Validity and Reliability Test of Badminton Smash Accuracy

Eval Edmizal[1*], Eri Barlian[1], Donie[1]

Universitas Negeri Padang, Indonesia

Article Info	ABSTRACT
	An instrument must be verified for validity and dependability to produce accurate research data for conclusions based on actual circumstances. This investigation seeks to establish the validity and reliability of badminton smash accuracy. The population of this study was thirty respondents. The sampling method employed purposive sampling with a sample size of 24 respondents. Data collection of smash accuracy using the Shaleh Anasir smash accuracy test, testing the validity of smash accuracy by correlating the results of the Shaleh Anasir smash accuracy test with the developed smash accuracy test, and testing the reliability of smash accuracy by linking the results of the first test and the second test of smash accuracy. Based on the collected data analysis, the level of validity of badminton smash accuracy is 0.84, which is excellent, while the level of reliability of the smash accuracy test is 0.78, which is acceptable.

Corresponding Author:

Eval Edmizal,
Universitas Negeri Padang
Email: evaledmizal@unp.ac.id

Introduction

Badminton is one of the most popular sports among children and adults in Indonesia and around the world (Arganata, 2016; Maulina, 2018). Children and adults frequently compete in local and international badminton matches, demonstrating the sport's popularity. Badminton is a sport played with racquets and shuttlecocks by two opposing players (singles) and two opposing pairs (doubles) (Fariz & Januarto, 2022). The concept of badminton is to strike the shuttlecock with a racket so that it passes the net in the middle of the court and into the opponent's assigned area.

Badminton is one of the sports with fast game features and sophisticated basic skills, where players must be able to make quick actions such as jumping, running, stepping over, stepping forward, etc. (Sudiadharma et al., 2022). These abilities are associated with elements of accomplishment, such as technical ability and physical condition ability. Technical ability is the foundation and key to badminton games to reduce the incidence of playing-related injuries (Setiawan et al., 2020). These fundamental technical skills include forehand, backhand, smash, etc. In addition, physical ability is described as the fundamental capacity to execute badminton methods and actions. These physical abilities include strength, coordination, reaction speed, precision, etc. This fundamental skill assists badminton players in winning games and achieving tremendous success. To improve the quality of badminton games, it is vital to understand fundamental skills and have appropriate physical abilities to play the sport competently (Sudiadharma et al., 2022).

The smash attack is one of the basic techniques in badminton. The smash attack is a staple every player must possess, especially in matches; to win a game, a player must have excellent skills. The smash attack includes a sharp and quick ball speed. The smash attack strikes the opponent's field with a challenging and steep downward blow (Sukmara & Tri, 2017). The ferocity of the smash attack is meaningless if the ball is not on

target, as indicated by the direction of the ball's fall outside of the opponent's court. Thus, a good smash ability necessitates accuracy in placing the ball in the winning zone. The definition of accuracy is a person's ability to move or direct a motion to a target following the desired outcome (Bayu Akbar Harmono, 2014). In addition. Accuracy is defined as the capability of a movement to reach a specific target based on the desired target (Gyta et al., 2018).

Badminton smash accuracy is a technique that the player must master to stop the opponent's movement (Yudabbirul & Andriano, 2019). Smash accuracy in badminton is characterized by a complex and steep blow to the desired opponent's court, preventing the opponent from turning the ball into our court as much as possible. Imam (2016) states that a smash attack is effective if it meets three criteria: speed, precision, and accuracy. Therefore, the accuracy of a badminton smash can only be performed optimally with the support of exceptional physical abilities.

Understanding the increase or decline in badminton players' abilities is crucial to evaluate training that boosts performance. The proper tool is required to determine whether or not badminton players can master the court (Endang Sepdanius et al., 2019). Based on the theory of smash accuracy discussed previously, it should be a measuring tool that has been tested for validity and reliability so that it can measure the level of ability of badminton athletes in a tested manner, which can then be used to improve the accomplishments of badminton athletes.

The quality of the research instrument is determined by the validity and dependability of the measuring instrument employed. Several shreds of evidence, including content validity or content validity, construct validity, and criterion validity, can demonstrate an instrument's validity. Content validity is defined by a focus that gives evidence on the aspects of the measuring device and is processed by a rational analysis evaluated by specialists (Febrianawati, 2018). Construct validity focuses on the degree to which the measuring instrument displays measurement findings that are consistent with its definition. The focus of criterion validity is on comparing the developed tool to other tools deemed comparable to what will be examined by the forged instrument. It is valid when the instrument accurately reveals data from variables without departing from the actual situation. In addition, dependability can be evaluated using a variety of tests, including test-retest, equivalent, and internal consistency. When the instrument reveals reliable data, it is deemed reliable (Arikunto, 2010). In addition, according to Arsil and Romi (2017), "the value between 0 and +1 shows the amount of reliability." In the statistical study of the coefficient of test reliability, the higher the coefficient, the more trustworthy the test. Furthermore, the test could be more reliable, with a smaller coefficient. Continuous development of products or research instruments is required to obtain the results of measuring athletes' athletic ability, so a very excellent measurement instrument can be found based on good and accurate testing following scientific principles.

Based on the characteristics of the capacity to smash accurately in badminton, there is a need for innovations in the development of test tools for assessing smash accuracy. This training instrument has been validated by badminton specialists and tested in both small-scale and large-scale trials. It is hoped that this device can measure the accuracy of badminton smashes so that test tools can be added. The research was done to determine a classification of assessment norms that had been tested for validity and reliability.

Method

This study employs a quantitative and descriptive methodology. Researchers are interested in the validity and dependability of the badminton smash accuracy test instrument. The population of this study consisted of 30 badminton players. The sampling method employs purposive sampling based on the criteria of athletes with an athlete history and an excellent essential ability to play badminton, yielding 24 samples for the study.

This research seeks to establish the validity and reliability of the Shaleh Anasir badminton smash accuracy tool. Content validity and empirical validity are used to obtain data about instrument validity. The content validity of an instrument is determined by administering it to three specialists: test and measurement experts, badminton coaches, and badminton lecturers. After establishing the instrument's content validity, two badminton instructors helped with examinations on 24 samples.

After collecting instrument validity data, the next stage is to obtain instrument reliability data through repeated testing. A valid instrument was used to analyze the material on two separate days. To assess the collected data, a straightforward correlation test will be conducted. The sample's smash accuracy test results will be correlated with the smash accuracy in Shaleh Anasir. The results will determine the instrument's validity if the correlation coefficient is high. The researcher will then examine the correlation between the outcomes of the

first and second badminton smash accuracy tests to assess the level of instrument dependability. Pearson's product-moment correlation is the statistical analysis utilized to determine the instrument's level of reliability.

Results and Discussions

Based on data analysis, the value of the badminton smash accuracy test in Shaleh Anasir was determined by correlating 24 research samples. The correlation coefficient is r = 0.84, indicating that the Badminton Smash Accuracy test conducted on 24 research samples is valid. Therefore, Badminton Smash Accuracy belongs to the category with excellent validity. According to Arsil and Adnan (2010), the validity coefficient is a value ranging from 0 to 1 that indicates whether a test is valid or invalid. The greater the validity of a trial, the more appropriately it can be utilized; conversely, the lower the coefficient of validity of a test, the more questionable its measuring accuracy.

The smash accuracy test can be used to determine the level of badminton smash accuracy based on the r value of 0.84. According to Donald K. Mathews and Aziz (2008), the following validity constraints apply: 0.00 - 0.37 = Inapplicable, 0.38 - 0.57 = Clearly Related, 0.58 - 0.67 = Acceptable, 0.68 - 0.77 = Good, 0.78 - 0.82 = Very Good, and 0.83 - 1.00 = Outstanding.

The reliability coefficient quantifies the degree of consistency required to determine the validity of a test as a measuring tool. The range of the index is -1 to 1. The greater the reliability of a trial, the greater the trust in its usage; conversely, the lower the reliability of a test, the lower the determination in measuring.

The correlation coefficient between the badminton smash accuracy test results and the Badminton Smash Accuracy test-retest in Shaleh Anasir is r = 0.78, indicating that the badminton smash accuracy test instrument on 24 samples can be determined by correlating the smash accuracy test value with the badminton smash accuracy retest. With a correlation coefficient of r = 0.78, it can be concluded that the badminton smash accuracy test is dependable. Therefore, badminton smash accuracy's specific level of dependability falls within the sufficient group. This is consistent with the opinions of other experts, such as K. Mathews in Aziz (2008), who claimed the following reliability limits: 0.00 - 0.67 = Ineffective, 0.68 - 0.77 = Poor to Acceptable, 0.78 - 0.87 = Acceptable, and 0.88 - 1.00 = Outstanding.

The badminton smash accuracy test device can assess the accuracy with which athletes execute smashes. The accuracy test is crucial because a player must aim the shuttlecock onto the opponent's court until the opponent can no longer turn it. The smash accuracy test was also created to collect information regarding the smash accuracy of badminton competitors.

A Badminton smash accuracy test is essential, given the need for more current information on the topic. The significance of the role of accuracy in smashing during badminton matches necessitates the rapid development of this test so that information regarding the accuracy of player smashes can be collected, analyzed, and then evaluated by trainers. A good badminton player must be determined to smash to raise the proportion of wins throughout a match.

The smash is the strength of a badminton player who can rack up points (Poole, 2007). The accuracy of the shuttlecock's landing within the opponent's court is crucial for maximizing a smash's point-scoring potential (Sudeni et al., 2021). Accuracy in smashing is essential for a badminton player since a smash shot involves accuracy or accuracy that aims to regulate body movements in hitting the shuttlecock in the desired direction and distance (Gyta et al., 2018). In sports science, badminton-specific sports performance testing is regarded as one of the most effective methods for measuring an athlete's skill (Christopher & Ben, 2015). Consequently, based on researchers' findings that examined the validity and dependability of badminton smash accuracy, it becomes a tool that may be applied effectively.

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Conclusions

Based on the findings of the researchers and the preceding discussion, it can be stated that the instrument produced already meets the criteria for measurement, namely, its smash accuracy validity and badminton smash accuracy reliability may be accepted based on scientific testing. For the test instrument to measure the precision of badminton smashes. According to the researchers' conclusions, this gadget is appropriate for evaluating the accuracy of badminton smashes.

Acknowledgments

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