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LAY-UP SHOOT SKILLS OF OLD-SCHOOL CLUB PLAYERS: THE CLOUT OF AGILITY, BALANCE, AND COORDINATION ANKLES

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ABSTRACT

This study falls into the path analysis research category, employing the path analysis method for data analysis. The research subjects were Makassar Old School players. The population comprises all Old School Makassar players, with a sample size of 30. We used descriptive analysis as a data analysis technique, testing hypothesis requirements with the SPSS 25.00 program at a significance level of 95%, or 0.05. The research results show that: (1) agility has a significant direct influence on the layup shooting of old school Makassar players by 26.1%, with a significant level of 0.038 < α0.05. (2) The research also reveals a significant direct influence of balance on the lay-up shoot of old-school Makassar players. School Makassar is 80.5%, with a significance level of 0.000 < α0.05. (3) There is a significant direct influence of ankle coordination on the layup shot of old-school Makassar players by 20.3%, with a significant level of 0.031 < α0.05. (4) There is a significant direct influence of agility on the ankle coordination of Old School Makassar players at 80.7%, with a significance level of 0.000 < α0.05. (5) There is a significant direct influence of balance on the ankle coordination of Old School Makassar players at 26.3%, with a significant level of 0.038 < α0.05. (6) There is a significant direct influence of agility on lay-up shoot skills through Old School Makassar players' ankle coordination of 16.3%, with a significance level of 0.000 < α0.05. (7) There is a significant direct influence of balance on lay-up shoot skills through Old School Makassar players' ankle coordination of 5.3%, with a significance level of 0.000 < α0.05.

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1. INTRODUCTION

Basketball is the most popular sport in the United States, with the NBA serving as the main league. The Federation Internationale de Basketball (FIBA) is the primary global sport, while Perbasi, the Indonesian basketball association, is the primary sport in Indonesia (Zarić et al., 2020; Koba et al., 2023; Rismayadi et al., 2023). Official competitions often take place in this sport, ranging from PON to the Olympics. Two

opposing teams play basketball. Each team has five players. Each team must try to score as many points as possible by putting the ball into the opponent's basket (Sarlis & Tjortjis, 2020; Matulaitis & Bietkis, 2021).

From year to year, the game of basketball in South Sulawesi has experienced significant growth, beginning in the capital city of Makassar and attracting a wide range of participants, from children to the elderly. Numerous academics and basketball lessons have emerged from Makassar in remote regions of South Sulawesi. In terms of achievements, the development of basketball in Makassar has yielded satisfactory results, as evidenced by the accomplishments of its basketball athletes to date. The city of Makassar, with its club training grounds and government facilities, provides the necessary encouragement. Numerous clubs established in various regions of South Sulawesi demonstrate the rapid growth in interest in the sport of basketball. However, this does not preclude the possibility of further improvement and development, particularly in the fundamental technique of basketball, which is the primary aspect of the game.

The PRAPON, a competition featuring four categories in South Sulawesi, successfully swept all four categories, paving the way for the 2024 Aceh-Sumantra PON. The South Sulawesi KU 21 Team secured first place in the 3X3 National Championship. Several players from Old School Makassar also participated in yesterday's Prapon and Kejuranas. The Old School schedules training four times a week, specifically on Monday, Wednesday, Friday, and Sunday. Based on my observations at the Old School Club, the coach initiates the training program with a warm-up before initiating the core activities. Following this, the coach provides the players with basic technical training, which includes dribbling techniques, layups, shooting, and finishing with games. However, this training session reveals several shortcomings in game and basketball execution, particularly in layup shoot activities. While the club's training activities have progressed well, many players continue to encounter issues that frequently arise during training and gameplay. Based on observations and interviews with the coaches and players of Club Old School Makassar, it was found that there were still many deficiencies in practicing the basic techniques of the lay-up-shoot basketball game. This data indicates that the players of Club Old School Makassar have not reached their full potential.

This research supports several physical fitness components, namely agility, balance, and coordination, in carrying out a lay-up shoot. The lay-up shoot movement usually puts the ball into the ring using one hand at close range (Nopiana et al., 2020; Alfian et al., 2021). Players generally use this technique when the opponent's defense is weak. Basketball players can perform the lay-up shoot technique well if they possess mastery over the ball, can control the ball, and have excellent body movement coordination (Santos et al., 2017). Therefore, mastering the basic technical skills of layup shooting requires long-term practice. Layup shots are a very important skill in basketball, besides other basic techniques (Gryko et al., 2018; Chakraborty & Mondal, 2020). People often refer to proficient shooters as "pure shooters." For a player to become a good shooter, the player must enjoy his shooting practice so that the player will continue to do shooting

practice without getting bored easily. When making a layup shot, it is very necessary to be precise in directing the ball into the basketball hoop (Huston & Grau, 2003; Schmidt, 2012; Erčulj & Štrumbelj, 2015).

Several supporting components are necessary for executing lay-up shoot skills, where skill refers to the capacity to apply one's knowledge efficiently and effectively, ensuring stability and success in accomplishing a goal. Agility is one of the components of freshness (Paul et al., 2016). Physical activity is essential for all activities that necessitate rapid changes in the position of the body and its parts (Mappaompo et al., 2024). It can be concluded that an agile person possesses the ability to quickly and precisely change their body direction and position while moving, all while maintaining balance and awareness of their body posture. The next component, balance refers to a person's ability to maintain their body system both in a static position and a dynamic movement position (Jadczak et al., 2019). Maintaining good balance is crucial for carrying out movements, as it enables a person to coordinate movements and perform certain dexterity elements. Agility is defined as the ability to maintain or control the nervous-muscular system so that it can work efficiently both when the body is at rest and when it is moving (Badaru et al., 2021).

When movements lack coordination, the ball's direction may not align with expectations. Speed, strength, endurance, flexibility, kinesthetics, sense, balance, and rhythm provide continuity and integration in movement coordination, therefore, one has a close relationship with each other. If one element is missing or underdeveloped, this will affect the perfection of coordination (Verhoeven & Newell, 2016).

We formulated the research problem based on the analysis we conducted on basketball players at one of the basketball clubs in Makassar City.

1. Does agility have a direct impact on lay-up shoot skills in basketball games among old-school Makassar players?
2. Does balance have a direct impact on lay-up shoot skills in basketball games among old-school Makassar players?
3. Does eye-foot coordination have a direct influence on lay-up shooting skills in basketball among old-school Makassar players?
4. Does agility have a direct effect on ankle coordination in Makassar old-school players?
5. Does balance have a direct effect on ankle coordination in old-school Makassar players?
6. Does agility through ankle coordination influence lay-up shoot skills in basketball among old-school Makassar players?
7. Does old-school Makassar players' balance through ankle coordination influence their layup shoot skills in basketball?

Researchers can use the benefits of research as learning material to improve basketball performance. Training programs and lay-up strategies for basketball games in physical education and sports use research as a guide.

2. METHOD

This type of research employs quantitative descriptive research methods and incorporates path analysis techniques (Creswell & Creswell, 2017). Specifically, we are looking for the contribution of one variable to another variable. In this study, the sample consisted of 30 students. We used instruments from previous research, including agility tests, balance tests, eye-foot coordination tests, and lay-up shoot skill tests, to collect data in this study. The Shuttle Run agility test, which measures agility over 4 x 10 meters, involves sprinting back and forth rapidly. This test is an adaptation of Kolimechkov et al. (2019). The following are the test instruments in the research presented in Figures 1, 2, and 3.

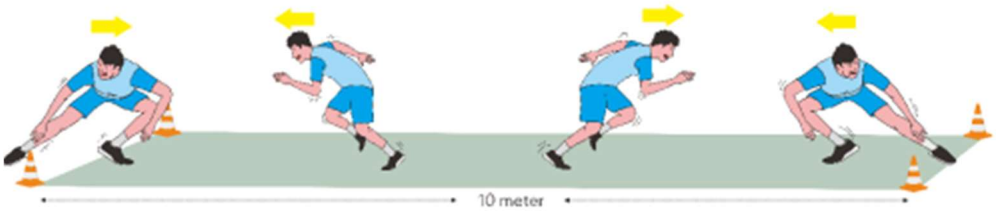

Figure 1. Agility Instrument Test

The dynamic balance test instrument, specifically the one-legged standing test, measures balance. The test consists of jumping in a zigzag manner using one leg and stopping momentarily after landing (Sibley et al., 2016; Jaffri et al., 2020).

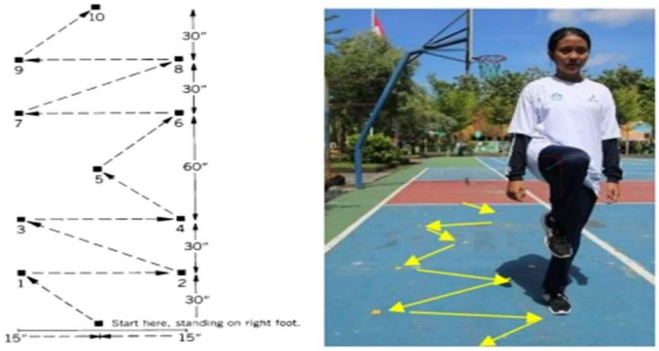

Figure 2. Balance Instrument Test

Next, test eye-foot coordination using the between-the-legs dribble instrument. This dribble is a quick way to move the ball from one hand to another between the legs. You use it when the dribbler is under close guard or when you want to change direction; you can also use it as an instrument to train eye-foot coordination.

Figure 3. Eye Foot Coordination Instrument Test

In this research on lay-up shoot technique skill levels, the researcher took the stages of doing a lay-up shoot (Idris et al., 2023). A valid shot is a shot that is done with the correct lay-up shoot steps and prints the ball into the ring (Jaya et al., 2023; Ardiyansi et al., 2023), lay-up is done 10 times.

3. RESULTS AND DISCUSSION

Results

Based on data processing and analysis, below are the results of the descriptive analysis of research data.

Table 1. Descriptive Analysis

Statistics	Agility	Balance	Foot eye coordination	Lay Up Shoot
N	**30**	**30**	**30**	**30**
Mean	10,7980	82,67	43,20	7,17
Median	10,7500	80,00	44,00	7,00
Mode	10,10	80	45	7
Std Deviation	0,80156	13,374	8,002	1,315
Variance	0,642	178,851	64,028	1,730
Range	2,59	40	35	4
Minimum	9,52	60	25	5
Maximum	12,11	100	60	9
Sum	323,94	2480	1296	215

The explanation can be found in Table 1 above.

1. For agility data, from the number of samples (N) of 30, the average value was 10.7980 points, the middle value was 10.7500 points, the mode was 10.10 points, the standard deviation was 0.80156 points, the variance was 0.642 points, the ranges were 2.59 points, the minimum value was 9.52 points, the maximum value was 12.11 points, and the sum was 323.94 points.
2. For balance data, from a sample size of 30, the average value was 82.67 points, the middle value was 80.00 points, the mode was 80 points, the standard deviation was 13.174 points, the variance was 64.028 points, the range was 40 points, the minimum value was 60 points, the maximum value was 100 points, and the sum was 2480 points.
3. For ankle coordination data, based on the number of samples (N) of 30, the average value was 43.20 points, the middle value was 44.00 points, the mode was 45 points, the standard deviation was 8.002 points, the variance was 64.028 points, the range was 35 points, the minimum value was 25 points, the maximum value was 60 points, and the sum was 1296 points.
4. For data on lay-up shoot skills, from the number of samples (N) of 30, the average value was 7.17 points, the middle value was 7.00 points, the mode was 7 points, the standard deviation was 1.315 points, the variance was 1.730 points, the range was 4 points, the minimum value was 5 points, the maximum value was 9 points, and the sum 215 points.

Normality Test Results

Table 2. Normality Test

Variable	N	Statistics	Sig.	α	Information
Agility	30	0,108	0,200	0,05	Normal
Balance	30	0,155	0,064	0,05	Normal
Eye Foot Coordination	30	0,111	0,200	0,05	Normal
Lay Up Shoot Skills	30	0.150	0,081	0,05	Normal

Furthermore, for the normality test of agility data with Kolmogorov-Smirnov, it was 0.108, and the significance level was 0.944, which was greater than α 0.05. Body balance, with a value of 0.155 and a significance level of 0.879, is greater than α 0.05. Ankle coordination with Kolmogorov Smino is 0.111, and the significance level is 0.983, greater than α 0.05. The lay-up shoot skill obtained a Kolmogorov Smirnov value of 0.150 and a significant level of 0.081, which is greater than α 0.05. As a result, we can conclude that the data on agility, balance, and ankle coordination concerning the lay-up shoot skills of Club Old School Makassar players follow a normal distribution.

Linearity Test Results

Every change in one variable will result in changes of equal magnitude in the other variables, which is the nature of a linear relationship between variables. The dependent variable will follow changes in the independent variable. To verify the data distribution's linearity, we use the linearity test. In linearity testing, provisions apply: if the F value is insignificant or greater than 0.05, we declare the relationship between variables linear.

Table 3. Results of linearity tests for agility, balance and ankle coordination on the lay up shoot skills of Old School Makassar players

No.	Variable	Defiation For Linearity	Sig	Conclusion
1.	Agility (X1) Foot Eye Coordination (X3)	1,925	0,327	Linear
2.	Balance (X2) Foot Eye Coordination (X3)	0,626	0,605	Linear
3.	Agility (X1) Lay Up Shoot Ability (Y)	0,583	0,810	Linear
4.	Balance (X2) Lay Up Shoot Ability (Y)	0,575	0,637	Linear
5.	Foot Eye Coordination (X3) Lay Up Shoot Ability (Y)	1,741	0,149	Linear

Based on the data from the linearity test results in the table above, the F value (deviation from linearity) between the agility variable (X1) and ankle coordination (X3) is 1.925 at a significance of 0.327, the F value (deviation from linearity) between balance (X2) and coordination ankle (X3) is 0.626 with a significance of 0.605, the F value (deviation from linearity) between the agility variable (X1) and lay up shoot skill (Y) is 0.583 with a significance of 0.810, the F value (deviation from linearity) between balance (X2) with Lay up shoot skill (Y) of 0.575 at a significance of 0.637, the F value

(deviation from linearity) between the ankle coordination variable (X3) and Lay up shoot skill (Y) of 1.741 at a significance of 0.149. The F value is insignificant, indicating a linear relationship between the variables.

Model Test Results

Substructure 1

Table 4. Substructure Determination Coefficient 1

Model	R	Coefficient of Determination	Adjusted Coefficient of Determination	Std. Eror
1	0,678	0,472	0,433	6,025

Table 5. Multivariate Regression Analysis Model 1 Sub Structure I

Model	Variable	Standard Beta Coefficient	T	*P*
1	Agility	-0,807	-4.685	0,000< 0,05
	Balance	-0,263	-1,529	0,038< 0,05
	Constant		5,832	0,000

The table above reveals an R-Score value of 0.678, indicating that agility and balance together account for 67.8% of the changes in the ankle coordination variable, with other variables outside the model determining the remaining 32.2%. The sig value in the Anova section (F test) indicates that the independent variables significantly influence the ankle coordination variable simultaneously. 0.000 < Alpha 5%. Furthermore, the coefficients table (partial t-test) reveals a statistically significant influence of the agility variable (X1) and the balance variable (X2) on the ankle coordination variable (X3), as evidenced by their respective significant values, which are smaller than Alpha 5%, namely 0.000 and 0.038.

To analyze how much influence other variables outside the model have on (ε1) can be determined in the following way:

$$\varepsilon_1 = \sqrt{1 - R^2}$$
$$= \sqrt{1 - 0{,}678}$$
$$= \sqrt{0{,}322}$$
$$= 0{,}5675 = 56{,}75\%$$

So the value (ε1) of the path coefficient for other variables is 51.77%.

Substructure 2

$Y = \rho yx_1 + \rho yx_2 + \rho yx_3 + \varepsilon_2$

Table 6. Substructure Determination Coefficient II

Model	R	Coefficient of Determination	Adjusted Coefficient of Determination	Std, Eror
1	0,930	0,865	0,849	0,511

Table 7. Multivariate Regression Analysis Model 1 Sub Structure II

Model	Variable	Coefficient	Standard Beta Coefficient	T	P
1	Agility	-0,428	-0,261	-2,181	0,038 < 0,05
	Balance	0,079	0,805	8,697	0,000 < 0,05
	Eye Foot Coordination	-0,033	-0,203	-2,045	0,031 < 0,05
	Constant	6,683		2,137	0,022

Based on the table above, the R-Square value is 0.930, and the significance value for variables X1, X2, and X3, respectively, is 0.038, 0.000, and 0.031. Because the significance values of X1, X2, and X3 are <0.05, they are considered significant. We can analyse the influence of other variables outside the model on lay-up shoot (E2) skills in the following way:

$$\varepsilon_2 = \sqrt{1 - R^2}$$
$$= \sqrt{1 - 0{,}930}$$
$$= \sqrt{0{,}07}$$
$$= 0{,}2645 = 26{,}45\%$$

So the value (ε2) of the path coefficient of another variable on the Lay up Shoot skill is 26.45%.

Hypothesis Testing

Based on the analysis results obtained in the table, it appears that the β value is -0.261 with significance (p) = 0.038 (p < 0.05), which means it is significant. This demonstrates that agility has a significant direct influence on Club Old School Makassar players' lay-up shooting skills. Based on the analysis results obtained in the table, it appears that the β value is 0.805 with significance (p) = 0.000 (p < 0.05), which means it is significant. This shows that balance has a significant direct influence on Club Old School Makassar players' lay-up shoot skills. Furthermore, based on the analysis results obtained in the table, it shows that the β value is -\0.203 with significance (p) = 0.031 (p < 0.05), which means it is significant. This demonstrates that ankle coordination has a significant direct influence on Club Old School Makassar players' lay-up shoot skills.

Based on the analysis results obtained in the table, it appears that the β value is -0.807 with significance (p) = 0.000 (p < 0.05), which means it is significant. This demonstrates that agility has a significant direct influence on Club Old School Makassar players' ankle coordination. In addition, based on the analysis results obtained in the

table, it shows that the β value is -0.263 with significance (p) = 0.038 (p < 0.05), which means it is significant. This demonstrates that balance has a significant direct influence on Club Old School Makassar players' ankle coordination.

The study reveals that the product of ß and p, which represent the agility variables on skills, determines the value of the coefficient and the significance (p) of the agility variable on lay-up shoot skills, as demonstrated by the ankle coordination of Club Old School Makassar players. The analysis of the layout shoot and the correlation coefficient yielded a coefficient value of -0.807. This demonstrates that agility has a significant influence on lay-up shoot skills, as evidenced by the ankle coordination of Club Old School Makassar players.

The table shows the results of the analysis. It shows that the value of the coefficient β and the significance level (p) of the balance variable on Club Old School Makassar players' ability to improve their lay-up shoot skills through ankle coordination can be found by multiplying ß and p. The correlation coefficient yields a value of -0.263. This shows that balance has a significant influence on layup shoot skills, as evidenced by the ankle coordination of Club Old School Makassar players.

Discussion

The hypothesis testing section's test results for all the hypotheses indicate that agility directly influences the lay-up shoot skills of Old School Makassar players by 26.1%. These findings indicate that an athlete or basketball player requires agility to enhance their layup and shoot skills. Based on research when carrying out a Lay up Shoot, the player has good agility when carrying out a Lay up Shoot. A lay-up shoot is an attempt to put the ball into a basketball ring or basket using two steps and jumping to get points. We also refer to lay-up shots as flying shots. The lay-up shoot movement usually puts the ball into the ring using one hand at close range. In general, this technique is used by players when the opponent's defense is weak (Huston & Grau, 2003).

Agility is a component of physical fitness that is very necessary in all activities that require speed in changing the position of the body and its parts (Sheppard & Young, 2006; Jeffreys & Goodwin, 2016; Mappaompo et al., 2024). For the agility component, the Makassar Old School Club training program includes ground drills and shuttle runs for each exercise. Agility influences a player's lay-up shoot movement skills, allowing them to quickly change the position of their body, feet, and hands when executing a lay-up shoot. Agile players can execute the ball quickly and correctly with optimal positions, as well as make feints or avoid the opponent's guard while executing a layup shot.

The research results indicate a direct influence of balance on the layup shoot skills of old-school Makassar players, with a significant 80.5% improvement. The analysis reveals that a basketball player requires balance to enhance their layup and shoot abilities. The research findings indicate that players' balance during lay-up shooting is crucial for enhancing their skills. According to the research results, the balance of players who perform lay-up shots varies. Some players perform lay-up shots so well that it affects their balance, including using their own feet for support. Clarifying balance in the lay-up shoot, a form of foot technique that involves leaping both the left and right

feet forward with maximum force and height, will optimize lay-up shoot skills. This is reinforced by the belief that balance is a person's ability to control the nerves and muscles in their body.

Balance refers to an individual's capacity to maintain their body system in both static and dynamic positions. It plays a crucial role in movement execution, as it enables a person to coordinate movements and enhance their dexterity and agility (Badaru et al., 2021). Makassar Old School players undergo balance training, incorporating jerking exercises into their basketball drills to enhance their balance. This is crucial for lay-up shoots, where players alternately jump towards the ring to score points. The research findings indicate that ankle coordination has a direct influence on Old School Makassar players' layup shoot skills, with a 20.3% increase. These results demonstrate that basketball players require ankle coordination to enhance their layup and shooting skills.

According to the research results, agility has an 80.7% direct influence on Old School Makassar players' ankle coordination. The analysis indicates that player agility is required to improve ankle coordination. Research indicates that Old School Makassar players' ankle coordination influences their agility during a lay-up shoot.

The research findings indicate that balance has a direct influence on Old School Makassar players' ankle coordination, with a statistical significance of 26.3%. The analysis reveals that Old School Makassar players require balance to enhance their ankle coordination. According to research, when performing a layup shoot, the player's ankle coordination affects balance. Furthermore, if the opponent shadows the player holding the ball, the layup shot becomes the safest and most effective. By closely studying and practicing various dribbling and ball-passing exercises, one can master good layup shooting movements.

Skill refers to the capacity to apply one's knowledge efficiently and effectively, ensuring stability and success in achieving a goal. The opponent's shadowing of the player holding the ball makes the layup shot the safest and most effective. By closely studying and practicing various dribbling and ball-passing exercises, one can master good lay-up movements. The ankles play a significant role in these movements. Coordination is a person's ability to combine several movements into one effective and efficient movement pattern (Verhoeven & Newell, 2016). The coordination referred to here will give rise to the efficiency of a movement, which will increase a person's intelligence and give birth to automatic movements. Agility, a crucial component of physical fitness, is essential for all activities that require rapid changes in the body's position and its parts (Mappaompo et al., 2024). For the agility component, the Makassar Old School Club training program includes ground drills and shuttle runs for each exercise. Agility influences a player's lay-up shoot movement skills, allowing them to quickly change the position of their body, feet, and hands when executing a lay-up shoot. Agile players can execute the ball quickly and correctly with optimal positions, as well as make feints or avoid the opponent's guard while executing a layup shot. Coordination plays a critical role in integrating agility movements, such as a lay-up shoot.

The research results indicate that Old School Makassar players' ankle coordination directly influences their lay-up shoot skills by 5.3%. The analysis reveals that Old

School Makassar players require balance to enhance their lay-up shoot skills by improving their ankle coordination. Techniques can strengthen it further. Good balance will enable a person to carry out activities or movements effectively and efficiently with minimal risk of falling (Plisky et al., 2006; Hsu et al., 2014). The body maintains its position against gravity and other external factors, keeps its center of mass in balance with the fulcrum, and stabilizes its parts when they move.

4. CONCLUSION

We can draw the following conclusions from the results of the hypothesis test and the discussion of the research findings:

1. By 26.1%, agility has a significant direct influence on the layup shooting of old-school Makassar players.
2. There is a significant direct influence on the balance of Old School Makassar players' lay-up shoots have 80.5%.
3. Ankle coordination significantly influences Old School Makassar players' layup shots by 20.5%.
4. Agility has a significant direct effect on Old School Makassar players' ankle coordination, amounting to 80.7%.
5. Balance has a significant direct influence on Old School Makassar players' ankle coordination (26.3%).
6. Old School Makassar players' ankle coordination is 16.3%, indicating a significant direct influence of agility on lay-up shoot skills.
7. Balance has a significant direct influence on lay-up shoot skills, as evidenced by Old School Makassar players' 5.3% ankle coordination.

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