

Analysis of the Relevant Factors of Retaining Women in Judo

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ABSTRACT

This study aimed to determine the latent dimensions of all relevant factors about engagement of women in judo, to determine the intercorrelations among these latent dimensions, as well as the correlations with three relevant variables. Final goal was to determine the differences in revealed latent dimensions, in relation to several independent variables: educational level, marital status, impulses to engage in judo, then depending are the women athletes (competitors) or not, members of the Board or not, trainers or not. A total of 50 female judokas from a larger number of Croatian clubs were examined, by specially composed the survey. The results showed that all seven questionnaires showed medium to high satisfactory reliability, together with good construct validity, in 15 latent dimensions that are revealed. It can be noticed that relatively older women have more obligations and more barriers that oppose to their engagement in judo. Only small number of differences are found among women engaged in judo, mainly among participants who are members of the Board in the club or Croatian Judo Federation, as compared with those who are not. Small number of statistically significant differences (as well as the correlations) can be also observed as the fact that all women partially share similar problems, while the media strategies are perceived as the most powerful to increase women's persistence in judo, in any type of engagement.

Key words: barriers, commitments, judo, motivation, strategies.

Introduction

Combat sports (judo included) are traditionally seen as a male sport. Judo has been an Olympic sport since 1964, while women's judo has been an unofficial part of the Olympic Games since 1988, and officially since 1992 (Lucić & Gržeta, 2000). Unlike the situation with many other sports, there is equal interest in men's and women's judo, which was certainly aided by the fact that both the men's and women's judo competitions are held together and promoted equally by international sports organizations: the European Judo Union (EJU) and the International Judo Federation (IJF).

Judo is a relatively new sport in Croatia. The first judo club in Croatia was founded in 1951 in Zagreb by Hugo Roshanz, a former judo competitor for Germany, who came to Croatia after World War II as a prisoner of war (Lucić & Gržeta, 2000). Women started training judo at the same time as their male counterparts in Croatia and, according to the recollections of the authors of this article, the training session were seldom held separately. Although the history of women's judo in Croatia starts at the same time as that of men's judo, there were far fewer female judo practitioners at the very beginning (Croatian Judo Federation, 2013). The national policy concerning gender equality in Croatia stresses the need to make sports more accessible to women (Štimac Radin, 2011). The Croatian National Policy for Gender Equality 2011 – 2015 redefines national

priorities and ways of implementation of measures that need to be taken, in accordance with changing social and political circumstances, past accomplishments and further challenges in achieving real gender equality (Štimac Radin, 2011). The Croatian Olympic Committee (COC) had in 2012, with the goal of increasing the percentage of women participating in sports, and especially in sports management, recommended to all of its national governing body members that there should be at least 40 percent of women in all sports associations by the end of 2015. The COC Commission for Women in Sports was also founded in 2012 (Croatian Olympic Committee, 2012).

According to the membership records of the Croatian Judo Federation (Croatian Judo Federation, 2013), women comprise 23 percent of registered contestants in all age groups. However, a significant number of female practitioners in the senior age group (5%) stop competing completely. According to data from 2013, only 13 percent of female judo practitioners are in management positions (not connected with contests). In other words, the percentage of women in judo, and especially in sports management, is far lower than the recommended 40 percent (Croatian Judo Federation, 2013). Based on the number of active male and female competitors (the percentage of female competitors ranges from 17 to 27 percent in different age groups), as well as coaches and those working in sports management (the percentage of women ranges from 0 to 25 percent), it can be safely assumed that women's judo is not a popular sport in

Croatia (Croatian Judo Federation, 2013). According to official data, only 13 percent of women occupy other positions in judo, and the real percentage is probably even lower. Women often hold several positions in judo, so a significant number of the same women in judo can be found among contestants, coaches, judges and in club management (Croatian Judo Federation, 2013). However, the head of the Croatian Judo Federation has now for several mandates been a woman. On the other hand, although there are fewer women in judo than there are men, out of 260 medals Croatia has won in important judo competitions (European and world championships) from 2005 to 2013, 70% of them were won by female competitors. It is also important to mention the recent great success of the junior female team at the World Judo Championship in Ljubljana in 2013 (one gold medal and 2 bronze medals by single competitors and one team bronze) and two bronze medals at the recently held European championship for younger seniors (Croatian Judo Federation, 2013).

The aims of this study were to identify reasons and factors of practicing judo in Croatian women, barriers that they perceive disturbing for their continued engagement judo, either as competitors or as sport employees. Furthermore, we wanted to determine what are the important issues to be addressed that could encourage greater participation of women in sports, which are specific strategies to encourage judoka to stay in judo, and what are the ways to improve the intense media coverage of women in judo. All these findings could allow us to create effective programs to motivate women to practice judo and to persevere in it, either as competitors, or as advanced recreational sports employees. Except determining the latent dimensions of all relevant factors about engagement of women in judo (1), the goals of this research were to determine the correlations among these latent dimensions of all relevant factors about engagement of women in judo (2), as well as the correlations with three relevant variables (number of children, age and period spent engaged in judo) (3). Final goal was to determine the differences in revealed latent dimensions of relevant factors about engagement of women in judo, according to several independent variables: educational level, marital status, impulses to engage in judo, then depending are the women athletes (competitors) or not, members of the Board or not, trainers or not.

Methods

Participants

Fifty female judo competitors and employees, members of 19 Croatian judo clubs, were surveyed as a part of this research: Panda (3), Zagreb (5), Mladost Osijek (3), Tempo (1), Randori (1), Medvedgrad (3), Maksimir (1), Auto Čuljak Vinkovci (8), Nijemci (1), Pulafit (1), Pujanke (10), Dubrovnik (5), Lika (2), Dalmacijacement (1), Samobor (3), Zagrebačka judo škola (2), Remete (17), Istarski borac (1), Rijeka (1), and from Croatian cities: Zagreb (18), Split (11), Osijek (2), Split (7), Pula (3), Stara Rača (1), Vinkovci (8), Nijemci (1), Dubrovnik (5), Kaštel Lukšić (10), Lastovo (1), Rijeka (1), Samobor (2). The questionnaires were distributed by email from December 2013 to the end of February 2014, with the aid of the Croatian Judo Federation. The questionnaires were also returned to the researchers by email, signed by the surveyed judo practitioners to give their informed consent to participate in the research. The average age of the surveyed female judo practitioners was ($M \pm SD$) 26.10 ± 10.77 (a range from 15 to 54 years of age), their average work experience in years 4.70 ± 7.93 (a range from 0 to 34 years), their average years spent practicing judo 14.78 ± 8.21

(a range from 2 to 41), and the average age of children of the surveyed female judo practitioner was 0.48 ± 0.95 (a range from 0 to 3 children). As far as education is concerned, 13 surveyed female judo practitioners have only finished primary school, 22 of them have only a high school diploma, 3 of them have finished post-secondary schools other than college, and ten of them have finished college without enrolling into a postgraduate program. Only two have a postgraduate academic degree. As far as their marital status is concerned, 34 of them are unmarried, 14 are married, and two of them are divorced. Only five of the surveyed practitioners have not won a medal in a national level championship, while 45 of them have. Thirty nine of the surveyed female judo practitioners have won a medal at an international level, while 11 of them have not. Only 19 of them are a part of club management, while the other 31 are not. Only three of the surveyed female judo practitioners are heads of judo clubs. Nine surveyed female judo practitioners hold administrative positions in judo clubs or organizations, while 41 of them do not. Thirty one female judo practitioners from our test set compete in judo tournaments (19 of them do not compete), 14 of them are coaches (36 of them are not), 14 of them work at the tournaments in some official respect, e.g. as judges or notaries (36 of them do not work at the tournaments in some official capacity). Twenty nine surveyed female practitioners live at home with their mother, stepmother, or foster mother (21 do not), and 27 of them live at home with their father, stepfather or foster father (23 do not). Thirty seven surveyed female judo practitioners do not have children, while 5 have one child, four of them have 2, and four of them have 3 children. Not a single surveyed female judo practitioner lives with her grandchildren. Only one lives together with her grandfather, and only three of them live together with one of their grandmothers. Thirty five of the surveyed female judo practitioners do not live together with their brothers or sisters. Sixteen of them have a sibling, 7 of them have two siblings, and one has three siblings. Finally, 35 of the surveyed female judo practitioners live alone, while 15 of them do not (they usually live with a husband or with a partner out of wedlock).

Instruments

We have asked the female judo practitioners to respond on the set of questionnaires: the reasons for practicing judo, positive and negative aspects of judo, involvement in other sports, and how much time judo takes away from other obligations. In this research we used modified sentences and questions from the following questionnaires: "Attitudes towards women in judo" and "Obstacles for women in judo" (Khan et al., 2012); "Obstacles for women in sports"; "Promoting greater involvement of women in sports"; "Media coverage of female sports" (Sparks, 2007); "Motivation for participation in sports" (Sports and Physical Activity, 2010). The items in all the questionnaires can be seen in the Tables 1-7, while the assessment scales and detailed descriptive statistics for all the items in is performed in our previous articles (Rendulić, Sindik, and Čorak, 2013; Rendulić, Sindik, and Čorak, 2014).

Statistical Analyses

In the statistical analyses of the data, the software package SPSS 11.0 is used. In the process of determining the main metric properties of the questionnaires, for determining the construct validity of the questionnaires, the method of Principal Component Analysis (PCA) is used (with or without Varimax rotation), while in the case of "Specific strategies to encourage participation and involvement of women in judo", the most convenient appeared Alpha factoring extraction method with Promax rotation. Several criteria are combined to obtain final

component (factor) solutions: saturation higher than 0.300; Scree Plot; Guttman-Kaiser criterion (eigenvalue greater than 1.00) and interpretability criterion. The results in extracted principal components (factors) in certain questionnaires are expressed in regression factor scores, and then used in further analysis (differences and correlations). The reliability type internal consistency for all components (factors) revealed was determined using Cronbach's alpha coefficient. To determine the differences between each two groups of participants, the Mann Whitney U test is used (in comparison of two samples), while in case of multiple groups of participants, the Kruskal-Wallis test

is used. The correlation analyses were performed using Spearman rank-correlation coefficients. The significance of differences commented on the probability level $p < 0.05$.

Results

Kaiser-Meyer-Olkin's measures of the data matrix's convenience for the factorization and Bartlett's sphericity showed that the intercorrelation matrix suitable for factorization, in all questionnaires (Tables 1-5).

Table 1. Component Structure and Reliability of the Questionnaire “Attitudes Towards Women in Judo” (Principal Components Analysis, Varimax rotation)

Attitudes towards women in judo	Positive personal motives	Negative environment motives	Communalities
Do you like judo?	.885		.793
Do you like to be active in judo?	.891		.820
Do you participate in judo to progress (physically, mentally, socially, emotionally, and psychologically)?	.894		.800
Our country (Croatia) generally encourages women to get involved in judo for improving health and fitness.	.322		.141
Croatian culture prohibits women from engaging in judo.		.776	.603
Cultural factors (e.g. environment in which we live) substantially affect my engagement judo.		.554	.330
Judo is generally not desirable activity for women in Croatia.		.827	.685
Family, relatives and social environment in general restrict the possibility for women to deal with judo.		.837	.705
KMO measure of sample adequacy	0.684		
Bartlett's Sphericity test (df=28)	138.178		p<0.001
Reliability (Cronbach's alpha)	0.666	0.730	
Eigenvalue	2.510	2.366	
Variance explained	31.380%	29.575%	

Table 2. Component Structure and Reliability of the Questionnaire “Why Are You Engaged in Judo (Motivation)?” (Principal Components Analysis, Varimax rotation)

Why are you engaged in judo (motivation)?	Social motives	Relaxation and fun	Ambition and self-esteem	Communalities
to slow down the effects of aging	.782			.614
for weight control	.743	.369		.691
to be with friends	.735			.581
to gain new friends	.642	.335		.594
to be better integrated into society	.573			.457
to better look	.562	.444		.515
to meet people from different cultural backgrounds	.561		.322	.435
for relaxation		.862		.771
for improving fitness		.740	.317	.700
for fun	.306	.730		.636
to advance self-esteem (feel more valuable)			.844	.738
to develop new skills		.336	.794	.746
the spirit of competition			.786	.655
to be successful in sport		.345	.465	.408
for schemes to promote health		.377	.387	.332
KMO measure of sample adequacy	0.741			
Bartlett's Sphericity test (df=105)	348.912		p<0.001	
Reliability (Cronbach's alpha)	0.842	0.820	0.753	
Eigenvalue	3.391	2.773	2.709	
Variance explained	22.606	18.485	18.060	

In the questionnaire “Attitudes towards women in judo” (Table 1), two principal components occurred, which showed moderate high and satisfactory reliability and interpret over 60% of the total variance. Based on the contents of the statements (items) that saturated the principal components, these components are named: Positive personal motives and Negative environmental motives.

In the questionnaire “Why are you engaged in judo (moti-

vation)?” (Table 2), three principal components occurred, which showed moderate high and high satisfactory reliability and interprets something less than 60% of the total variance. Based on the contents of the statements (items) that saturated the principal components, these components are named: Social motives, Relaxation and fun and Ambition and self-esteem.

Table 3. Component Structure and Reliability of the Questionnaire “Obstacles to Your Participation in Judo” (Principal Components Analysis, Varimax rotation)

Obstacles to your participation in judo	Environmental barriers	Obligations as barriers	Financial, rules, traffic	Communalities
Cultural barriers (undesirable that women play sports)	.929			.876
Environment unfriendly to women	.921			.875
Timing of the competition	.536		.381	.478
Time - with regard to family responsibilities		.821		.678
Time - related to business commitments		.765		.591
Lack of capacity to cater for children		.611	.328	.484
Equal rules for women and men			.836	.708
Prices (financial reasons)	.349	.302	.623	.601
Lack of transportation options			.595	.436
KMO measure of sample adequacy	0.580			
Bartlett's Sphericity test (df=15)	136.156		p<0.001	
Reliability (Cronbach's alpha)	0.777	0.591	0.586	
Eigenvalue	2.207	1.797	1.721	
Variance explained	24.526	19.968	19.119	

In the questionnaire “Obstacles to your participation in judo” (Table 3), three principal components occurred, which showed low to moderate high but satisfactory reliability and interprets something over 63% of the total variance. Based on the contents of the statements (items) that saturated the principal components, these components are named: Environmental barriers, Obligations and Combined (financial, rules, traffic).

In the questionnaire “Importance of the following issues in

promoting inclusion and participation of women in sports in general” (Table 4), two principal components occurred, which showed moderate high and satisfactory reliability and interprets something over 69% of the total variance. Based on the contents of the statements (items) that saturated the principal components, these components are named: Organization of sport commitments for women and Organization of out-sport commitments for women.

Table 4. Component Structure and Reliability of the Questionnaire “Importance of the Following Issues in Promoting Inclusion and Participation of Women in Sports in General” (Principal Components Analysis, Varimax rotation)

Importance of the following issues in promoting inclusion and participation of women in sports in general	Organization of sport commitments for women	Organization of out-sport commitments for women	Communalities
Increase the number of available choices ways sports	.923		.859
Develop sports in which women can participate and have fun	.914		.856
Develop a strategy for harmonization obligations with sports	.482	.397	.390
Develop strategies for occasional babysitting		.894	.805
Consider the style of dress (dress code)		.743	.641
Consider the time of the competition	.485	.612	.610
KMO measure of sample adequacy	0.695		
Bartlett's Sphericity test (df=15)	107.654	p< 0.001	
Reliability (Cronbach's alpha)	0.768	0.719	
Eigenvalue	2.251	1.909	
Variance explained	37.521	31.822	

In the questionnaire “Specific strategies to improve media coverage of women in judo” (Table 5), only one principal component occurred, which showed moderate high and satisfactory reliability and interprets something over 66% of the total variance. Based on the contents of the statements (items) that saturated the principal component, this component is

named: Specific strategies to improve media coverage of women in judo.

In the questionnaire “Specific strategies to encourage participation and involvement of women in judo” (Table 6), two factors occurred, which showed moderate high and very low but still satisfactory reliability and interprets something around

47% of the total variance. Based on the contents of the statements (items) that saturated two factors, these factors are

named: Indirectly - judo official and Directly in judo. The correlation among these two factors was 0.548.

Table 5. Component Structure and Reliability of the Questionnaire “Specific Strategies to Improve Media Coverage of Women in Judo” (Principal Components Analysis)

Specific strategies to improve media coverage of women in judo	Specific strategies	
	for media	Communalities
Create new internal position specifically designed to promote women's sports	.872	.761
Increase understanding of the athletes on how to work with the media	.866	.750
Use of external experts (outside consultants)	.856	.732
Explore the area of digital media (that potentially allows for greater control of content and distribution)	.838	.702
Cooperation with other sports	.800	.640
Use rewards and recognition	.772	.595
Continue current efforts - be regular and persistent	.671	.450
KMO measure of sample adequacy	0.841	
Bartlett's Sphericity test (df=21)	230.329	p< 0.001
Reliability (Cronbach's alpha)	0.913	
Eigenvalue	4.631	
Variance explained	66.152	

Table 6. Factor Structure and Reliability of the Questionnaire “Specific Strategies to Encourage Participation and Involvement of Women in Judo” (Alpha Factoring, Promax Rotation)

Specific strategies to encourage participation and involvement of women in judo	Indirectly – judo official	Directly in judo	Communalities
Opportunity to become an official competitions	.667	.514	.476
Voluntary participation by organizations and sports associations	.585	.309	.342
Programs for top athletes	.554	.364	.312
Volunteer roles that can be downloaded	.743	.841	.821
identification of the talents	.491	.522	.332
Training (the ability to become a coach)		.487	.271
KMO measure of sample adequacy	0.748		
Bartlett's Sphericity test (df=21)	82.965	p< 0.001	
Reliability (Cronbach's alpha)	0.733	0.508	
Eigenvalue	2.672	1.606	
Variance explained	38.176	8.652	

Table 7. Component Structure and Reliability of the Questionnaire “Already Present Initiatives to Encourage Greater Involvement of Women in Judo” (Principal Components Analysis)

Already present initiatives to encourage greater involvement of women in judo	Already present initiatives	
	initiatives	Communalities
Creation of new programs / games that are specifically aimed at women	.839	.704
Differentiated funding, with the aim of attracting women	.758	.575
Programs designed just for women	.756	.571
Educational activities to promote women's involvement	.671	.450
tacit encouragement through promotional events and communication	.653	.427
KMO measure of sample adequacy	0.606	
Bartlett's Sphericity test (df=10)	87.396	p< 0.001
Reliability (Cronbach's alpha)	0.777	
Eigenvalue	2.727	
Variance explained	54.450	

In the questionnaire “Already present initiatives to encourage greater involvement of women in judo” (Table 7), only one principal component occurred, which showed moderate high and satisfactory reliability and interprets something over 54% of the total variance. Based on the contents of the statements (items) that saturated the principal component, this component

is named: Already present initiatives to encourage greater involvement of women in judo.

Correlations among the variables in the research

In following two analyses we have used obtained latent dimensions, expressed in regression factor scores, to calculate the

correlations among these latent dimensions (Table 9), as well as to establish their correlations with three independent variables:

number of children, age and period spent (engaged) in judo (Table 8).

Table 8. Correlations (Spearman) Among All the Components in All Questionnaires With the Variables: Number of Children, Age and Period Spent in Judo

Variables	Number of children	Age	Period spent in judo
Positive personal motives	-0.08	-0.17	-0.16
Negative environment motives	0.18	0.46**	0.33**
Social motives	-0.14	-0.13	0.01
Relaxation and fun	0.06	-0.11	-0.18
Ambition and self-esteem	-0.05	-0.19	-0.19
Environmental barriers	-0.15	-0.03	0.02
Obligations as barriers	0.34*	0.28*	0.23
Financial, rules and traffic as barriers	-0.04	-0.03	-0.27
Organization of sport commitments for women	-0.17	-0.22	-0.36**
Organization of out-sport commitments for women	0.33*	0.23	0.24
Specific strategies for media	0.07	0.04	-0.01
Indirectly - judo official	0.25	0.01	0.02
Directly in judo	0.36*	-0.03	0.02
Already present initiatives involving women in judo	-0.10	-0.11	-0.24

* Correlation significant with $p < 0.05$ (two-tailed)

** Correlation significant with $p < 0.01$ (two-tailed)

Among all correlations with three variables (number of children, age and period spent engaged in judo), only seven were statistically significant (six positive and one negative). All significant correlations were low-sized. Negative environmental motives positively and significantly correlated with age and time spent in judo. Women's Obligations as barriers positively and significantly correlated with age and number of children. Organization of sport commitments for women negatively and significantly correlated with time spent in judo, Organization of out-sport commitments for women positively and significantly correlated with number of children, as well as the engagement Directly in judo.

Among all inter-correlations all the components in all questionnaires, only seventeen were statistically significant (all were positive direction). All significant correlations were low to moderate size. Environmental barriers showed none statistically significant correlations with other variables, while Specific strategies to improve media coverage of women in judo showed the highest number of statistically significant correlations with other variables (seven).

Differences in the latent variables of the research

We have tested the differences among three categories of the educational level of participants (elementary school (13); high school (22); bachelor's, master's and doctoral degrees (15)). The only statistical significant difference is found in the variable Already present initiatives of the involvement in judo ($p < 0.05$), among elementary school judoka (highest means $M \pm SD$ 0.990 ± 1.066) and high school judoka (lowest means $M \pm SD$ -0.453 ± 0.669).

When testing the differences among three categories of the marital status of participants (single (34); married (14); divorced (2)), it appeared that the only statistical significant difference is found in the variable Environmental barriers ($p < 0.05$), among single participants (highest means $M \pm SD$ 0.156 ± 1.154) and divorced ones (lowest means $M \pm SD$ -0.400 ± 0.019), as well as married participants ($M \pm SD$ -0.311 ± 0.474).

When testing the differences among participants in Zagreb ($N=15$) and in other cities in Croatia ($N=35$), the only statistical significant difference is found in the variable "Already present initiatives of the involvement in judo" ($p < 0.05$), where lower means ($M \pm SD$ -0.444 ± 0.721) are found in Zagreb participants than in other cities ($M \pm SD$ 0.212 ± 1.055).

When testing the differences among participants who are athletes (competitors, $N=31$) or not ($N=19$), the only statistical significant difference is found in the variable "Organization of sport commitments for women" ($p < 0.05$), where higher means ($M \pm SD$ 0.239 ± 0.792) are found in athletes (competitors) than in non-competitors ($M \pm SD$ -0.389 ± 1.191).

When testing the differences among participants who are members of the Board in the club or Croatian Judo Federation ($N=19$) or not ($N=31$), four statistical significant differences are found, in the variables: Organization of out-sport commitments for women ($p < 0.05$; higher means ($M \pm SD$; 0.144 ± 0.114) for non-members than members 0.002 ± 0.948); Specific strategies to improve media coverage of women in judo ($p < 0.05$; higher means ($M \pm SD$; 0.312 ± 0.866) for members than non-members (-0.191 ± 1.141); Environmental barriers ($p < 0.01$; higher means ($M \pm SD$; 0.145 ± 0.114) for non-members than members (-0.249 ± 0.763); Combined barriers (financial, rules, traffic) ($p < 0.05$; higher means ($M \pm SD$; 0.134 ± 0.951) for non-members than members (-0.231 ± 1.068)).

None statistical significant differences are found about the impulses to engage in judo: parents ($N=16$), friends ($N=13$) and health, together with being judo fun ($N=16$). None statistical significant differences are found among those who won the medals on international competitions ($N=39$) and those who had not ($N=11$). Also, none statistical significant differences are found about the fact if some participant is a trainer or judo official (referee etc. $N=14$) or not ($N=36$).

Table 9. Correlations (Spearman) Among All the Components in All Questionnaires

	Positive personal motives	Negative environment	Social motives	Relaxation, fun	Ambition and self-esteem	Environmental	Obligations	Financial rules	Organization sport	Organization out-sport	Media strategies	Indirectly in judo	Directly in judo	Already present initiatives
Positive personal motives	1.00	0.00	0.07	0.30*	0.52**	0.12	0.19	0.07	0.46**	0.20	0.37**	0.05	-0.07	0.19
Negative environment motives		1.00	0.23	-0.07	0.01	0.06	0.26	-0.28*	0.15	0.08	0.28*	0.14	0.14	-0.02
Social motives			1.00	0.00	0.00	-0.01	0.05	-0.05	0.29*	0.24	0.54**	-0.03	0.14	0.00
Relaxation, fun				1.00	0.00	-0.02	0.32*	0.24	0.13	0.03	0.34*	0.07	0.07	0.06
Ambition and self-esteem					1.00	0.26	0.18	0.00	0.44**	0.08	0.21	0.36*	0.18	0.02
Environmental barriers						1.00	0.00	0.00	0.03	0.13	0.16	-0.12	-0.27	0.09
Obligations as barriers							1.00	0.00	0.08	0.17	0.28*	0.39**	0.24	0.13
Financial, rules, traffic barriers								1.00	0.18	0.10	0.09	0.02	-0.10	0.39**
Organization of women sport commitments									1.00	0.00	0.47**	0.09	0.02	0.32*
Organization of women out-sport commitments										1.00	0.50**	0.19	0.22	-0.02
Specific strategies media											1.00	0.17	0.14	0.15
Indirectly - judo official												1.00	0.65**	0.10
Directly in judo													1.00	-0.06
Already present initiatives														1.00

* Correlation significant with $p < 0.05$ (two-tailed)

** Correlation significant with $p < 0.01$ (two-tailed)

Discussion

Construct validity and reliability is checked out in seven questionnaires, which are used for the first time in Croatia: all the questionnaires showed satisfactory validity and reliability, and 15 latent dimensions are revealed. These dimensions are named: Positive personal motives, Negative environmental motives, Social motives, Relaxation and fun, Ambition and self-esteem, Environmental barriers to judo participation, Obligations as barriers, Finances and rules and traffic as barriers, Organization of sport commitments for women, Organization of out-sport commitments for women, Specific strategies for media to increase women participation in judo, Indirect strategies –to be judo official, Direct engagement in judo, “Already present initiatives involving women in judo.

When observing the correlations, it can be seen that Negative environmental motives, as well as women's Obligations as barriers positively and significantly correlated with age, time spent in judo and number of children. In other words, relatively older women have more obligations and more barriers that oppose to their engagement in judo, which is the similar trend like in the Europe (Sport and Physical Activity, 2010), or in Australia (Sparks, 2007). Organization of sport commitments for women negatively and significantly correlated with time spent in judo, what can be explained in terms of losing enthusiasm during lifespan, or during the period of increasing number and extent of the obligations. The facts that Organization of out-sport commitments for women positively and significantly correlated with number of children, as well as the engagement Directly in judo, can be explained in terms of the efforts of women that include their children in judo, too, or in other activities. The possible explanation why the Environmental barriers showed none statistically significant correlations with other variables, can lead us to the fact that these barriers couldn't be easily changed. On the other hand, the fact that highest number of statistically significant correlations with other variables has the variable Specific strategies to improve media coverage of women in judo can be explained in terms of women's perception of the importance of the media in issues about the engagement of women in sports. All (small number of) statistically significant differences that are found, in relation to several independent variables, can be understood in light of the fact that younger women are mostly competitors, while older are mostly trainers and/or members of the Board. On the other hand, it can be surprising that marital status is reflected only in the Environmental barriers (in expected direction: less barriers to single women than in married or divorces ones). Small number of statistically significant differences (as well as the correlations) can be also observed as the fact that women share similar problems, independently of relevant factors to which they are considered. However, negative trend of women's engaging in sports is perceived in several studies (Sparks, 2007; Sport and Physical Activity, 2010; Women's Sport and Fitness Foundation support NGBs, 2011; Khan et al., 2012).

To put it succinctly, one the main practical conclusions in this research is that women like judo and that they play various roles in judo (e.g. as competitor or coaches), which in turn enables their personal growth and offers them a sense of accomplish-

ment. However, because of their job-related (and, to a lesser extent, family related) obligations, they cannot devote as much time to judo as they would like to (Rendulić et al., 2014). According to estimates of the participants of the efforts to include women in judo, there is great potential here, and the current initiatives are simply not effective enough. Almost half of the surveyed judo practitioners suggested hiring women in various positions in sports as a solution. These women could work as coaches, judges, tournament officials, members of sports club management, members of the general committee of the Croatian Judo Federation (CJF) and as selectors. Giving women an opportunity to be educated for these positions is one of the prerequisites for women to be able to take over some of these positions. Greater media coverage of the sport could also be of help (Rendulić et al., 2014).

The most important advantage of this research is that it is the first of this type in Croatia, and that we surveyed more than a quarter of female judo practitioners in Croatia. The flaw of the research is the relatively small test set which is not representative of the age groups of the female judo practitioners (which was unavoidable). Creating effective programs to motivate women to practice judo without giving it up in the later stages, either as competitors, for recreational purposes or as sports officials, represents the long-term solution to the problem of female participation in judo (Rendulić et al., 2014). Understanding the issues better could help the Croatian Judo Federation and its members to improve the support given to women in judo, regardless of their role within judo clubs and organizations.

Conclusions

All seven questionnaires used to explore women engagement in Croatian judo showed moderate to high satisfactory reliability, together with good construct validity, in 15 latent dimensions that are revealed. When considering correlations, it has to be noticed that relatively older women have more obligations and more barriers that oppose to their engagement in judo. Only small number of differences are found among women engaged in judo, mainly among participants who are members of the Board in the club or in Croatian Judo Federation, as compared with those who are not (four statistical significant differences revealed): Board members and non-members perceive different types of barriers, as well as possibilities to stimulate women engagement and persistence in judo. Small number of statistically significant differences (as well as the correlations) can be also observed as the fact that all women partially share similar problems, while the media strategies are perceived as the most powerful to increase women's persistence in judo, in any type of engagement.

Acknowledgements

We are especially grateful to Croatian Judo Federation, together with all the clubs and women engaged in judo, who actively contributed in this research, or provide support for it.

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