

Comparative Analysis of Technical Features Among Pole Vaulters in Sri Lanka

JALN Jayathunga^{*1} and AWS Chandana¹

¹*Department of Sports Sciences and Physical Education, Faculty of Applied Sciences,
Sabaragamuwa University of Sri Lanka*

[*lahirunijayathunga5566@gmail.com](mailto:lahirunijayathunga5566@gmail.com)

Pole vaulting is a complex and physically demanding discipline in track and field, requiring athletes to combine speed, strength, and technical fitness. The study aims to compare the technical capabilities of a Sri Lankan pole vaulter and San Kendrick, an international vaulter from the USA. The analysis and comparison of technical features of pole vaulters in Sri Lanka were done by using the Kinovea Software (version 0.9.3). The approach run, takeoff, pole plant, swing, and bar clearance were evaluated through the analysis of various kinematic variables. By comparing International and National pole vault performances, key differences were identified. The International athlete (San Kendricks) surpassed the National athlete (M.H.I. Sandaruwan) in critical aspects. It was evident that the lower trunk lean angles (10.28° vs. 10.87°) during pole plant, and the take-off angle (16.84° vs. 18.3°) were increased with the improvement of pole lean angles. Maximizing pole flexibility, the international athlete achieved 25.65% bend compared to the National athlete (21.7%). Controlled timing of International and National athletes was apparent with slightly extended pole straightening (0.59 s vs. 0.47 s) and later upper release (1.42 s vs. 1.35 s) respectively. The findings of this study provided valuable insights into the development and improvement of pole vaulting in Sri Lanka. This study supports Sri Lankan coaches and athletes in maximizing performance levels by comparing technical aspects with an international vaulter.

Keywords: Comparison, Kinematic Variables, Performance Analysis, Technique Evaluation