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Notational Analysis of The Technical Characteristics of Lee Zii Jia from the Quarter-Final to Final Matches at The Sathio Group Australian Open 2024

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I. INTRODUCTION

Badminton is one of the most dynamic and challenging racket sports in the world and requires a specific combination of physical ability, technical skill, tactical intelligence, and psychological strength from its athletes. At the elite level, the difference between winning and losing is often determined by small variations in technical performance and tactical execution. Notational analysis provides a structured approach to recording and interpreting match data, including performance indicators and success and error rates. This method helps coaches, sport analysts, and researchers gain deeper insights into the factors that contribute to success on the court [1]. Notational analysis has also helped identify trends and strategies that differentiate top performers from their peers [2]. In addition, performance analysis is an important subdiscipline of sport science that assesses sport performance through objective data to inform practitioner decision-making [3].

The objective of this study was to identify and compare the frequencies and effectiveness of technical characteristics between Lee Zii Jia and his opponents. This study conducted a notational analysis of Lee Zii Jia's performances from the quarter-final to the final match of the Sathio Group Australian Open 2024 by examining eight performance indicators: serve, smash, drive, clear, drop, lob shot, net shot, and net kill.

II. METHODS

A purposive sampling technique was used to select the matches for this study, comparing Lee Zii Jia with his opponents. Three matches from the quarterfinal, semi-final, and final were analysed. This study used a notational analysis method to compare technical characteristics. The key technical characteristics analysed were serve, smash, drive, clear, drop, lob, net shot, and net kill. The videos were obtained from the official BWF YouTube channel and analysed using Nacsport software.

III. RESULTS AND DISCUSSION

A non-parametric Mann-Whitney U test was used to analyse the data. This test was used to determine whether there were significant differences in technical characteristics (serve, smash, drive, drop, clear, lob, net shot, and net kill) between Lee Zii Jia and his opponents.

TABLE I
COMPARISON OF PERFORMANCE INDICATORS BETWEEN PLAYERS

	Mean Rank	***p***
Serve successful	33	.523
Serve unsuccessful	31.5	.169
Smash successful	37	.79
Smash unsuccessful	19.5	.057
Drop successful	12	.013*
Drop unsuccessful	23.5	.118
Clear successful	39.5	.965
Clear unsuccessful	31	.402
Drive successful	32.5	.506
Drive unsuccessful	40.5	1.00
Lob successful	25	.185
Lob unsuccessful	19.5	.063
Net shot successful	30.5	.401
Net shot unsuccessful	32	.47
Net kill successful	27	.214

*Note = significant level was set at $p < 0.05$**

Table 1 shows the comparison results using Mann-Whitney statistical analysis. The results showed that only one technical characteristic, successful drop shots, was significantly different (p = .013), while the other technical characteristics were not significant (p > .05). The findings revealed that winning players used lob and net shots more frequently. Their numbers of serves and smashes were similar to those of their opponents. The greater mean number of lobs among winning players (51.44 vs. 43) suggests the strategic use of high, deep shots

to reset rallies and move opponents to the rear court. This may create advantages in court positioning and time, helping the winning player regain control and prepare for offensive moves [4].

In contrast, losing players appeared to perform more drop shots, implying a more defensive or reactive game plan under sustained pressure. This trend supports the theory that sustained offensive pressure compresses the opponent's tactical options, forcing lower-risk play characterised by shorter and safer strokes [5]. Such behaviour is consistent with performance analysis research showing that rally construction in elite men's singles is strongly influenced by court positioning and shot selection, with longer rallies dominated by neutral and control strokes such as clear, lob, and net shots [6][7].

Furthermore, previous studies have observed that lobs and net play have important roles in long rallies, with a high proportion of strokes performed from the rear and front court to manipulate space and fatigue the opponent [4][5]. Overall, these findings highlight the importance of technical consistency in lob and net shots, rather than smash frequency alone, as a possible key determinant of winning performance in high-level men's singles badminton.

IV. CONCLUSIONS

This study indicates that successful performance in elite men's singles badminton is more strongly influenced by technical consistency and tactical precision than by reliance on high-power attacking strokes such as smashes alone. Most stroke efficacy variables, such as success rates for smashes and net kills, did not show large differences between winning and losing players. However, successful drop shots contributed to performance differences. Lee Zii Jia demonstrated stronger performance in successful drop shots, suggesting that accuracy and tactical precision are important for achieving victory.

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