



Analysis of The Quality of Dribbling Techniques of Inspire Club Futsal Athletes Based on The Time Take to Complete Tests with and Without The Ball

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Article History

Received January 2026

Accepted January 2026

Published Vol.15 No.(1) 2026

Keywords:

Dribbling; Futsal; Ball Control; Athletic Performance

Abstract

This study aims to analyze the quality of dribbling techniques of female athletes of the Inspire club based on the comparison of travel time in the zig-zag test with the ball and without the ball as an objective indicator of technical ability. This study uses a quantitative method with a descriptive – comparative approach. The research subjects amounted to 15 female futsal athletes of the Inspire Club who were selected using purposive sampling techniques. The instrument in this study is in the form of a zig-zag dribbling test with the ball and without the ball, with the main measurement variable being travel time. The data analysis used was descriptive statistics and the Paired Sample T-Test test to determine the difference in performance between the two test conditions. The results showed that the average dribbling time with the ball (19.82 ± 2.96 seconds) was significantly slower than that of the test without the ball (13.07 ± 1.11 seconds). The results of the statistical test found that there was a significant difference between the two tests ($p < 0.05$). This shows that the ability of athletes to maintain speed when carrying the ball is not optimal. These findings show an imbalance between the ability to run speed without the ball and dribbling skills when carrying the ball. Based on these results, it can be concluded that the quality of the dribbling technique of Inspire Club futsal athletes has not developed in line with the ability to run speed without the ball, so a more specific, progressive, and game-like training program is needed to improve ball possession at high speed.

How to Cite

Supyana, Z. L., Imanudin, I., & Umaran, U. (2026). Analysis of The Quality of Dribbling Techniques of Inspire Club Futsal Athletes Based on The Time Take to Complete Tests with and Without The Ball. *Journal of Physical Education, Sport, Health and Recreation*, 15 (1), 115-120.

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p-ISSN 2460-724X

e-ISSN 2252-6773

INTRODUCTION

Futsal is a rapidly developing game and is played with high intensity, fast game speed, and relatively narrow movement space (Spyrou et al., 2020). These characteristics require players to have good physical abilities and technical skills in order to be able to adapt optimally to the dynamics of the game. Futsal not only relies on running speed, but also accuracy of ball possession, coordination of movement, and decision-making in a short period of time (Marcojos et al., 2025). International research shows that the demands of futsal are much more complex than the sport of wide field games, as players are required to constantly interact with the ball in limited space and time (Spyrou et al., 2020).

The sport of futsal requires players to have a combination of speed, agility, ball possession, and quick decision-making skills to maintain optimal performance during the match (Sekulic et al., 2019). One of the technical skills that has an important role in meeting these demands is the dribbling technique, as this skill determines the effectiveness of players in creating space, passing opponents, and maintaining possession in conditions of high pressure and limited movement space (Bahtiar et al., 2023). International research shows that the quality of dribbling techniques is closely related to a player's ability to maintain speed while carrying the ball, which can be objectively measured through travel time indicators (time – based performance) (Doewes et al., 2023). However, the evaluation of dribbling techniques in the context of futsal is still dominated by subjective assessments, so the application of time-based measurements is needed as an objective indicator in assessing the quality of dribbling techniques of futsal athletes (Susworo Dwi Marhaendro et al., 2023).

Dribbling technique is a basic skill that requires a combination of speed, agility, coordination, and stable ball control. (Wulandari et al., 2024) In the game of futsal, dribbling is not only done to pass opponents, but also to maintain the tempo of the game and maintain possession of the ball under pressure, tight spaces and high intensity. Doewes et al. (2023) stating that the ability of an athlete to maintain speed while carrying the ball is an important indicator of the quality of dribbling techniques. However, most of these findings are still dominated by research on football. In fact, futsal has different game characteristics, such as a smaller field size, faster game tempo, and more complex technical demands (Naser et al., 2017). In addition, an athlete's basic speed

when moving without the ball is not always directly proportional to dribbling speed, given that dribbling demands neuromuscular coordination (Pavlović et al., 2024). These differences in characteristics show that the mastery of dribbling techniques in futsal cannot be assessed based solely on basic physical abilities, so it is necessary to further review how the relationship between the ability to move without the ball and the dribbling performance of athletes in the context of futsal games.

A phenomenon that is still often found in futsal athletes, especially in regional and non-professional clubs, is the imbalance between the ability to run without the ball and dribbling skills (Setyawan & Peking, 2023) A number of athletes are able to show optimal running speed when not carrying the ball, but experience a decrease in performance when they have to control the ball on the same trajectory. This condition is in line with the findings (Homsombat & Tunintaraarj, 2025) in Journal of Health Science and Medical Research which states that the performance of futsal players is influenced by the characteristics of neuromuscular, such as reaction time, agility, and the ability to change direction. These factors have an important role in integrating physical capacity and technical skills, especially in the context of futsal training which is specific and complex. Therefore, the application of dribbling technique evaluation based on travel time measurement is important to describe the quality of athletes' techniques objectively and accurately (Pavlović et al., 2024). Research previously, it was late to use travel time measurement as an indicator of the dribbling ability of futsal athletes, but the evaluation was generally only carried out on one condition, namely dribbling with the ball, without comparing it with the ability to run without the ball as the basis for athlete movement.

In addition, Research on dribbling technique performance is still largely focused on elite level athletes or age groups within professional academies, so the findings cannot necessarily be subtly applied to the context of non-professional clubs or coaching at the regional level (Mendes et al., 2022). This is important because the coaching environment is the main medium in the learning process and developing athletes' skills, where the coach plays a role in making decisions regarding the structure of activities and behaviors that are applied to support the development of athletes optimally (Larkin et al., 2022). This condition confirms the existence of a significant research gap, considering that there are still limited studies on the technical performance of futsal ath-

letes at the regional and amateur levels (Belo et al., 2024). Previous research analyzing futsal dribbling techniques was still dominated by male athletes or mixed groups, so the characteristics of technique performance in female futsal athletes have not been the main focus in scientific analysis. This limitation shows that the understanding of dribbling technique performance in women's futsal, especially in a non – professional coaching environment, is still not comprehensively described.

Based on these conditions, this study aims to provide a solution through an analysis of the quality of dribbling techniques of futsal athletes of the Inspire club, using the comparison of test travel time with the ball and without the ball as an objective indicator. Previous studies that only assessed dribbling skills singly, this study has a novelty by placing female futsal athletes as the main subjects and comparing the performance of athletes movements in conditions with and without the ball at the same time. This approach is expected to be able to provide a more accurate picture of the level of mastery of athletes' techniques and become the basis for measurable training evaluation. In addition to overcoming research gaps related to the lack of time-based evaluation studies in futsal, this research can also have the potential to be a scientific reference in fostering futsal achievements at the regional level which still receives minimal academic attention, especially in the context of the Inspire futsal club. This, the results of the study are expected to provide benefits for athletes through improving the quality of dribbling skills, as well as for coaches, academics, and sport practitioners, the results of this research can be used as a basis for more effective and science-evidence-based training programs.

METHODS

This study uses a quantitative method with a descriptive-comparative approach because it aims to compare the results of the dribbling test with the ball and without the ball based on travel time in Inspire Club futsal athletes. This approach allows for an objective picture of the quality of dribbling techniques through numerical analysis of test results, and then determine whether there is a significant difference in performance between the two test conditions.

The subject in this study is a female futsal athlete from the Inspire Club. Sample selection was carried out using purposive sampling techniques so that the research participants were comp-

letely in accordance with the criteria for study needs. The sample criteria include: (1) female, (2) have at least one year of futsal training experience, (3) and are in good health and have not suffered injuries during the research process. Based on these criteria, as many as 15 athletes were eligible and acted as samples in the study.

The research variables consist of independent variables and bound variables. The independent variable in this study is the test condition, namely the running test zig-zag with the ball and test run zig-zag without a ball (Maharani et al., 2024). Meanwhile, the bound variable is the quality of the dribbling technique of futsal athletes, which is measured through travel time in units of seconds on the test track. The faster the time the athlete gets, the better the dribbling quality displayed.

The instrument used to measure dribbling ability is the Zig-zag Dribbling Test which has been proven to be reliable in assessing dribbling skills with and without the ball (Maharani et al., 2024). The equipment used in the measurement process includes digital stopwatches, 6–8 cones, futsal balls, and result recording sheets. The implementation procedure begins with a briefing on the rules and examples of test implementation, then continues with a warm-up for 10-15 minutes. Athletes undergo two types of tests, namely the zig-zag test with the ball and the zig-zag test without the ball. Each athlete is given two attempts for each test, with a minimum break of three minutes between attempts, and the best time is used as the final score.

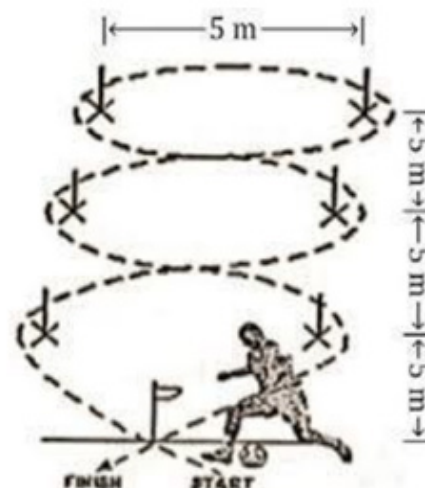


Figure 1. Research Instruments (Maharani et al., 2024)

The research data was analyzed through two stages. First, descriptive statistics are used to obtain average scores, standard deviations,

and interpretation of outcome categories as an overview of the performance of athletes' dribbling techniques. Second, the Paired Sample T-Test is used to determine whether or not there is a significant difference between the results of the dribbling test with the ball and without the ball. This test was chosen because it is suitable for comparing two measurement conditions on the same subject. The results of statistical analysis are expected to provide empirical evidence regarding the quality of dribbling techniques of Inspire Club futsal athletes and become a reference in optimizing training programs.

RESULTS AND DISCUSSION

Table 1. Test Results of Dribbling with and without the ball

Subject	Dribbling Best Time	
	With Ball	Without Ball
1	19.19	14.16
2	20.9	14.69
3	17.9	12.62
4	18.63	12.44
5	18.56	13.47
6	20.5	13.03
7	24.15	12.16
8	21	13.03
9	19.75	13.37
10	25.09	14.66
11	17.75	12.44
12	12.9	10.29
13	22.06	13.68
14	17.46	12.44
15	21.53	13.6

Table 2. Descriptive Statistics with and without the ball

Variabel	N	Min	Max	M	SD
Dribbling with the ball	15	13	25	19.82	2.956
Dribbling without the ball	15	10	15	13.07	1.108

Based on the results **Table 2** of descriptive statistics on the dribbling test with the ball, it is known that the number of study subjects is 15 athletes with the fastest travel time of 13 seconds and the slowest travel time of 25 seconds. The average value obtained was 19.82 seconds with a standard deviation of 2.956, showing that the dribbling performance with the ball between athletes has a fairly high variation. This means that

there is a striking difference between athletes who are able to control the ball well and athletes who still need to improve their dribbling skills when carrying the ball. Meanwhile, in the dribbling test without the ball, the same number of subjects were obtained, namely 15 athletes with the fastest travel time of 10 seconds and the slowest travel time of 15 seconds. The average value generated was 13.07 seconds with a standard deviation of 1.108, which means that the variation in sprint performance without the ball between athletes is smaller than when carrying the ball. This shows that most athletes have relatively even running speed when not carrying the ball, but there is an increase in performance variation when ball control elements are added.

Table 3. Paired Samples Test

Variabel	M	SD	Sig. (2-tailed)	Result
Dribbling with the ball – Without the ball	6.753	2.359	.000	Sig < α : Significant Difference

The results of the **Table 3.** Paired Sample T-Test showed a calculated t-value of 11.089 with $df = 14$, and a significance value (Sig. 2-tailed) = 0.000. The significance value was smaller than the level of research error ($\alpha = 0.05$), so it can be concluded that there was a significant difference between the results of the dribbling test with the ball and without the ball in the futsal athletes of the Inspire Club. In other words, the difference in athletes' sprint performance when carrying the ball and when not carrying the ball does not happen by chance, but statistically is completely different.

The results showed that the dribbling quality of Inspire Club futsal athletes had a significant difference between the dribbling test with the ball and the dribbling test without the ball. Based on the results of the Paired Sample T-Test, the ball without a ball results in a faster travel time than a ball test. These findings show that the basic speed and agility abilities of athletes are already developed quite well. However, when the ball element is added, the athlete's performance suffers a noticeable decline. This is in line with research (Doewes et al., 2023) which states that the ability to maintain speed when carrying the ball is an important indicator in assessing the quality of dribbling techniques in futsal players.

The better dribbling quality on the no-ball test occurs because athletes focus only on running movements and changes of direction without

having to control the ball. This condition allows athletes to move more stable and efficiently, so the variation in performance between athletes is relatively small. In contrast, in the ball-dribbling test, athletes are required to coordinate running speed, ball touch, and body balance at the same time, resulting in slower average travel time and greater variation in performance. These findings are in line with research Bahtiar et al. (2023) stating that agility and eye and foot coordination have an important role in dribbling skills in futsal athletes, this emphasizes the need to integrate neuromuscular coordination with ball control.

The findings of this study show that the analysis of dribbling quality based on the comparison of travel time between conditions with the ball and without the ball provides a more specific picture of the characteristics of dribbling techniques in female futsal athletes. The focus on women's futsal subject is an important contribution, considering that differences in performance characteristics by gender have not been widely explored in previous futsal research (Larkin et al., 2022; M. Khairin Fazri et al., 2024; Putra et al., 2025). The time – lapse evaluation approach in the context of non – professional regional clubs allows for a more objective assessment of the influence of ball control on the movement efficiency of female futsal athletes, as well as supporting the development of more contextual and relevant technical evaluation methods.

The difference in performance between dribbling with the ball and without the ball in female futsal athletes shows that training that only emphasize basic speed and agility are not enough to optimize dribbling techniques. However, the significant decrease in performance when the ball element is added indicates that the mastery of dribbling techniques at high speed still needs to be improved. These findings are in line with research Ribeiro et al. (2025) which states that the difference in physical and technical demands between training and match situations can actually affect the effectiveness of athletes' skill development. Therefore, training that does not reflect the characteristics of the game in real terms has the potential to hinder the development of futsal techniques optimally, especially in the context of women's futsal coaching.

Overall, the results of the study confirm that running speed does not directly reflect the dribbling quality of female futsal athletes. Although basic speed and agility are important components in futsal, these abilities must be supported by neuromuscular coordination, stable ball control, and the ability to maintain body balance so that they

can be applied effectively in game situations. In this context, dribbling time with the ball can be used as an important indicator in assessing the ability of female futsal athletes to maintain movement efficiency when technical demands are added. These findings provide practical implications that training in Inspire Club women's futsal needs to emphasize the simultaneous development of neuromuscular coordination, ball control, and body balance in order for dribbling skills to be applied effectively in game situations.

CONCLUSION

Based on the results of the research, it can be concluded that the quality of the dribbling techniques of Inspire Club futsal athletes differs between the dribbling test with the ball and the test without the ball. The results of the travel time measurement showed that the dribbling quality in the test without the ball was better than the test with the ball. These findings provide an empirical overview of the dribbling characteristics of women's futsal, which shows that physical ability and ball control are not fully integrated optimally at high speeds.

Furthermore, it is recommended to the coach and the club to emphasize dribbling exercises that combine elements of speed, agility, and ball control at the same time. Training programs should not only focus on improving physical abilities without the ball, but also be made like a real futsal game situation, where players are required to move quickly while having the ball. Thus, athletes can develop dribbling skills that are more stable, efficient, and appropriate in the game.

In addition, this study recommends the use of time-based tests, such as zig-zag dribbling tests with and without balls, as a routine evaluation tool in the process of coaching futsal athletes. This approach is considered more objective and reliable in assessing the quality of dribbling techniques than purely subjective assessments. For further research, it is recommended to involve a larger number of samples, different age categories, and other supporting variables such as balance, coordination, and playing experience, so that an understanding of the development of dribbling techniques in futsal can be obtained more comprehensively.

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