

Discriminant Shooting-Related Statistics between Winners and Losers 2023 FIBA U19 Basketball World Cup

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Abstract : Introduction: Quantitative analysis of game-related statistical parameters is widely used to evaluate basketball performance at both individual and team levels. Non-free throw shooting plays a crucial role as the primary scoring method, holding significant importance in the game's technical aspect. It has been explored the predictive value of game-related statistics in relation to various contextual and situational variables. Many similarities and differences also have been found between different age groups and levels of competition. For instance, in the World Basketball Championships after the 2010 rule change, 2-point field goals distinguished winners from losers in women's games but not in men's games, and the impact of successful 3-point field goals on women's games was minimal. The study aimed to identify and compare discriminant shooting-related statistics between winning and losing teams in men's and women's FIBA-U19-Basketball-World-Cup-2023 tournaments. Method: Data from 112 observations (2 per game) of 16 teams (for each gender) in the FIBA-U19-Basketball-World-Cup-2023 were selected as samples. The data were obtained from the official FIBA website using Python. Specific information was extracted, organized into a DataFrame, and consisted of twelve variables, including shooting percentages, attempts, and scoring ratio for 3-pointers, mid-range shots, paint shots, and free throws. Made% = scoring type successful attempts/scoring type total attempts - (1) Free-throw-pts% (free throw score ratio) = (free throw score/total score) × 100 (2) Mid-pts% (mid-range score ratio) = (mid-range score/total score) × 100 (3) Paint-pts% (paint score ratio) = (Paint score/total score) × 100 (4) 3p_pts% (three-point score ratio) = (three-point score/total score) × 100 (5) Independent t-tests were used to examine significant differences in shooting-related statistical parameters between winning and losing teams for both genders. Statistical significance was $p < 0.05$. All statistical analyses were completed with SPSS, Version 18. Results: The results showed that 3p-made%, mid-pts%, paint-made%, paint-pts%, mid-attempts, and paint-attempts were significantly different between winners and losers in men ($t = -3.465, P < 0.05$; $t = 3.681, P < 0.05$; $t = -5.884, P < 0.05$; $t = -3.007, P < 0.05$; $t = 2.549, p < 0.05$; $t = -3.921, P < 0.05$). For women, significant differences between winners and losers were found for 3p-made%, 3p-pts%, paint-made%, and paint-attempt ($t = -6.429, P < 0.05$; $t = -1.993, P < 0.05$; $t = -1.993, P < 0.05$; $t = -4.115, P < 0.05$; $t = 0.2451, P < 0.05$). Discussion: The research aimed to compare shooting-related statistics between winners and losers in men's and women's teams at the FIBA-U19-Basketball-World-Cup-2023. Results indicated that men's winners excelled in 3p-made%, paint-made%, paint-pts%, paint-attempts, and mid-attempt, consistent with previous studies. This study found that losers in men's teams had higher mid-pts% than winners, which was inconsistent with previous findings. It has been indicated that winners tend to prioritize statistically efficient shots while forcing the opponent to take mid-range shots. In women's games, significant differences in 3p-made%, 3p-pts%, paint-made%, and paint-attempts were observed, indicating that winners relied on riskier outside scoring strategies. Overall, winners exhibited higher accuracy in paint and 3P shooting than losers, but they also relied more on outside offensive strategies. Additionally, winners acquired a higher ratio of their points from 3P shots, which demonstrates their confidence in their skills and willingness to take risks at this competitive level.

Keywords : gender, losers, shoot-statistic, U19, winners

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