



STRATEGIC IMPORTANCE OF THE SERVE IN MODERN TABLE TENNIS: TECHNIQUE OF LIMITING OPPONENT'S REACTION AND SEIZING GAME INITIATIVE

Mahamatyusupova Niluzar Ilyosjon qizi
Student of the Table Tennis specialization,
Faculty of Sports Activity, Fergana State University
mahamatyusupovaniluzar@mail.com

Abstract

This article analyzes the strategic importance of the serve in modern table tennis and the technique of limiting opponent's reaction and seizing game initiative. The study examines serve performance indicators of highly qualified athletes, highlighting technical, tactical, and psychological aspects of effective serve execution. Results indicate that the serve is the most crucial technical element directly influencing match outcomes. The article describes analytical and contextual methods of serve development, as well as strategies for disorienting opponents and exploiting their weaknesses.

Keywords: table tennis, serve strategy, third ball attack, tactical analysis, spin types, receive technique.

Introduction

Table tennis has undergone significant changes over the past twenty years. Modifications in game rules and equipment have transformed table tennis into an increasingly dynamic and spectacular sport. However, against the backdrop of these changes, the serve has maintained and even strengthened its strategic importance.

The serve is the only technical element in table tennis over which the athlete has complete control. Unlike other shots, during the serve the athlete is not subject to the opponent's influence and can fully demonstrate their skill. This very characteristic makes the serve the most crucial phase of the game, as it enables



not only direct point acquisition but also creates the foundation for subsequent attacks.

The strategic importance of the serve in modern table tennis is determined by several factors. Firstly, a high-quality serve forces the opponent to transition to defense and creates a favorable situation for the "third ball" attack. Secondly, the ability to utilize various spin variations and mask them effectively allows for disorienting the opponent and limiting their reaction. Thirdly, through the serve, one can set the game tempo and achieve psychological superiority.

The purpose of this article is to analyze the strategic importance of the serve in modern table tennis and to scientifically elucidate the technique of limiting opponent's reaction and seizing game initiative.

Literature Review

The issue of the serve in table tennis has attracted the attention of numerous researchers and practitioners. Massimo Costantini, a high-level coach of the International Table Tennis Federation (ITTF), in his article "Stay at home. Train your serve!" describes the serve as the most important phase of the game and evaluates it as the "determinant of game strategy." According to him, the serve is the only action that integrates technical, tactical, and psychological elements.

A scientific study published in Frontiers journal (2023) analyzed the serve and serve reception indicators of elite table tennis players. According to the research results, significant differences exist in serve zones and reception methods between male and female athletes. Male athletes more frequently employ aggressive reception methods (flip and topspin), while female athletes often utilize the push shot.

Subham Kundu, a specialist from the JOOLA company, emphasizes the importance of developing the serve, noting that the main mistake of young athletes is insufficient attention to the serve and engaging in meaningless repetitions. According to him, serve training should have clear objectives and be oriented toward measurable results.

Coaches from the Butterfly company, Larry Hodges and others, in their articles describe three main methods of serve reception (passive, neutral, and aggressive), emphasizing that every athlete must master all these methods. This enables not only adaptation to the opponent but also unpredictability.



Representatives of the Chinese table tennis school pay particular attention to developing serve technique. The serving proficiency of renowned athletes such as Ma Long, Fan Zhendong, and Ding Ning is considered one of the key factors in their success. Ding Ning's "tomahawk" serve and Xu Xin's execution of serves from new positions are vivid examples of innovative approaches in modern table tennis.

Methodology

This study employed qualitative and quantitative analysis methods. The research was conducted in the following stages:

1. **Observation method:** Serve performance indicators of highly qualified athletes were observed and analyzed during international competitions held in 2023-2024 (World Championships, Asian Championships, WTT series).
2. **Video analysis:** Recordings of 50 matches were analyzed using specialized software. At least 100 serves were examined in each match. Serves were evaluated according to the following parameters: serve zone, type of spin, speed, height, and the opponent's reception method.
3. **Statistical analysis:** The obtained data were processed using SPSS software. Mean values, standard deviations, and correlation coefficients were calculated.
4. **Expert survey:** Interviews were conducted with 10 highly qualified coaches (5 of international category, 5 of national category). The interviews focused on serve strategy, training methodology, and opponent analysis.

The athletes participating in the study were selected based on the following criteria: a) belonging to the adult category; b) at least 10 years of experience; c) high rankings in national or international standings.

Results

Based on the data collected during the research, the strategic importance of the serve in modern table tennis can be represented through the following table:

Table 1. Analysis of serve performance indicators of highly qualified table tennis players

No.	Indicator	Male Athletes (n=24)	Female Athletes (n=24)	Difference (p<0.05)
Serve Zones (%)				
1.	Zone 1 (near right)	9.17 ± 5.34	1.92 ± 3.06	Significant
2.	Zone 2 (middle right)	12.17 ± 11.91	2.17 ± 2.12	Significant
3.	Zone 3 (near left)	38.42 ± 15.36	33.67 ± 17.35	Not Significant
4.	Zone 4 (middle left)	32.42 ± 20.71	28.17 ± 9.26	Not Significant
5.	Zone 5 (far right)	4.25 ± 2.37	9.08 ± 3.89	Significant
6.	Zone 6 (far left)	1.67 ± 1.43	4.17 ± 5.42	Not Significant
Spin Types (%)				
7.	Topspin	18.7	12.4	Significant
8.	Sidespin	21.5	18.3	Not Significant
9.	No-spin	7.5	7.5	No difference
10.	Direct point (%)	8.3	6.7	Not Significant
11.	Third ball attack (%)	42.7	35.2	Significant
Reception Methods				
12.	Push	57.16	67.18	Significant
13.	Flip	20.73	8.62	Significant
14.	Topspin	18.99	12.40	Significant

The research results revealed the following important aspects:

Serve Zones. Male athletes tend to serve predominantly to the middle and near zones of the table (zones 3 and 4). This allows them to execute the third ball attack quickly and effectively. Female athletes, however, serve more to various zones



of the table, including far zones (zones 5 and 6), based on the strategy of constantly moving the opponent and disrupting their stability.

Serve Types

Backspin serves are the most frequently used type of serve (52-62%). This is primarily related to the difficulty of receiving backspin serves and the fact that they force the opponent into defensive shots. No-spin serves are relatively rare (7.5%), but they are strategically important because, against a background of spin serves, a no-spin serve can significantly disorient the opponent.

Third Ball Attack

The fact that male athletes have the opportunity to transition to attack with the third ball after the serve in 42.7% of cases clearly demonstrates the strategic importance of the serve. This indicator is relatively lower in female athletes (35.2%), which is associated with their greater use of defensive and neutral shots.

Reception Methods

Push is the most common method of reception (57-67%). This indicates that a quality serve forces the opponent to abandon aggressive reception methods and transition to defensive shots. The high rate of push shots among female athletes (67.18%) particularly indicates their tendency towards a cautious strategy in serve reception.

According to the results of the expert survey, coaches distinguish two main methods of serve development:

1. **Analytical training** – improving the quality of impact on the ball through repeating a specific serve action. The main focus here is on the type of spin, spin intensity, ball placement speed, and spin masking.
2. **Contextual training** – practicing the serve in relation to the game situation. This involves planning the third ball and subsequent actions after the serve.

Conclusion

In modern table tennis, the serve is the most important technical element with strategic significance. The research results allow drawing the following conclusions:



1. The serve is the primary means of seizing game initiative. A high-quality serve forces the opponent to transition to defense and creates an opportunity for the server to win the point through a third ball attack. The fact that nearly half of male athletes (42.7%) have the opportunity to attack after the serve confirms this.
2. The opponent's reaction can be limited through the serve. Utilizing different spin types, their combinations, and no-spin serves, as well as varying serve zones, keeps the opponent in a state of constant uncertainty and increases their reaction time.
3. The serve serves as a tool for psychological superiority. The ability to execute a confident serve during crucial moments of the game increases the athlete's psychological stability and puts pressure on the opponent. The game tempo can be set, and the opponent's rhythm disrupted, through the serve.
4. Developing the serve requires a comprehensive approach. The combination of analytical and contextual training, along with analyzing the opponent and exploiting their weaknesses, are key factors in improving serve proficiency.
5. Gender differences manifest in serve strategy. Significant differences exist in the serve strategies of male and female athletes. While male athletes tend towards a more aggressive serve strategy, female athletes often choose a cautious strategy based on various options.

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