articulatio metacarpalialis*), but which became the main issue in this study is the explosive power Langan. Thus the intended target is the maximum muscle work in relation to the ability kayang dings.

Thus to perform an adequate physical activity, explosive power (*power*) is very important. Therefore, whether or not a person is able to carry out activities such as doing exercise especially slam kayang much determined by perfect explosive power of one's arm.

In this case, the explosive power of the arm has a very important role in the sport of wrestling, especially in doing kayang dings. Karna to perform a movement dings kayang more perfect, then it takes the power and speed of the arm as the last intermediate of the power flow with or near - equal in doing so can result in kickback kickback kayang more perfect.

#### **4 . Togok Flexibility Back**

Physical element of flexibility is very important and necessary in all sports. Because it shows the quality of flexibility that allows a segment joints moving as much as possible according to the possibilities of motion (joint width), thus allowing the muscle or group of muscles to contract in the process of shortening and lengthening the fullest. As proposed by Harsono (1988:163), that "flexibility is the ability to perform the movement in the joint space, flexibility is also determined by whether or not elastic muscles tendons and ligaments."Further Mochamad Sajoto (1988:58) says that : "flexibility is one's effectiveness in adjusting himself to do all the activities of the body with the widest distribution , especially the muscles, ligaments - ligaments around the joints."

Additionally, Rahantoknam (1988:185) also argues that :

Flexibility is a joint's range of motion in one or a group of joints. Thus, the elasticity of the muscles and joints extent someone will be faster, because of the possibility of motion will be more flexible and movements that are difficult to do.

About the importance of flexibility in a variety of sports , Abd.Adib Rani (1974:6), argues that :

Flexibility has a major role to control the movement of good in sports, both quantitatively and qualitatively flexibility means that if either , of the athletes in the study of the movement will be faster technique mastered, difficult and rarely have accidents , assist in the development of both *strength, endurance, speed and agility*. If the amplitude of the broad movement it would be better for the sport and not get tired. Kualitet/art will grow beautiful views.

Thus, it is important to increase the flexibility a person or athlete because the effect on tendon and ligament stretching and movement add quality to the maximum. But in the process of improving the flexibility to be adapted to the sport that was involved. Almost every skill needed in a sport requires specificity flexibility, so that the training process is done with the development process in general, including joint stretching each muscle group .

Togok back flexibility is the ability to perform movements with togok wide amplitude motion or in the vast space . Togok power rearward role in making kickback kayang is important because in addition to support in obtaining the value, also can maintain the position that the opponent is not easy to get the value.

## B. Conceptual Framework

Based on the problems studied and the theories that support the literature review, the framework that will be developed in this study as follows:

1. If a student has a good leg muscle strength, then made kickback kayang can result in kickback movements are good also. To that end, alleged that the leg muscle strength can determine dings kayang wrestling ability.
2. If a student has a good explosive power arm, then made kickback kayang can produce a good kickback movement anyway. To that end, suspected that the explosive power to determine the ability of the arm wrestling kayang dings.
3. If a student has good flexibility togok rear, then the student will be able to slam in wrestling kayang well. To that end, alleged that flexibility back togok can determine dings kayang wrestling ability.
4. If a student has a leg muscle strength, explosive power and flexibility togok arm back good, it will produce a good ability kayang dings. To that end, alleged that the leg muscle strength, explosive power and flexibility togok rear arm can determine the ability of dings kayang wrestling.

## C. Hypothesis

Based on the proposed framework, the hypotheses to be tested truth in this study are as follows:

1. There is a significant contribution to the ability of leg muscle strength dings kayang wrestling Wrestling athlete South Sulawesi.
2. There is a significant contribution to the explosive power arm wrestling ability kayang dings in South Sulawesi Wrestling athlete.
3. There is a significant contribution towards the rear togok flexibility dings kayang wrestling ability in athletes Wrestling South Sulawesi.
4. There is a significant contribution to leg muscle strength, explosive power and flexibility togok arm back against dings kayang wrestling ability in athletes Wrestling South Sulawesi.

### Hypothesis Statistics

1.  $H_0 : r_{x1y} = 0$   
 $H_1 : r_{x1y} \neq 0$
2.  $H_0 : r_{x2y} = 0$   
 $H_1 : r_{x2y} \neq 0$
3.  $H_0 : r_{x3y} = 0$   
 $H_1 : r_{x3y} \neq 0$
4.  $H_0 : R_{x1.2.3y} = 0$   
 $H_1 : R_{x1.2.3y} \neq 0$

## **METHODS**

The method is basically the science of the method or methods used to achieve a goal. The method is defined as the study of the basic principles of investigation meaning that often involve matters of logic, classification, and basic assumptions. In the description of the research method, will be presented on matters concerning: Indications variables and design studies, operational definitions of variables, population and sample, data collection techniques and data analysis techniques.

### **A. Variables and Research Design**

#### **1 . Research variables**

The variables involved in this study can be identified into two categories as follows:

a. The independent variable ( the independent variable ), namely :

- a) The strength of the leg muscles
- b ) Explosive power arm
- c ) flexibility togok back

b. The dependent variable (dependent variable), namely:

- a) Ability dings kayang wrestling.

The variables involved will be subject to investigation in this study, which will be implemented in the form of descriptive. The independent variables Google Translate for Business: involved is leg muscle strength, explosive power and flexibility arm backward, while the dependent variable is the ability dings kayang wrestling. The next process is to conduct research on the measurement of these variables by using the test items are appropriate.

#### **2. The study design**

The design study is tailored to the type of research, the purpose of research and data analysis techniques are used. The design of this study will be used as a reference design as well as research in the analysis so as to determine the results arrived. Research design or research design used in this study is regression. In a simple study design is described as follows:

### **B. Definition of Operational Research**

To be more effective implementation of training and research data collection, it is necessary to limit or operational definition of each of the variables involved.

#### **1. Dings kayang**

Dings kayang is one catches the grand amplitude, usually starting from jogkok attitude and stance. Furthermore kayang dings can be done from the position of the side, front and back.



## 2. Leg muscle strength

Limb muscle strength is the ability to overcome one's leg muscles or load received custody in motion or contraction. The tests used to determine a person's leg strength was measured by using the Back and Leg dynamometer.

## 3. Explosive power arm

Explosive power arm in question is the power and speed of the muscles on the arms of doing Two - Hand Medicine Ball Put.

## 4. Togok flexibility back

Togok flexibility is the ability to perform movements togok with wide amplitude motion or in the vast space. Measurement of flexibility togok behind using Bridge-Up (Kayang).

## C. Population and Sample

### 1. Population

Each study must use the object to be investigated or referred to the population. Population is the total of the individual who made the object of research, the study population should have the same characteristics or almost the same. By him that, the population in this study were all students of UNM Penjaskesrek FIK .

### 2. Sample

Scientific research is not always absolutely necessary to have the total number of existing objects (the population), but can also take some of the existing population. Suharsimi Arikunto ( 1991:104 ) argues that: " the sample is representative of the majority or the population studied. " In other words, the question is a sample. The sample is a portion of the population which is the object of research. The reason of the use of the sample is limited time, energy and many populations. Thus, the sample used is a UNM student Penjaskesrek FIK by the number of 40 people were taken in a random way (simple random sampling).

## D. Data Collection Techniques

The data will be collected in this study according to the variables involved, namely the data leg muscle strength, explosive power arm, flexibility backward, and data capabilities kayang wrestling dings.

## E. Data Analysis Techniques

The collected data is statistically necessary dianaliss infrensial descriptive and hypothesis testing for the purposes of research. The picture used in this study are as follows:

1. Descriptive data analysis was intended to get a general idea of the data include average, standard deviation, minimum value, and maximum value.
2. Infrensial analysis used to test the research hypotheses using correlation and regression. So overall analysis of the data used in the general analysis on SPSS computer with the significant level of 95% or  $\alpha = 0.05$ .

## RESULTS AND DISCUSSION

In this chapter contains the results of the analysis of research data, including descriptive data and hypothesis testing. The results are only a summary of the analysis alone, whereas a complete statistical calculations can be found in appendix. In this chapter also presented a discussion of the research results.

### A. Presentation of the results of the data analysis

Empirical data obtained from the test and measurement comprising: leg muscle strength, explosive power arm, rear togok flexibility, and the ability of the athlete dings kayang wrestling Wrestling South Sulawesi Makassar held prior to tabulation of data will facilitate the testing process. Analysis of the data used in this study is a statistical analysis technique infrensial. The descriptive data analysis is intended to gain a general overview of data that includes the average, standard deviation, variance, range, minimum and maximum data, frequency tables and graphs. Further analysis of the requirements that testing normality test. To test the hypothesis, if it turns out the data are normally distributed, it will be used parametric statistical tests, namely correlation and regression of Pearson product-moment (r test), but if it turns out the data is not normally distributed, we used non-parametric statistical tests.

### d . testing the hypothesis

In research there are four hypotheses were tested. Hypothesis testing is done one by one according to the order in the formulation of hypotheses. In addition to testing the hypothesis, also given a brief conclusion about the test results.

1. There is a significant contribution between leg muscle strength against dings kayang wrestling ability in athletes Wrestling Makassar South Sulawesi.

Statistical hypotheses to be tested :

$H_0: r_{xy} = 0$

$H_1: r_{xy} \neq 0$

Testing criteria :

If  $r$  (Pvalue. $>\alpha 0,05$ ), then accept  $H_0$  and reject  $H_1$ .

If  $r$  (Pvalue. $<\alpha 0,05$ ), then reject  $H_0$  and accept  $H_1$ .

Test results :

From the analysis of the data using the Pearson correlation test, the value of r count (r) of 0.733 ( Pvalue < 0.05 ), then  $H_0$  is rejected and  $H_1$  is accepted. This means, there is a significant contribution between leg muscle strength against dings kayang wrestling ability in athletes Wrestling Makassar South Sulawesi. This implies that, if the student has a good leg muscle strength, it will be followed by the ability of the technique of slamming kayang good wrestling too.

2. There is a significant contribution to the explosive power of the ability of dings kayang arm wrestling on wrestling athletes Makassar South Sulawesi.

Statistical hypotheses to be tested :

$H_0: r_{x_2y} = 0$

$H_1: r_{x_2y} \neq 0$

Testing criteria :

If  $r$  (Pvalue. $>\alpha$  0,05), then accept  $H_0$  and reject  $H_1$ .

If  $r$  (Pvalue. $<\alpha$  0,05), then reject  $H_0$  and accept  $H_1$ .

Test results:

From the analysis of the data using the Pearson correlation test, the value of  $r$  count ( $r$ ) of 0.724 (Pvalue  $<0.05$ ), then  $H_0$  is rejected and  $H_1$  is accepted. This means, there is a significant contribution to the explosive power arm wrestling ability kayang dings in South Sulawesi, Makassar Wrestling athlete. This implies that, if the student has a good arm explosive power, it will be followed by the ability of the technique of slamming kayang good wrestling too.

3. There is a significant contribution to the flexibility togok back against dings kayang wrestling ability in athletes Wrestling Makassar South Sulawesi.

Statistical hypotheses to be tested:

$H_0: r_{x_3y} = 0$

$H_1: r_{x_3y} \neq 0$

Testing criteria :

If  $r$  (Pvalue. $>\alpha$ 0,05), then accept  $H_0$  and reject  $H_1$  .

If  $r$  (Pvalue. $<\alpha$ 0,05), then reject  $H_0$  and accept  $H_1$  .

Test results :

From the analysis of the data using the Pearson correlation test, the value of  $r$  count ( $r$ ) of 0.738 ( Pvalue  $< 0.05$  ), then  $H_0$  is rejected and  $H_1$  is accepted. This means, there is a significant contribution towards the rear togok flexibility dings kayang wrestling ability in athletes Wrestling Makassar South Sulawesi. This implies that, if a student has good flexibility togok back, it will be followed by the ability of the technique of slamming kayang good wrestling too.

4. There is a significant contribution to the strength of the legs , arms explosive power, flexibility togok slamming back against the ability of the athlete Wrestling wrestling kayang South Sulawesi Makassar.

Statistical hypotheses to be tested :

$H_0: R_{x_{1.2.3}y} = 0$

$H_1: R_{x_{1.2.3}y} \neq 0$

Testing criteria :

If  $R$  (Pvalue. $>\alpha$ 0,05), then accept  $H_0$  and reject  $H_1$  .

If  $R$  (Pvalue. $<\alpha$ 0,05), then reject  $H_0$  and accept  $H_1$  .

Test results :

From the analysis of multiple correlation data, the value of r count ( R) of 0.848, after significant testing or test multiple correlation significance using the F test of regression is calculated F value of 30.722, with a significant level of 0.000. Therefore, the probability value (0.000) is much smaller than 0.05 (P < 0.05), the regression model can be used to predict the ability of.

Kayang dings wrestling technique (can be applied to a population where the sample was taken). Then H0 is rejected and H1 is accepted or significant regression coefficients. This means, there is a significant contribution jointly between leg muscle strength, explosive power arm, rear togok flexibility, the ability of the athlete slam wrestling Wrestling kayang South Sulawesi, Makassar. The coefficient of determination (R-square) obtained a value of 0.719, meaning that 71.9% kayang wrestling ability dings technique described by leg muscle strength, explosive power and flexibility togok arm rear, while the remaining 28.1% is explained by other variables were not observed in this study. Prediction diversity techniques dings kayang wrestling ability is reflected in the multiple regression equation found that;

$$\hat{Y} = a + b_1X_1 + b_2X_2 + b_3X_3 = -50,677 + 0,327 X_1 + 0,286 X_2 + 0,370 X_3.$$

Based on the table ANOVA test or F test, was obtained F count of 30.722 with a significant level of 0.000 as the probability value (0.000) is much smaller than 0.05, then the regression model can be used to predict the ability of a student wrestling kayang dings. This implies that, if the student has a leg muscle strength, explosive power and flexibility togok arm back good, then it will be followed by the ability of dings kayang good wrestling too.

## DISCUSSION

The results of the analysis of the contribution between the two independent variables with the dependent variable in hypothesis testing as noted above, still need to be studied further by providing a link between the interpretation of analytical results achieved with the theories underlying this study. This explanation is necessary in order to know the suitability of the theories put forward by the research results obtained.

To conclude the study in accordance with the purpose of research, the results of the analysis of data that needs to be addressed in accordance with the underlying theories. As the discussion in question is as follows :

1. The first hypothesis H0 is rejected and H1 is accepted, namely: there is a significant contribution to the ability of leg muscle strength dings in athletes Wrestling wrestling kayang South Sulawesi Makassar. The obtained results when associated with a frame of mind as well as the underlying theories, basically the results of this study support the theory put forward by Harsono (1988.177), as follows : First, because the power is the driving force of any physical activity. Second, because of the power plays an important role in protecting athletes / people from possible injury. Third, because of the strength, the athlete will be able to run faster, throw or kick farther and more efficiently, hit harder, so it can help strengthen the stability of the joints. Strength is driving any activity or motion activity.

It can be explained that if a student has a good arm explosive power, would result in kickback kayang perfect technique. Therefore, one kind of power that needs to be

developed in the sport of wrestling is the element of leg muscle strength. However, it should be realized that the physical element does not stand alone, but must be supported and combined with other physical elements.

2. The second hypothesis H<sub>0</sub> is rejected and H<sub>1</sub> is accepted, namely: there is a significant contribution to the ability of the explosive power arm wrestling kayang dings in South Sulawesi, Makassar Wrestling athlete.

The obtained results when associated with a frame of mind as well as the underlying theories, basically the results of this study support the theory that proposed by Harre D. (1982:108) expressed his opinion on the definition of explosive power capability which states that: " power is the ability of an athlete to Overcome resistance by a high speed of contraction ". The opinion can be freely interpreted that explosive power is the ability of an athlete 's ability to overcome the resistance with a high speed of contraction. High speed of muscle contraction is defined as the ability of the muscles strong and fast in the contract. It can be explained that if a student has a good arm explosive power, would result in kickback kayang perfect technique. Therefore, one kind of physical condition that needs to be developed in the sport of wrestling is an element of explosive power arm. However, it should be realized that the physical element does not stand alone, but must be supported and combined with other physical elements.

3. The third hypothesis H<sub>0</sub> is rejected and H<sub>1</sub> is accepted, namely: there is a significant contribution to the ability of flexibility togok rear shock-kayang wrestling in South Sulawesi, Makassar Wrestling athlete.

The obtained results when associated with a frame of mind as well as the underlying theories, the fundamental results of this study support the theory proposed by Rahantoknam (1988:185) also argues that : flexibility of an existing joint range of motion in one or a group of joints. Thus, the elasticity of the muscles and joints extent someone will be faster, because of the possibility of motion will be more flexible and movements that are difficult to do. It can be explained that if a student has good flexibility togok back, will support for do kickback kayang perfect technique.

4. The fourth hypothesis H<sub>0</sub> is rejected and H<sub>1</sub> is accepted, namely: there is a significant contribution jointly leg muscle strength, explosive power and flexibility togok arm back against dings kayang wrestling ability in athletes Wrestling Makassar South Sulawesi.

The obtained results when associated with a frame of mind as well as the underlying theories, the fundamental results of this study support the existing theories. It can be explained that both of these independent variables together make a significant contribution to the ability of beating kayang wrestling techniques. Limb muscle strength used in the kickback kayang namely when lifting the opponent from below (mat) up tightly to the body so that the opponent is not in contact with the mat thus kayang dings can be done well. Take advantage of the explosive power in the arm when lifting the opponent to slam kayang for it to be supported by strong physical element and fast or explosive power which at the time of lifting the opponent to be slammed to be done with one jolt so that the opponent does not have time to do the resistance movement dings already performed. While the rear togok flexibility is a major contributing factor in kayang dings techniques, at which time the opponent has been raised above the body of the rear togok flexibility can be functionalized with togok bend backward so the weight is above your head and make a move to slam the opponent kayang so kickback kayang made beautiful / lewes thus made perfect kayang dings.

## CONCLUSIONS AND RECOMMENDATIONS

### A. Conclusion

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

1. There is a significant contribution to the ability of leg muscle strength dings in athletes Wrestling wrestling kayang South Sulawesi Makassar.
2. There is a significant contribution to the ability of the explosive power arm wrestling kayang dings in South Sulawesi, Makassar Wrestling athlete.
3. There is a significant contribution to the body behind the flexibility togok dings kayang wrestling ability in athletes Wrestling Makassar South Sulawesi.
4. There is a significant contribution jointly between leg muscle strength, explosive power and flexibility togok arm behind the body of the ability of the athlete slam wrestling Wrestling kayang South Sulawesi Makassar.

### B. Advice

Based on the analysis of data and conclusions, it can be expressed as the following suggestions :

1. For lecturers, trainers and coaches of sports Wrestling, that presumably in an effort to improve the ability of dings kayang wrestling for students or athletes are nurtured, should pay attention to the elements necessary to support the physical abilities, such as leg muscle strength, explosive power and flexibility togok rear arm.
2. For students or athletes wrestling, it is recommended that athletes or students need to equip themselves about the knowledge of the importance of developing and has the physical abilities such as leg muscle strength, explosive power and flexibility togok arm back in order to further enhance the ability to perform the technique kayang dings.
3. For students who are interested in doing further research, it is advisable to bear on involving other variables relevant to this study as well as the population and the wider sample.

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