



Rugby Passing Test Instruments: Validity and Reliability in the Indonesian Version

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Abstract

Accuracy is the key to success in passing rugby. Rugby accuracy tests have been developed and applied for a long time in western countries. However, its application in Indonesia only imitates previous tests by the country without validation and reliability tests. Therefore, the purpose of this study is to find out whether the measuring tool for rugby passing accuracy is suitable for use in the sport of rugby for athletes in Indonesia. The research was carried out by carrying out an accuracy test on 30 participants and then the results were processed and analyzed using IBM SPSS 26. This study uses a quantitative method to identify the results of the validity and reliability data of accuracy test instruments. The data analysis technique used Pearson correlation and Cronbach alpha indicator on IBM SPSS 26. Based on the results of the validity test, the results of Pearson correlation analysis with 30 athletes were declared valid, namely $0.703 > 0.361$ and reliable with a Cronbach's alpha value of 0.810. Thus, the instrument can be declared suitable for use as a measuring tool in the research data collection process.

Keywords: *Atlet Rugby, Measuring Instruments, Passing Accuracy, Rugby, Validity And Reliability*

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INTRODUCTION

Rugby is a team sport that demands a complex combination of physical, technical, and tactical abilities (Mosey et al., 2020). In Indonesia, rugby has experienced significant growth over the past decade, with increased participation and performance improvements, as evidenced by the number of regional and national level events (Hopkinson et al., 2025). Rugby requires every player to have superior abilities that play an important role in fundamental skills such as passing, tackle, and scrummaging (World Rugby, 2019). Among these skills, passing plays a crucial role in maintaining the continuity of the attack, effectively moving the ball between players, and mastering the rhythm of the game (Fuller, 2025). Passing in rugby has the same purpose as other sports, which is to pass the ball to teammates in order to create space. Players can create tries to the opponent's try line and can defend their own defensive area. Having qualified passing accuracy will create a good run of the game so that the team can score a lot of points (Harahap et al., 2019). Based on the initial observations of the Indonesian rugby team, it was found that although most athletes have a good understanding of the tactics of the

game, basic technical skills, such as passing, are often inconsistent, especially in terms of accuracy of direction and distance. Passing accuracy is an indicator of technical skill that determines a team's success in building an attack and maintaining dominance of the game (Paul R Worsfold, 2017).

In the sport of rugby, team development has increased the participation of all circles in Indonesia, but the technical aspects of the game, especially passing accuracy, remain a challenge in its development (Kvasnytsya et al., 2025). The goal is that each individual player must develop the perfect technique to achieve high efficiency. It is reasonable to say that every function that has a role in the game has inherent technical aspects including standing still waiting for the next action to develop (S. Putra et al., 2023). Therefore all must be trained for optimal performance, individually and collectively. Several studies have shown that depending on the complexity of the skills to be learned, between 5,000 and 15,000 correct repetitions of skills are required to achieve automation and engineering literacy (Ardiyansyah et al., 2023)

Evaluation or test is a fundamental component in determining the success of the implementation of a program (Ambiyar, 2019). In the context of sports, measurement instruments function to obtain information related to skills, interests, motivations, and other characteristics possessed by athletes. Therefore, an instrument must have an adequate level of reliability and validity according to the population and the context of its application.

Validity is a crucial aspect in measurement because it reflects the instrument's ability to accurately measure the construct in question (Zayrin et al., 2025). Validity testing is required to ensure the level of feasibility and suitability of the instrument as a scientifically accountable measuring tool. One of the essential dimensions of validity is the validity of the content. Content validity refers to the extent to which the items in the instrument represent and comprehensively reflect the domain or construct to be measured (Ramadhan et al., 2024).

Rugby passing accuracy test instruments are widely used to determine the level of accuracy and ability of rugby athletes in the international scope (Rizqi et al., 2024). However, in its implementation, there has been no in-depth analysis of the valid and relevant rugby accuracy test used in Indonesia. The development of a passing accuracy test is indispensable to determine the accuracy of passing in athletes to ensure that the training program made by the coach is in accordance with the actual development and progress of the athlete (I. B. Putra et al., 2024).

With the availability of valid measuring instruments, further studies can carry out appropriate measurement tests (Chiwaridzo et al., 2025). Although the measuring tool for passing accuracy developed by Western researchers has been declared valid and reliable for measuring, the domain or aspect contained in it does not necessarily represent the aspects of athletes in Indonesia. The development and validity of the passing accuracy test tool was carried out to find out whether the passing accuracy test tool used as a basis can be used in athletes in Indonesia, so the author conducted a validity test on the measuring tool for rugby passing accuracy. his study aims to test the validity and reliability for passing accuracy in Indonesia, to prove that the rugby passing accuracy test that has been widely used is valid and relevant for Indonesian rugby athletes.

The population in this study is all members of Indonesian rugby. At the same time, the sample consisted of 30 athletes, selected deliberately based on the following criteria: actively participated in regular training for at least the last 6 months, and were in good physical condition at the time of the study (Fuller, 2025). The data collection took place at the Gelora Merdeka Stadium, Sukoharjo District, Sukoharjo Regency, Central Java Province. This location was chosen because the field is the venue for the BK PorProv match to take place, so it represents the actual performance of the athletes in a familiar and controlled environment.

METHOD

This study uses a quantitative method that is compiled using a measuring instrument in the form of an accuracy test instrument (Fraenkel et al., 2022). In carrying out the research, the researcher provided tests with instruments that had been provided beforehand. Then 30 respondents carried out the test that had been prepared alternately for 2 attempts. The results of each experiment were recorded and then processed by the researcher using IBM SPSS 26 as the data analysis tool. Quantitative research was conducted to identify the results of validity and reliability data where the instruments that have been provided by the researcher based on the data that have been obtained to find out whether this measuring tool for rugby passing accuracy can be used to measure the accuracy of passing in rugby for athletes in Indonesia.

The validity test is used to prove the accuracy of the question items in the research instrument and measure the clarity of the framework in a research. The instrument to be used in the research must have been declared valid and reliable. The indicator in each instrument is said to be valid if the calculated r value is greater than the r of the table (Meivera et al., 2022). The results of r calculation will be compared with r in the table where $df=n-2$ with a significant level of 5 %. The higher the validity of the instrument indicates the more accurate the

measuring tool is in measuring a data (Amanda et al., 2019). After the validity test is carried out, then a reliability test is carried out. There are several formulas that can measure the level of reliability asked: Spearman Brown, Kuder Richardson (KR-20 or KR-21). The formula used in reliability testing is Cronbach's Alpha (Tavakol, M., & Dennick, 2011). Reliability test is carried out after the validity test, this is to find out whether the measuring instrument can be used or not (Puspasari et al., 2022).

Reliability measurements in this study were assisted by SPSS for the Cronbach Alpha (α) statistical test. The results of the Cronbach Alpha (α) statistical test will determine whether the instrument used in this study is reliable to use or not (Sarkawi et al., 2018).

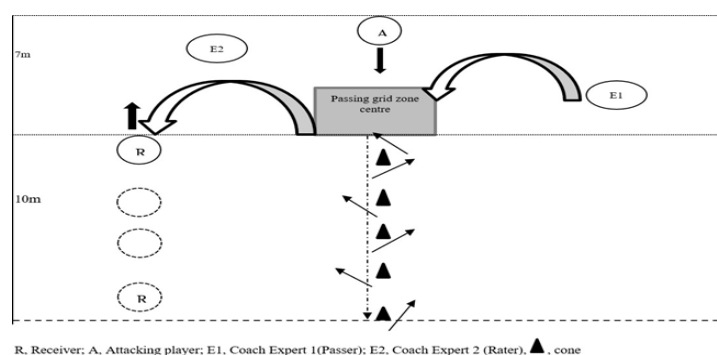
SPSS (Statistical Product for Service Solution) is a statistical computer program that is able to process statistical data quickly and accurately (Hasyim & Listiawan, 2015). The SPSS application can provide convenience for students in the process of analyzing research data (Asmara, 2020). Used in various market research, quality control and improvement as well as scientific research (Swarjana et al., 2022). The use of this program makes it very easy for researchers to process data because they will get the results of the analysis which are then interpreted (Atmajayani et al., 2021). Data processing is carried out twice to ensure the accuracy of the results according to the predetermined limits.

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The instrument tested was a test to measure passing accuracy, explained about the sequence in conducting tests on Indonesian rugby athletes as a sample. Sleep test players face down with chest facing down and supine position on the ground with knees in an extended position behind the starting line (Chiwaridzo et al., 2025). When someone pronounces on the word "go" from the instructor, the subject, then picks up a ball placed on the touch line and then runs a zig-zag on a 10m trajectory marked with a cone.

- a) After reaching the passing zone which measures 3m x 3m, the subject must release the rugby ball and then receive a pass from one of the expert coaches.
- b) After catching the ball, the subject must immediately pass the ball to the moving target (R) Placed at a distance of 7m and face the approaching defender.

- c) The target (R) starts moving from the starting line and moves slowly following the speed of the test player in anticipation of receiving the ball.
- d) Operan harus dilakukan dari pusat zona passing.
- e) Two rugby experts assess the pass and if the pass is inadequate then the pass is repeated.
- f) After running, the subjects should return to the starting line and repeat the test, but without being in the initial bending position. Start each 10m sprint with a 20-second cycle and repeat five times to form a set. Repeat the second set 1 minute after completing the first set with the participant Back in a bent position with his chest on the ground. Rest again for 1 minute after completing the second set of five runs before starting the final third stage of the repetition to complete the final third set. In short, 15 runs were performed in three sets of 5 times each.
- g) Rating



Picture of the Southeast African version of the passing accuracy test

Figure 1. Procedure for carrying out passing accuracy test

A score of 0 is not achieved or 1 is achieved. passing accuracy (including passes received by the receiver), expressed as a percentage of the total passing and expressed as the passing accuracy score (%). The technical criteria for the assessment include the movement, seeking precision with a single movement through a straight follow-up of the passing hand while the ball has the appropriate speed and the passing position is in front of the receiver. The receiver catches the ball while maintaining his pace with minimal reduction in speed to receive the ball.

Running and catching ability tests. Players start from the starting point and from a prone position start the test. run 10m with the ball in hand. After reaching the catch grid zone (marked 3m x 3m), the ball is thrown immediately from a distance of 7m in the test player to demonstrate

the ability to catch the ball. An attacking player gives a Protocol pass challenge for an assessment of passing ability and accuracy.

RESULTS AND DISCUSSION

Result

From the results of this data which presents the results of the research, regarding the validity and reliability test of the Rugby Passing Test in the Indonesian version. his analysis was carried out to assess and determine the level of validity and consistency of the instrument used as a measuring tool for passing accuracy in rugby. The test results are presented systematically to provide an overview of the validity of the passing accuracy instrument in the context of use in Indonesia. In the results of the accuracy data that has been generated, it is known that the validity and reliability tests are declared valid. There were 30 samples that had taken part in the passing accuracy test conducted by the researcher. In its implementation, pre-tests were carried out to produce data that made the measuring tool for the accuracy of passing rugby can be followed by athletes in Indonesia.

Regarding the results of the passing accuracy test obtained by athletes who got good results, in the first test a score of 15 could be achieved by 6 athletes, score 14 was obtained by 14 athletes, score 13 was obtained by 8 athletes, score 12 was obtained by 1 athletes, score 11 was obtained by 1 athletes. And for the second test, the score produced was better overall than all athletes got an increase in the second test, namely a score of 15 can be obtained by 16 athletes, a score of 14 obtained by 10 athletes, a score of 13 obtained by 4 athletes. From the results obtained from the first and second tests, all athletes managed to get better scores in the second test.

Table 1. Validity Test Results of the Rugby Passing Accuracy Test

Correlations		
	VAR00001	VAR00002
VAR00001 Pearson Correlation	1	.703**
Sig. (2-tailed)		.000
N	30	30
VAR00002 Pearson Correlation	.703**	1
Sig. (2-tailed)	.000	
N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

Seen in the table above, the passing accuracy test is valid because the r-count is greater than the r-table, which is $0.703 > 0.361$ and the sig value (2 tailed) is less than 0.05 and can be seen in table 1.

Table 2. Reliability test of the Rugby Passing Accuracy Test

Reliability Statistics	
Cronbach's	
Alpha	N of Items
.810	2

Judging from the table above, it can be stated that the passing accuracy test in this study is considered reliable and reliable because the results of the reliability test above show that Cronbach's Alpha value is more than 0.80, which is 0.810. Therefore, the passing accuracy test can be used for data collection and can be seen in table 2.

Discussion

Validity Results of the Rugby Passing Test

Validity test is a test that is carried out to measure the ability of a measuring instrument (instrument) whether each question presented in the measuring instrument can be said to be valid or not (Court et al., 2021). In the validity test, there are criteria used as a benchmark that states whether or not the question item used for research is valid or not (Louis Cohan, Lawrence Manion, 2017). The criterion is to compare the value of the r-count (Pearson correlation) with the value of the r-table. If $r \text{ calculates} > r\text{-table}$, then the research instrument is declared valid, on the other hand, if $r\text{-calculates} < r\text{-table}$, then the research instrument is declared invalid (Franzese, M., & Iuliano, 2018). Based on the results of data processing in the table above, it can be seen that the results of the validity test on the instrument processed using SPSS, the passing accuracy test is valid because the r-calculation is greater than the r-table, which is $0.703 > 0.361$ and the sig (2 tailed) value is less than 0.05. The validity test on this instrument uses the Pearson correlation statistical test.

Reliability Results of the rugby passing accuracy test

The instrument reliability test is used to determine whether the instrument used is consistent or fixed so as to avoid measurement errors (Court et al., 2021). The reliability test was carried out using the Cronbach's alpha value indicator with significant levels/levels of 0.5,

0.6, to 0.7 depending on the needs of the research. If Cronbach's alpha value $>$ a significant level, then the instrument can be said to be reliable. Meanwhile, if Cronbach's alpha value $<$ significant level, then the instrument is said to be unreliable (Villarejo et al., 2014).

If Cronbach's alpha value $>$ a significant level, then the instrument can be said to be reliable. Meanwhile, if Cronbach's alpha value $<$ significant level, then the instrument is said to be unreliable: If the alpha value $<$ 0.50 is declared low reliability, the alpha value $<$ 0.70 is declared moderate reliability, the alpha value $>$ 0.70 is declared sufficient reliability, the alpha value $>$ 0.80 is declared strong reliability, and if the alpha value is $>$ 0.90, it is declared to be perfect reliability. The results of the reliability test from the rugby passing accuracy test with a significant level of 0.8 so that Cronbach's alpha value of 0.810 was obtained. Based on the results of reliability testing using Cronbach's alpha coefficient, the rugby passing accuracy test instrument showed a strong level of reliability. Thus, the instrument can be declared to have good internal consistency and is suitable for use as a measuring tool in the research data collection process. These findings indicate that the use of the same instrument on repeated measurements tends to produce stable and consistent data (Dewi et al., 2022).

CONCLUSION

Based on the results of the above study, it was found that the validity test that the researcher had conducted using Pearson correlation analysis with 30 athletes was declared valid because the r -count was greater than the r -table, which was $0.703 > 0.361$ and the sig value (2 tailed) was less than 0.05. Meanwhile, the results of the reliability test from the rugby passing accuracy test using the Cronbach alpha method were obtained with a value of $0.810 > 0.6$. Thus, the instrument can be declared to have good internal consistency and is suitable for use as a measuring tool so that this passing accuracy test instrument can be used by future researchers with different variables, respondents, number of respondents, and time.

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