


Analysis of the predominance of technical actions used in the 2021 European Judo Championship depending on combat time and golden score

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ABSTRACT

The interest of this study perspective, which allows us to interpret competitive action in more detail, is also important to reflect that according to the legal adaptations dictated by the rules of a modality, it makes its study necessary. The objective was to analyse the predominance of technical actions used in the 2021 European Judo Championship based on combat time and golden score. The study sample focused on 400 combats of the European Judo Championship 2021. We used an observation system created for this purpose, according to the classification system proposed by Kodokan. Cross-frequency tables were produced, where the association degree between variables was analysed using the Chi Square test, where the significance level was set at $p \leq .05$. We complemented the association analysis between variables by calculating the adjusted standardized residuals. The predominance of techniques and their effectiveness presented a similar hierarchy in both the combat and golden score phases. In golden score, women showed a significant association with hip techniques and men with frontal sacrifice techniques. Female athletes proved to be more effective in percentage terms in the golden score phase.

Keywords: Judo, Kodokan, European championship, Combat performance, Competitive performance analysis.

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INTRODUCTION

Judo is an Olympic combat sport divided into male and female weight categories. Each weight category implies marked differences in technical and strategic dimensions, as well as physiological, performance, and body composition between different weight categories competitors (Franchini and Herrera-Valenzuela, 2017). This individual variability can broadly mark the options and predominance of technical actions inherent to its own movements (Sterkowicz, Sacripanti, and Sterkowicz-Przybycien, 2013). It's important and necessary to interpret the competitive action in more detail on the different phase of the combat, and it is also important to reflect that according to the legal adaptations dictated by the rules of a modality (Batista et al, 2022). The objective was to analyse the predominance of effectiveness of technical actions used in the 2021 European Judo Championship based on combat time and golden score.

MATERIAL AND METHODS

Participants

The study sample focused on the European Judo Championship 2021, which had the participation of 359 athletes registered, 210 male athletes, and 149 female athletes, from 45 countries. 400 judo combats were observed, in the different male and female weight categories, with 6716 technical actions in combat being categorized.

Measures

We used an observation system created for this purpose, allowing registration and categorization of each technical action observed in combat, according to the following variables described. Each technique was categorized according to the classification system proposed by Kodokan. Data analysis was performed to identify each technique serving five categorization classes for Nage-Waza, also used by other authors (Boguszewski, 2016).

Procedures

For this research preparation, no ethical issues involved in the analysis and interpretation of the data used were considered, since they were obtained using publicly available and freely accessible International Judo Federation (IJF) online sources and were not generated by any experimentation process.

The athletes' personal identification was not done since the observation was not individualized. The identification of each observed combat was replaced by a code, which guaranteed anonymity and confidentiality.

Analysis

The techniques count distribution frequency was compared using the software IBM SPSS 21.0 software. For this purpose, cross-frequency tables were produced, where the association degree between variables was analysed using the Chi Square test, where the significance level was set at $p \leq .05$. We complemented the association analysis between variables by calculating the adjusted standardized residuals, taking as reference positive values equal to or greater than 1.96, assuming that the higher the residual, the more significant the trend is (Marôco, 2018).

To determine differences between groups in the frequencies recorded proportions, the Z test was applied, where the significance level was set at $p \leq .05$.

RESULTS

The results expressed in Tables 1 show that the hierarchy of techniques used by male and female athletes are similar, noting that in golden score the second most used group by female athletes became the Koshi Waza group instead of Te Waza. Significant associations were identified in golden score with the use of Ma Sutemi Waza techniques by men and Koshi Waza by women. In Table 2 we observe identical trends in effectiveness in both genders, although female athletes present an effectiveness above 10% in golden score, with a significant association with the Ippon advantage in that same phase.

Table 1. Predominance of technical actions during combat.

	Phase	Ashi Waza	Koshi Waza	Te Waza	Ma Sut Waza	Y Sut Waza	Total
M a l e	Combat	1810 a	272 b	711 a, b	217b	153c	3163
	%	57.2%	8.6%	22.5%	6.9%	4.8%	100.0%
	Golden Score	193a	43 b	98a, b	40* b	7c	381
	%	50.7%	11.3%	25.7%	10.5%	1.8%	100.0%
	Total	2003	315	809	257	160	3544
	%	56.5%	8.9%	22.8%	7.3%	4.5%	100.0%
F e m a l e	Phase	Ashi Waza	Koshi Waza	Te Waza	Ma Sut Waza	Y Sut Waza	Total
	Combat	1816 a	289 b	344 a, b	60 a, b	163 a, b	2672
	%	68.0%	10.8%	12.9%	2.2%	6.10%	100.0%
	Golden Score	206 a	52* b	49 a, b	9 a, b	24 a, b	340
	%	60.6%	15.3%	14.4%	2.6%	7.1%	100.0%
	Total	2022	341	393	69	187	3012
%	67.1%	11.3%	13.0%	2.3%	6.20%	100.0%	

Note. * (technical group shows a significant residue); a b (technical group differs).

Table 2. Effectiveness of technical actions during combat.

	Phase	Ippon	Waza-ari	Non Score	Kiken Gachi	Total
M a l e	Combat	146 a	116 a	2962 a	3a	3227
	%	4.5%	3.6%	91.8%	0.1%	100.0%
	Golden Score	25 a	11a	363 a	0a	399
	%	6.3%	2.8%	91.0%	0.0%	100.0%
	Total	171	127	3325	3	3626
	%	4.7%	3.5%	91.7%	0.1%	100.0%
F e m a l e	Phase	Ippon	Waza-ari	Non Score	Kiken Gachi	Total
	Combat	104 a	78 a, b	2550 b	1 a, b	2733
	%	3.8%	2.9%	93.3%	0.0%	100.0%
	Golden Score	22* a	14 a, b	321 b	0 a, b	357
	%	6.2%	3.9%	89.9%	0.0%	100.0%
	Total	126	92	2871	1	3090
%	4.1%	3.0%	92.9%	0.0%	100.0%	

Note. * (technical group shows a significant residue); a b (technical group differs).

DISCUSSION

When we analyse the results, we observe that the predominance and percentage of effectiveness respect an identical trend to that already found by Batista et al. (2022), Boguszewski (2016) or Sterkowicz, Sacripanti, and Sterkowicz-Przybycien (2013). However, it should be noted that, in percentage terms, behavioural

changes are observed in the decision-making of judokas in both genders, from the combat phase to the golden score phase, an aspect also identified by Batista et al. (2022).

CONCLUSIONS

The predominance of techniques and their effectiveness presented a similar hierarchy in both the combat and golden score phases. In golden score, women showed a significant association with hip techniques and men with frontal sacrifice techniques. Female athletes proved to be more effective in percentage terms in the golden score phase.

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