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THE EFFECT OF WRIST FLEXIBILITY AND SELF-CONFIDENCE ON BASKETBALL SHOOTING FREE THROW RESULTS

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Abstract

This study aims to determine the effect of wrist flexibility and self-confidence on free throw performance in basketball among athletes of the Gotte Basketball Club. The method used was quantitative descriptive with a total sampling approach involving 12 athletes from KU 20. The research instruments consisted of a wrist flexibility test, a self-confidence questionnaire, and a free throw skill test. The results of simple linear regression analysis indicate that wrist flexibility has a significant influence on free throw performance with an R^2 value of 0.684 and a p-value of 0.0009. Meanwhile, self-confidence has a positive but non-significant influence (R^2 = 0.203; p-value = 0.141). Multiple regression analysis showed that both variables together explained 73% of the variation in free throw outcomes, but only wrist flexibility remained significant (p = 0.0023). These findings indicate that wrist flexibility is the dominant factor in supporting free throw accuracy, while self-confidence has not yet shown a strong influence in the context of training. This study suggests that coaches should emphasize flexibility training and create training situations that stimulate psychological pressure to enhance athletes' self-confidence.

Keywords: Wrist flexibility, self-confidence, basketball

INTRODUCTION

Sport is all systematic activities to encourage, foster, and develop physical, spiritual, and social potential (E. Haris Silaban at el2023). Sports can also be used as a tool to unite the nation through coaching in each sport to be directed towards improving achievement optimally, optimal achievements are produced through sports that are widely popular, one of which is basketball (F.Fahmi 2024). The sport of basketball is increasingly developing into a sport that is played by various levels, groups and layers of society who have various levels of ability, this game can also be played on an open court *(out door)* or closed fields *(in by)(*Idham Munzir and Salbani 2023). The game of basketball is popular in the community, especially among children and teenagers, basketball is a fun, composite, educational, entertaining and healthy sport (A.h Hasyim 2020)

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The sport not only demands physical abilities such as speed, agility, and strength, but also technical skills that every player must master. One of the very important basic techniques in the game of basketball is the free throw, which is a free throw made from the free throw line without the interference of the opponent (B.Amalia at el 2024). The success of making free throws greatly determines the outcome of the match, because every point earned from free throws can determine the team's victory. However, in practice, many basketball players at the club level have difficulty making free throws accurately.

One of the relevant technical factors is the flexibility of the wrist, which affects the direction, spin, and strength of the ball when released. In shooting mechanics, the wrist plays an important role in providing spin and final control of the ball. Lack of flexibility can cause movement to become stiff, thus reducing the accuracy of the shot (G.Setiyadi at el 2019). Good flexibility allows players to better control the ball and produce smooth, on-target throws. Conversely, suboptimal flexibility can cause the throw to be less accurate and the ball not to reach the hoop. In addition, psychological factors such as confidence levels also play a big role in the success of the free throw. Players who have high confidence tend to be more focused and calm when making throws, so the results are better than players who feel nervous or hesitant (R.Agung Prabowoo 2023).

On the other hand, psychological aspects such as confidence also greatly affect athlete performance. A player who has perfect technique may fail to execute a free shot due to psychological pressure or lack of self-confidence. Confidence increases calmness, focus, and informed decision-making, including in stressful situations such as free throws (M.Lochbaum at.el 2023). . Confidence does not just exist in the athlete's self-performance, but confidence must be trained and motivated to change the mindset of athletes and the main capital to achieve maximum achievement as an athlete (H.Akmal Fauzan 2021).

Athletes who have good confidence will have stronger confidence in their own abilities and opinions and allow them to be more effective at doing things so that they are able to achieve success. Self-confidence is also influenced by objective aspects related to the aspect of achievement motivation, namely feedback/evaluating the individual, an assessment of oneself is very important seen from individuals who have high self-esteem and motivation are very fond of *Feedback* for the work he has done (F.Risqi and Arsila 2021)

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METHODS

The method used in this study is a descriptive quantitative method. The quantitative method is a research method that is inductive, objective and scientific in nature where the data obtained is in the form of numerical numbers (scores, values) or statements that are assessed and analyzed by statistical analysis.Quantitative research is usually used to prove and disprove a theory**.**

Types of research

This research is a type of descriptive quantitative research.

Population

Population is a generalized area consisting of: objects/subjects that have certain qualities and characteristics that are determined by the researcher to be studied and then drawn conclusions. Therefore, from this understanding, the population in this study is Gotte Basketball Club KU 20

Data Collection Techniques

This study uses total sampling techniques in data collection and uses several research instruments including using backstretch test instruments, confidence questionnaires and free throw tests.

Research Instruments :

Backstratch Tests

AGE (YEAR)	GENDER	GOOD FLEXIBILITY (CM)	MEDIUM MALLEABILITY (CM)	LESS MALLEABILITY (CM)
20-29	MEN	> 0	0 TO -5	< -5
	WOMEN	> 2	2 TO -3	< -3
30-39	MEN	> -1	-1 TO -6	< -6
	WOMEN	> 1	1 TO -4	< -4
40-49	MEN	> -2	-2 TO -7	< -7
	WOMEN	> 0	0 TO -5	< -5
50-59	MEN	> -3	-3 TO -8	< -8
	WOMEN	> -1	-1 TO -6	< -6
60+	MEN	> -4	-4 TO -9	< -9
	WOMEN	> -2	-2 TO -4	< -7

Source : Rikli, R. E., & Jones, C. J. (1999).

Confidence Questionnaire

NO	STATEMENT	1	2	3	4	5
1	Compare the confidence you feel right now in your ability to master the skills necessary to succeed with the most confident athletes you know.					

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2	Compare the confidence you feel right now in your ability to make critical decisions during competitions with the most confident athletes you know.	
3	Compare the confidence you feel right now in your ability to perform under pressure with the most confident athlete you know.	
4	Compare the confidence you feel right now in your ability to execute a successful strategy with the most confident athlete you know.	
5	Compare the confidence you feel right now in your ability to concentrate enough to succeed with the most confident athlete you know.	
6	Compare the confidence you feel right now in your ability to adapt to different competitive situations and still succeed with the most confident athlete you know.	
7	Compare the confidence you feel right now in your ability to achieve your competitive goals with the most confident athletes you know.	
8	Compare the confidence you feel right now in your ability to succeed with the most confident athlete you know	
9	Compare the confidence you currently feel in your ability to think and respond successfully during a competition with the most confident athlete you know	
10	Compare the confidence you feel right now in your ability to face the challenges of competition with the most confident athletes you know.	
11	Compare the confidence you feel right now in your ability to succeed based on your preparation for this event with the most confident athlete you know	
12	Compare the confidence you feel right now in your ability to perform consistently enough to succeed with the most confident athlete you know	

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13	Compare the confidence you feel right now in your ability to bounce back from poor performance and achieve success with the most confident athlete you know

Source: Robin S. Vealey 1986

Free Throw Tests

NO	NAME	NUMBER OF ATTEMPTS	FREE THROW SUCCEEDS	SCORE	CATEGORIES
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

Free Throw Scoring Norms

SCORE (%)	PERFORMANCE CATEGORIES	DESCRIPTION
90%-100%	EXCELLENT	Athletes have excellent free throw skills.
75%-89%	GOOD	Athletes have good free throw skills.
50%-74%	ENOUGH	Athletes have sufficient free throw ability
<50%	LESS	Athletes need to improve their free throw skills.

RESULTS AND DISCUSSION

This study aims to determine the influence of wrist flexibility and confidence on the results of shooting free throw basketball. The researcher conducted this study at the Gotte Basketball Club of Bandung Regency. The researcher chose the basketball club for the reason that the researcher has experience or relationship with the club, so that it can facilitate access to informants or respondents and there is no similar research in this place.

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The researcher obtained data using tests and questionnaires distributed to the athletes of the Gotte Basketball Club KU 20 with a total of 12 respondents. The questionnaires given to each athlete are questionnaires about confidence which have 13 statements.

From the results of the questionnaire given to the respondents, the following data was obtained:

MODEL SUMMARY

Model	R	R^2	Adj R^2	Std. Error	F	Sig. (F)
1	—	0.729	0.669	—	12.13	0.00279

ANNOVA

Source	df	SS	MS	F	Sig.
Regression	2	—	—	12.13	0.00279
Residual	9	—	—	—	—
Total	11	—	—	—	—

COEFFICIENT TABLE

Predictor	B (Unstand.)	Std. Error	Beta (Standard.)	t	Sig.	95% CI (Lower - Upper)
(Constant)	-4.472	3.069	—	-1.457	0.179	-11.414 to 2.469
Skor Kelentukan	2.758	0.659	—	4.185	**0.002**	1.267 to 4.249
Skor Kepercayaan Diri	0.076	0.062	—	1.226	0.251	-0.065 to 0.217

Flexibility – Free throw

1. Regression Coefficient (β) = 3.00, meaning that every increase of 1 level of flexibility category (from "Less" to "Medium", or from "Medium" to "Good") will increase the *free throw* score by 3 points.

2. $R^2 = 0.684$, meaning that 68.4% of the variation in the free throw score can be explained by wrist flexibility.

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3. p-value = 0.0009 (< 0.05) → this result is statistically significant, indicating that flexibility has a significant effect on free *throw results*.

Wrist flexibility has a strong and significant effect on the success of free throws.

Confidence – Free throw

1. Regression Coefficient (β) = 0.15, meaning that a 1-point increase in confidence score is expected to increase the free throw score by 0.15 points.
2. $R^2 = 0.203$, meaning that only 20.3% of the variation in the free throw score is explained by confidence.
3. p-value = 0.141 (> 0.05) → not significant, meaning statistically confidence is not strong enough to predict the outcome of the free throw.

Confidence showed a positive but not statistically significant influence on free throw results

Here are the results of a simple linear regression analysis for two models: the effect of flexibility and confidence on free throw outcomes.

Simple Linear Regression Results

Models	R-squared	F-statistic	p-value (F-statistic)	Coef (X)	p-value (X)
Flexibility → Free Throw	0.6842	21.6722	0.0009	3.0000	0.0009
Confidence → Free Throw	0.2030	2.5478	0.1415	0.1545	0.1415

Model: Flexibility + Confidence → Free Throw

1. Flexibility Coefficient = 2.76 (p = 0.0023) → significant, remaining the main predictor.
2. Confidence Coefficient = 0.076 (p = 0.25) → insignificant, the contribution was small in the model.
3. Model $R^2 = 0.73$ → means that 73% of the variation in the free throw score simultaneously can be explained by the combination of the two variables.

In multiple models:

1) Flexibility remains a strong and significant effect, even when controlled with confidence.

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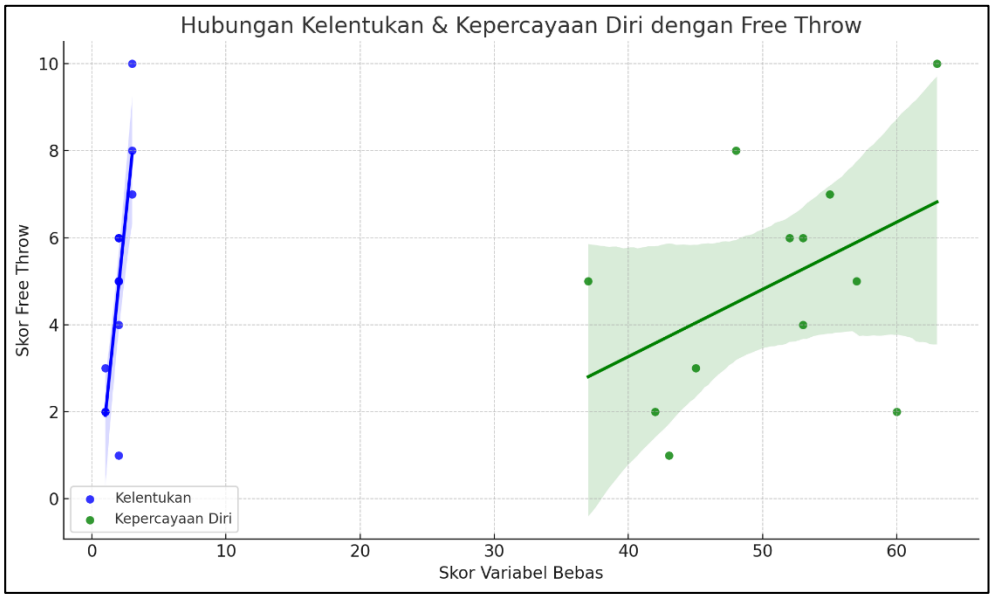
2) Confidence doesn't make an additional significant contribution to explaining *the free throw* score.

3) The model is quite robust overall (high R^2 and F-statistically significant).

The following are the results of multiple linear regression analysis for flexibility and confidence variables on free *throw results*. The table displays the regression coefficient, p-value, and t-statistic for each predictor.

Multiple Linear Regression Results

Parameters	Coefficients	p-value	t-statistic
const	-4.4721	0.1789	-1.457
Skor_Kelentukan	2.7579	0.0023	4.184
Skor_Kepercayaan_Diri	0.0764	0.2512	1.226



The Influence of Wrist Flexibility and Confidence with Free Throw Results

Confidence

Correspondence	Baku Junction	Variance	Percentage
49,67	8,239	67,879	100%

The results or data obtained by the researcher can be seen from table 4.1. In the table, it is known that the confidence of Gotte Basketball Club athletes has an average score of 49.67; standard deviation of 8,239; variance of 67,879 with a percentage of 100%.

CONCLUSION

Wrist flexibility has a significant influence on the result of free throws. The results of the analysis showed that any increase in flexibility had a positive impact on the accuracy of the throw. This variable explains 68.4% of the variation in free throw scores independently ($R^2 = 0.684$; $p = 0.0009$). Confidence does not have a significant effect on the free throw result. Although confidence is theoretically important in sport, regression results show that only 20.3% of free throw score variations can be explained by confidence ($R^2 = 0.203$; $p = 0.141$), so they are not statistically significant in this context. Simultaneously, wrist flexibility and confidence contribute significantly to the result of the free throw. The combination of the two variables explained 73% of the variation in free throw results ($R^2 = 0.73$), but flexibility remained the dominant and significant factor ($p = 0.0023$), while confidence remained insignificant ($p = 0.25$).

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