

Notational match analysis of the 2011 state championship of Bosnia and Herzegovina and 2010 Balkan championship in judo for female competitors

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Abstract

Main goal of this research is used notational match analysis to define differences of the indicators of the situation efficiency among senior female from participants of the State championship of Bosnia and Herzegovina and Balkan's Judo Championships. Analysis has been done based on video scripts of 95 fights for BIH senior's female and video scripts of 69 fights for Balkan senior's female in all seven categories. Matches have been monitored with 17 variables of situation's efficiency in Judo. For defining differences of indicators of situation's efficiency it has been used χ^2 (Chi Square) test. The results of the χ^2 tests implicate to the statistically important differences among seniors - female in analyzed indicators of the situation's efficiency. Both groups of the examined were more efficient with throwing techniques comparing to the grappling techniques. Bosnian seniors female used more holding (osae) techniques while female from Balkan championship dominated with hand and sacrificing throwing techniques. The most efficient techniques that seniors - female used from B&H State competitors are: O Uchi Gari, Kesa Gatame, Tani Otoshi, etc, while female competitors from Balkans championship used: Uchi Mata, Ippon Seoi Nage, Kesa Gatame etc.

Key words: judo, notational analysis, female competitors

Introduction

Judo as a sport, contains more than the fight itself since it involves dynamic conditions of activity performance, including constant exchange of attacks and defensive actions, includes breaking and re-establishing of balance, realisation or not realisation of counterattacks, readiness, preparatory actions and avoidance of opponent's actions. Also, in judo training an indispensable segment is physiological preparation which includes different types and forms of thinking, meditation, philosophy and concentration. In this way, judo many times overgrows pure usage of energetic and informational humane resources with an aim to destroy the opponent. One could even say that judo in many ways is a special life philosophy and a certain spiritual development.

Fighting in judo demands the competitor to automatically apply judo elements to right and left side, in the standing position and on floor, as well as the possibility to combine these techniques. The importance of quantification of situational efficiency parameters is in the fact that they are gathered under the conditions of real fight during the biggest competitions, among which there are European championships as well. The situational efficiency of

individual technical elements in judo is important if we focus on more aspects of preparation for competition, as well as on adequate choice of application of technique during the competition, optimal approach to the usage of these techniques through exercise in situational conditions of judo fight, application of adequate training technology and if all this is adapted to our opponent and his way of fight.

In judo there are many throwing techniques and floor techniques (IJF - Waza list, 2003), i.e. 99, but the number of techniques through which the wins are achieved is very small, therefore the situational efficiency of techniques in judo is the same. The research of ability, characteristics and knowledge of athletes focused on technical and tactical indicators for situational efficiency realised by the competitors during the competition (Milanović, 1999) represents a good basis for application of research results in the judo training technology.

A basic condition for successful implementation of transformation training processes in judo is application of successfulness

diagnose in relation to indicators of situational efficiency in judo fight at all competition levels, such as Olympic games, world, European and national championships.

Analysis of situational efficiency indicators based on standard aspects of situation efficiency of judo fight was a subject of research of many judo experts, such as (Sterkowicz, 1998; Sterkowicz and Blach, 2001; Kajmović at al., 2007; Kajmović at al., 2011).

Objective of this research is used notational match analysis to define differences of the indicators of the situation efficiency among senior female from participants of the State championship of Bosnia and Herzegovina and Balkan Judo Championships.

Method

Sample of participants

Specimen of the examined is defined as a total of fights (n = 95) State championship of Bosnia and Herzegovina held in Kiseljak 2011. years (B&H) and total of fights (n = 69) from Balkan Judo Championship, held in Trebinje (B&H) 2010. years for the female seniors competitors for all seven weight categories (48kg, 52 kg, 57 kg, 63 kg, 70 kg, -78 kg and +78 kg). At the Balkan's Championships further national judo teams participated: Bosnia and Herzegovina, Serbia, Bulgaria, Rumania, FRY Macedonia, Albania, Greece, Turkey and Montenegro.

Sample of variables

Analysis of the parameters of situation's efficiency is based on official classification of judo techniques by 17 indicators of situation's efficiency (Kano, 1994; IJF – Waza list, 2010) as it follows: Groups of judo techniques: 1) Nage-Waza (Throwing techniques), 2) Katame-Waza (grappling techniques);

Subgroups of judo techniques: 3) Te-Waza (Hand throwing techniques), 4) Koshi-Waza (Side throwing techniques), 5) Ashi-Waza (Leg throwing techniques), 6) Sutemi-Waza (Sacrificing throwing techniques), 7) Osa-Komi-Waza (Holding techniques), 8) Shime-Waza (Struggling techniques), 9) Kansetsu-Waza (Lever techniques);

Quantitative of judo fights: Technical points - 10) Ippon (10pts), 11) Waza-ari (7pts), 12) Yuko (5pts), - Penalties - 13) Shido 1 (-3pts), 14) Shido 2 (-5pts), 15) Shido 3 (-7pts), 16) Hansokumake/Shido 4 (-10pts).

17) Situation's efficiency of the separate throwing judo techniques and floor techniques.

Data processing methods

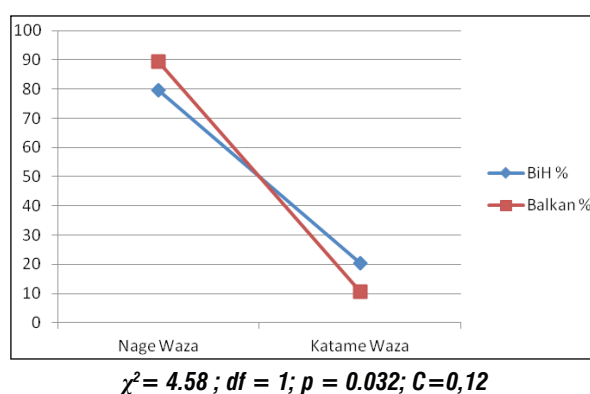
The calculation of frequencies and percentual values was performed for all included variables. For establishment of differences between the frequencies the χ^2 – test was used (Chi square test) at the level of statistical importance ($p < 0,05$) with contingency tables (Petz, 1997). For testing the importance of correlations between the used variables, the coefficient of contingency was used (C). The parameters of situational efficiency were calculated according to formula (Sikorski, 1985):

SITUATIONAL EFFICIENCY = Number of official attacks/ number of all attacks x 100

Results and Discussion

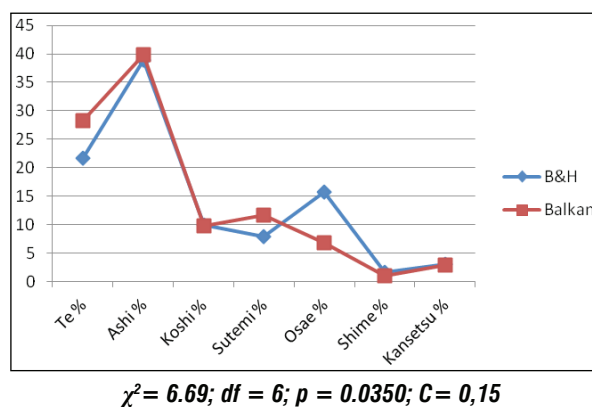
Based on the analysis of video scripts of 95 fights from State championship of Bosnia and Herzegovina and 69 video scripts of Balkan's championship held Bosnia and Herzegovina, it was presented 330 technical actions among which both groups presented 87,9% from the group Nage Waza, while a small number of the technical actions were presented from the group Katame Waza 12,1% (Figure 1). Female seniors from Balkan's dominates with throwing techniques 91,7%, comparing to the male seniors from BiH 83,3%, that have more efficiency in floor techniques 16,7%, comparing to the male seniors 8,3%. The results of the χ^2 tests ($\chi^2 = 4.58$) appoint to the existence of the statistics differences among monitored frequency of the throwing techniques, comparing to the grappling techniques ($p = 0.032$) with coefficient of the contingency ($C = ,12$).

Figure 1. Notational match analysis of the groups of the judo techniques



Comparing the efficiency of the applied judo subgroups techniques among female seniors (Figure 2.), female seniors from State championship of Bosnia and Herzegovina showed that they dominates with holding (Osae) techniques by 15,5%, struggling (Shime) techniques by 0,6%. Female seniors by Balkan championship dominated in hend (Te) 28,0%, leg (ASHI) 38,1%, sacrificing (Sutemi) techniques by 12,0%. The results of the χ^2 tests (6,69) appoint to the existence of the statistics differences among monitored frequency of the throwing techniques, comparing to the grappling techniques ($p = 0,0350$).

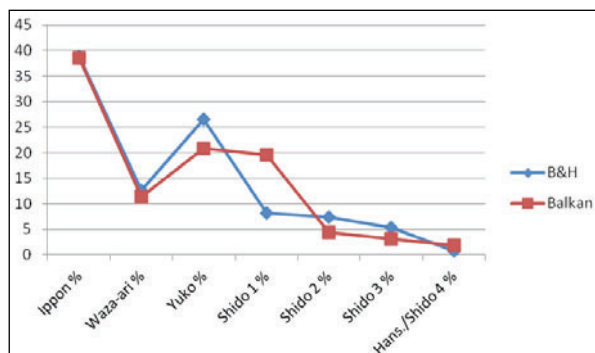
Figure 2. Notational match analysis of the subgroups judo techniques



Analyzing quantity parameters of Judo points and penalties (Figure 3.), female from State championship of Bosnia and Herzegovina showed better efficiency in points Yuko (26,1%), Waza-ari

(15,4%), penalties Shido 2 (8,2%) and Shido 3 (5,1%). Female competitors from Balkan championship, showed high value in penalties Shido 1 (20,0%). Value of point Ippon are approximately same (37,1%) on both competitions. Results of χ^2 tests (14,5) show that there no statistically important differences ($p = 0.024$) in frequency of the realized quantity parameters between female judo competitors from these two competition.

Figure 3. Notational match analysis of quantitative parameters



$$\chi^2 = 14.5; df = 6; p = 0.024; C = 0,19$$

Analyzing first ten the most efficient separate judo techniques (Table 4), which B&H female seniors presented are: O Uchi Gari, Kesa Gatame, Tani Otoshi, Ippon Seoi Nage, Harai Goshi, etc. Tai Otoshi which represent hand (Te) techniques; Uchi Mata, De Ashi Barai and O Uchi Gari as techniques from leg (Ashi) throwing group; Harai Goshi as side (Koshi) throwing techniques; Tani Otoshi as sacrificing (Sutemi) techniques; Kesa Gatame as hold-ings (Osae). Female seniors from Balkan championship, the most efficiently applied techniques is Uchi Mata, Ippon Seoi Nage,

Kesa Gatame, O Soto Gari, O Uchi Gari and etc. These results saying that the leg (Ashi) throwing techniques with the balance held on one occasion throwing a dominant performance in both competitions.

Earlier studies (Kajmovic et al., 2007) investigate differences analysis of situational efficiency performances between three level of judo competition for female seniors. Techniques mostly used by female seniors from B&H championship 2006. year were: O Uchi Gari, Kesa Gatame, Tani Otoshi, Ippon Seoi Nage etc. Techniques mostly used by female participants from Balkan championship 2006. year were: Uchi Mata, Kesa Gatame, Seoi Nage, Harai Goshi, O Uchi Gari etc. Techniques mostly used by female seniors participants from European championships 2004. year were: O Uchi Gari, Uchi Mata, Te Guruma, Seoi Nage, Tani Otoshi etc. These data suggest that it is necessary to make some changes when it comes to techniques used by women in the National Championship of Bosnia and Herzegovina, and in this way were much more effective at higher levels of competition.

Conclusion

The existence of differences between senior female competitors in situational efficiency performances based on notational match analysis, is most probably at the level of technical and tactical preparation, mental, sport selection,. The achieved results can help in better understanding of the need to monitor and analyse situational efficiency parameters in judo for female competitors. Monitoring and control of efficiency for relevant technical and tactical parameters of situational efficiency in judo performed by senior female competitors can be directly applied in the training process, in order to insure the optimal choice of content and burden of training.

Table 1. The most efficient judo techniques used by female seniors at the B&H and Balkan's championships

National Championship of Bosnia and Herzegovina in Judo for female competitors		RANK	Balkans Championship in Judo for female competitors	
%	Techniques		Techniques	%
11,8	O Uchi Gari	1	Uchi Mata	14,8
9,9	Kesa Gatame	2	Ippon Seoi Nage	12,7
9,4	Tani Otoshi	3	Kesa Gatame	11,6
8,9	Ippon Seoi Nage	4	O Soto Gari	7,9
6,6	Harai Goshi	5	O Uchi Gari	6,4
6,6	O Soto Gari	6	Harai Goshi	5,8
6,1	Seoi Nage	7	Yoko Shiho Gatame	5,3
4,7	Tai Otoshi	8	Tai Otoshi	4,8
3,3	Yoko Shiho Gatame	9	Juji Gatame	4,2
2,8	Juji Gatame	10	Ko Uchi Gari	2,6

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