

Research article

Participation Motivation and Student's Physical Activity among Sport Students in Three Countries

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Abstract

The main aim of this study was to examine the differences in motivation to participate in sport activities among sports students from three different countries. On a sample of 390 sports students from Slovenia, Croatia and Germany we studied what motivates an interest in being sports active. The sample was stratified across the choice to attend table tennis lessons at all three institutions and all students have completed the Participation Motivation Questionnaire (PMQ). The results revealed that the latent structure of the types of sports students' motives consisted of six factors (sport action with friend, popularity, fitness & health, social status, sports events, relaxation through sports). We also found significant sex differences in motivation to participate in sport activities for all sports students from the three different countries. We did not find relevant age-based differences among the students, and this is the only initial hypothesis that we can reject.

Key words: Sports activities, school, cross-cultural study.

Introduction

Cross-cultural comparison of the motivation for sport activities of sports students in three countries could provide us the information about the differences in their motivation, as well as about their differences compared with non-sport population. Motivation is a complex phenomenon that is impossible to simply subsume under a single model (Bosnar and Balent, 2009). Petz (2005) defines it as a condition where we are driven from the "inside" by some needs, impulses, desires, wishes, or motives, and directed towards achieving a goal that from the outside functions as a stimulus for behaviour. In a context of a motive to engage in physical activities and sports, the authors most often focused on a difference between intrinsic and extrinsic motivation. Intrinsic motivation refers to everything that drives us from the inside, i.e. the activities representing a goal as such, while extrinsic motivation refers to what drives us from the outside, i.e. when the activities represent the means for achieving some other goal. Differences in motivation for engaging in a physical activity between genders, age, frequency and duration of a physical activity have been found in previous researches (Egli et al., 2011; Moreno et al., 2008; 2010; Verloigne et al., 2011). With the student population, Egli et al. (2011) obtained data that male students are more motivated by intrinsic factors, or in other words by a need for power, competition and challenge, while female students are in majority driven by extrinsic motives, such

as body weight control and appearance.

Specifically, the experience of sport appears to be attractive to students for the following types of reasons: fun, enjoyment, improving skills, learning, being with friends, success, winning and health (e.g. Bandura 1997; Gaston-Gayles, 2005; Mouratadis et al., 2008; Murcia et al., 2010; Waldron and Dieser, 2010). In an attempt to solve one of the problems of assessing achievement motivation, sport psychologists developed specific assessment instruments adapted to sport activity and different sport situations (Gill, 2000; Jones, 2006; Mallett et al., 2007; Lonsdale et al., 2008; Spray et al., 2006). Motivation greatly influences an individual's performance in situations where one is physically capable of performing the task but is uncertain about his/her capabilities, which in many cases is a problem that drives people not to begin with a chosen sports activity. In general terms, motivation refers to the intensity and direction of behaviour. Ultimately, it always essentially means whether or not someone expects they will be successful when they attempt a particular skill.

The reasons one gives for participating and dropping out of sport have received extensive attention over the past few years in terms of recreation and as a competitive sport. Understanding why individual participate in sport is not a simple matter. One of most important issues is that people have many reasons for getting involved, and some of their reasons change from different point of view. Drawing on excellent reviews of the literature (Barnett et al., 2008; Biddle et al., 2003; Fraser-Thomas et al., 2008; Gould et al., 1996; Koivula, 1999; Smith et al., 2006; Tsorbatzoudis et al., 2006; Yan and McCullagh, 2004; Zaharidis et al., 2006), the reason sportspeople give for participating and dropping out are multiple and diverse. Weiss and Petlickhoff (1989), for example, categorized the major motives for participation into competence (e.g. to learn and improve skills), affiliation (e.g. to make friends be part of a team), fitness (e.g., to be physically active, get in shape), and fun. Some past research indicates that people have different achievement goals with regard to sports participation (Cervello et al., 2007; Whitehead et al., 2004) and it is reasonable to suggest that their attainment is a constituent of enjoyment. Among the several reasons given for decreased interest and a subsequent withdrawal from sport was a lack of fun, issues with the coach, the time commitment required, lack of playing time, an overemphasis on winning, and greater interest in other activities (Weiss and Ferrer-Caja, 2002).

Sedentary living is a leading cause of a poor qual-

ity of life, disability, and death in many countries around the world. Numerous well-conducted research studies on this topic have been completed over the past few years and they provide convincing evidence of the important physiological and psychological changes that occur during and following exercise training programs (Biddle et al., 2000; Haapanen et al., 1996). Many of the techniques used to promote physical activity originated from psychological theories of motivation and behaviour change (Wang and Biddle, 2001). In fact, the positive relationship between motivation, self-confidence and success is one of the most consistent findings in research about being involved in sports activities (Vlachopoulos et al., 2000). But, like with any other activity of an individual, the motivation must come from within – intrinsic motivation – to be effective and meaningful for someone. Motivation is all-important for success in sport – both in recreation and in competitive sport (Matsumoto and Takenaka, 2004).

Studies around the world have shown that young people are not as physically active as they need to be to enjoy the health benefits of physical activity (Duda, 1992; Dwyer, 1992; Fang, 2007; Goudas and Hassandra, 2006; Lutz et al., 2008; Strel and Sila, 2010). It is clear that more developmental research is needed to understand variations in reasons for participating in and withdrawing from sport and physical activity. The present study attempted to examine the possibility of differences in the motivation of sports students in three different countries. In times of globalisation the aspects of cultural diversity and cross cultural communication become every day more and more important also in sports activities among different countries. Western country Germany has about 82 million inhabitants and is fourth largest economy by nominal GDP. According to Germany Info (www.germany.info/relaunch/culture/life/sports.htm) almost half of population is sports active. Slovenia with 2.2 million inhabitants has according to Retar (2006) around 57% sports active people and Croatia with 4.4 million inhabitants more than 400 thousand active sports-people (Perman, 2011) - both countries are part of ex-Yugoslavia where economic output is dominated by the service sector.

The aims of this study were to establish:

- the latent structure of the types of the sports students' motivations;
- differences in motivation to participate in sport activities among the sports students from the three different countries; and
- age and sex differences in the motivation to participate in sport activities for all sports students from the three different countries.

It was intended that the results would serve as a basis for further in-depth studies.

Methods

Participants

The participants in our research were 135 students from the Faculty of Sport in Ljubljana (age 22.4 years

[SD=2.10]), 138 from Faculty of Kinesiology in Zagreb (age 21.86 years [SD=1.81]), and 117 from the German Sports School in Cologne (age 22.03 years [SD=2.01]). The sample was stratified across the choice to attend table tennis lessons at all three institutions. At all three institutions participants could choose one of the racket sports in sixth semester of their study. Data were collected during lessons and exercises for each group. At the time the questionnaires were distributed these students had obtained basic lessons in table tennis.

Procedure

In this project, 390 questionnaires were disseminated among students at the Faculty of Sport in Ljubljana, the Faculty of Kinesiology in Zagreb and the German Sports School in Cologne. According to the instructions provided, all 390 students returned the questionnaires – 262 male (59.1%) and 128 (28.9%) female students (more detailed information is presented in Table 1). The students were attending a table tennis course in the 6th semester of study and the average age of the respondents was 23 years.

Table 1. Gender data for the participants.

	Faculty of Sport, Ljubljana		Faculty of Kinesiology, Zagreb		German Sports School, Cologne	
	N	%	N	%	N	%
Male	70	51.9	114	82.6	78	66.7
Female	65	48.1	24	17.4	39	33.3
All	135	100.0	138	100.0	117	100.0

Instruments

Within this project we employed the Participation Motivation Questionnaire (PMQ; Gill et al., 1983) which has been widely used in several studies of motives to participate in youth sports. The students completed the PMQ (Gill et al., 1983), namely, a 30-item list of possible reasons students have to participate in sport. A five-point Likert scale was used. Respondents answered the stem "I participate in sport because ...", indicating their preferences from 1 ("not at all important") to 5 ("extremely important"). Results of the factor analysis of the PMQ revealed the factors of achievement/status, team atmosphere, fitness, energy release, skill development, friendship and fun as basic motives for involvement (Gill et al., 1983). In other research, Zaharidis et al. (2006) found six factors: skill development and competition motives (Cronbach's α reliability = 0.89), status/recognition (α = 0.85), energy release (α = 0.77), team atmosphere motives (α = 0.82), friendship and having fun through social interaction (α = 0.63) and, finally, motives for fitness (α = 0.83).

Data analysis

The data were processed with the IBM SPSS Statistics (19.0) software. The basic descriptive parameters were calculated (mean, standard deviation, frequency of answers). Univariate ANOVA was used to test for differences among the students in all three institutions for each item in the questionnaire. We then performed a factor

analysis (the Principal Components method with a Varimax rotation) for all examined participants (in three groups together), and the factor scores were used in a one-way MANOVA and discriminant analysis to determine differences among the students in all three institutions in their motives to participate in youth sports. In the post-hoc analysis, by using the Bonferroni method we sought to gain an insight into individual differences among students of the different institutions in the motivational structure of participating in a physical activity (sport).

Results

Important goals of our research program were: to create a rich database, develop a theoretical approach to allow a better understanding of the process underlying participation in sport and compare the motivation of the sports students with the motivation of high-school students and students of so-called non-sports faculties. Based on the results of the study, it can be presumed which motives are important for sports students for their participation in sports activities (Table 2).

In order to better define the latent motivational structure of all respondents together, Principal Component's analysis (hereinafter "factor analysis") with a Varimax Rotation was used in the following step, and six significant factors were extracted, which in total explain 62.69% of the entire space for the observed variables. In previous surveys PMQ have been adapted and used in many sports (Trembath et al., 2002), physical activities (Kolt et al., 2004) and school physical education settings

(Zahariadis and Biddle, 2000). The number of factors and indeed the component items identified through factor analysis have varied dependent upon the sample under investigation (Gill et al., 1983; Koivula, 1999). As such, whilst a basic 6 to 8 factor structure has been found, any use of the questionnaire requires identification of these factors and subsequent scale reliability support before the factors can be deemed as appropriate in the sample involved (Jones et al., 2006).

As Table 3 shows, 35.17% of the total space for variables can be explained by the first factor, about 14% by the second factor, about 12% by the fourth factor, and the other three factors interpret the remaining explained variance. The percentage of explained variance is practically equal to the share (63%) quoted by Zaharidis et al. (2006).

The reliability of the questionnaire in our research varies (for certain factors) from 0.568 to 0.877. Two factors (the fifth and sixth) are only defined with two cells each; therefore their low reliability was not unexpected.

After the Varimax Rotation converged in 19 iterations with a Kaiser Normalization, all six factors were named (Table 3).

The main projections of the statements offered in the questionnaire on the first factor are those related to action and friendship. This encompasses motives such as: I like the action, I like to have something to do, I like to have fun, I like the team spirit, I like being on a team, I like the challenge, I like to get exercise, I like to get out of the house. Therefore, this factor was named *sport action with friends*.

Table 2. Comparison among students of all three institutions for items of the Participation Motivation Questionnaire.

Items	Ljubljana		Zagreb		Köln		F - sign. p<
	X	SD	X	SD	X	SD	
1. I want to improve my skills	4.25	.76	4.52	.69	3.56	.97	.01
2. I want to be with my friends	3.71	.93	4.30	.90	3.96	1.09	.01
3. I like to win	3.57	1.16	4.43	.70	3.74	1.07	.01
4. I want to get rid of energy	4.24	.87	4.35	.68	3.91	.94	.01
5. I like to travel	3.82	1.10	4.08	1.05	3.16	1.27	.01
6. I want to stay in shape	4.60	.57	4.72	.52	4.13	1.03	.01
7. I like the excitement	3.90	.84	4.52	.62	3.66	1.04	.01
8. I like the teamwork	3.34	.99	4.14	.84	3.10	.85	.01
9. My parents or close friends want me to play	1.67	.90	3.05	1.25	2.38	1.32	.01
10. I want to learn new skills	4.22	.76	4.17	.97	3.96	.90	.05
11. I like to meet new friends	3.82	.90	4.35	.82	3.72	.94	.01
12. I like to do something I'm good at	4.41	.77	4.70	.51	3.95	1.00	.01
13. I want to release tension	4.02	.95	4.11	.91	3.28	1.51	.01
14. I like the rewards	2.99	1.25	4.12	1.10	2.72	1.11	.01
15. I like to get exercise	4.16	.95	4.57	.70	4.31	.99	.01
16. I like to have something to do	4.06	.98	4.33	.75	4.32	1.10	.05
17. I like the action	3.99	.97	4.44	.73	4.30	1.06	.01
18. I like the team spirit	3.62	1.05	4.28	.90	3.94	1.09	.01
19. I like to get out of the house	4.21	.88	4.32	.75	3.75	.94	.01
20. I like to compete	3.64	1.10	4.32	.75	3.50	1.00	.01
21. I like to feel important	3.12	1.18	3.70	1.12	2.49	1.11	.01
22. I like being on a team	3.63	1.02	4.15	.89	3.80	1.02	.01
23. I want to go on to a higher level	4.44	.66	4.43	.73	4.12	1.03	.01
24. I want to be physically fit	4.81	.46	4.78	.46	4.27	1.06	.01
25. I want to be popular	2.77	1.12	3.55	1.10	2.42	1.07	.01
26. I like the challenge	3.82	.88	4.43	.72	3.85	.96	.01
27. I like the coaches or instructors	3.10	1.06	3.64	1.09	3.56	.95	.01
28. I want to gain status or recognition	3.37	1.13	4.02	.89	2.68	1.12	.01
29. I like to have fun	4.48	.68	4.60	.59	4.25	1.14	.01
30. I like to use the equipment or facilities	3.46	1.07	4.54	.72	3.49	1.10	.01

Table 3. Factor structure of the Participation Motivation Questionnaire for students from all three institutions (Principal Components, Varimax Rotation).

Items	Component					
	1	2	3	4	5	6
VP 17 I like the action	.762					
VP16 I like to have something to do	.730					
VP29 I like to have fun	.602		.402			
VP18 I like the team spirit	.556			.551		
VP22 I like being on a team	.532			.481		
VP26 I like the challenge	.517					
VP15 I like to get exercise	.488					
VP19 I like to get out of the house	.464					
VP25 I want to be popular		.824				
VP21 I like to feel important		.814				
VP14 I like the rewards		.763				
VP28 I want to gain status or recognition		.709				
VP20 I like to compete	.411	.681				
VP3 I like to win	.464	.590				
VP23 I want to go on to a higher level	.406		.723			
VP10 I want to learn new skills			.718			
VP1 I want to improve my skills			.701			
VP24 I want to be physically fit	.421		.678			
VP6 I want to stay in shape			.608			
VP12 I like to do something I'm good at			.490			
VP9 My parents or close friends want me to play				.613		
VP8 I like the teamwork				.607		
VP27 I like the coaches or instructors				.568		
VP11 I like to meet new friends				.522		
VP2 I want to be with my friends	.446			.471		
VP30 I like to use the equipment or facilities				.459		
VP5 I like to travel					.670	
VP7 I like the excitement					.632	
VI13 I want to release tension						.766
VP4 I want to get rid of energy	.409					.562
Cronbach's alpha	.868	.877	.856	.765	.568	.572
Eigenvalues	4.55	4.16	3.58	3.06	1.87	1.582
Variance explained (%)	15.15	13.88	11.94	10.21	6.24	5.28

Legend: Component: 1 – Sport action with friends; 2 – Popularity; 3 – Fitness & Health; 4 – Social status; 5 – Sports events; 6 – Relaxation through sports

The second factor is defined by motives related to the popularity and importance sportspeople achieve through sports, i.e. victory (I want to be popular, I like to feel important, I like the rewards, I want to gain status or recognition, I like to compete, I like to win). Therefore, that factor was named *popularity*.

At first sight, we might wonder about such a high percentage of that variance since statements related to health were ranked the highest, but obviously the questions in the questionnaire were not evenly represented, namely, there was more questions related to success, competition and popularity than those relating to health and good physical condition. Such a lowered variability diminishes the correlation between the variables, which is a consequence of the first and second factor variance quantity extraction.

The third factor, determined by intrinsic motives related to a good condition and health, is named *fitness & health*. (I want to go on to a higher level, I want to learn new skills, I want to improve my skills, I want to be physically fit, I want to stay in shape, I like to do something I'm good at). If we connect intrinsic and extrinsic motivations with three basic goals of sports achievements, then we would observe the motives directed to competitive abilities and social approval as extrinsic motivation,

whereas the motives directed to improving sports skills are observed as intrinsic motivation (Bosnar and Balent, 2009).

The fourth factor, named *social status*, is defined by statements such as: (My parents or close friends want me to play, I like the teamwork, I like the coaches or instructors, I like to meet new friends, I want to be with my friends, I like to use the equipment or facilities).

The fifth factor is mostly determined by conclusions in relation to travelling, but also to exciting events, and is named *sports events*.

The reason for practicing sports, not being listed in any of extracted factors that explain the sixth best factor is intrinsic, i.e. I'd like to be relaxed; I'd like to free my energy; is named *relaxation through sports*. (For simplicity of expression, hereinafter the factors will be called dimensions of the Participation Motivation Questionnaire.)

Differences among students in the three countries in dimensions of the Participation Motivation Questionnaire

A discriminant analysis was conducted in order to establish factors of difference among the students from the various faculties. In Table 4 is obvious that both

Table 4. Differences among students from all three institutions (discriminant analysis).

Discrimination Function Significance	Eigenvalue	Wilks' λ	Canonical Correlation	χ^2 -test (Degrees of Freedom)	P
Discriminant Function 1	.752	.406	.655	339.23 (12)	<.01
Discriminant Function 2	.406	.711	.537	128.19 (5)	<.01

discrimination functions, that indicate factors of differences among students in the three countries in the dimensions of the Participation Motivation Questionnaire, are statistically significant. In other words, there are two factors of differences which statistically significantly differentiate participants from the different faculties in our study in relation to the dimensions of the Participation Motivation Questionnaire.

The group centroids are statistically significant different and distant (the highest centroid 0.605 is for Ljubljana, the middle is 0.520 for Zagreb and the lowest is -1.323 for Cologne) for the first discriminant function. For the second discriminant function the highest centroid value was held by students from Zagreb, the middle value by students from Cologne (-0.040), while the lowest centroid value was for Ljubljana (-0.740). On the basis of the discriminant functions, 72.3% of the originally grouped cases are correctly classified.

On the basis of ANOVA on the regression factor scores, i.e. overall results for individual dimensions (Table 5), it is noted that students from all three faculties (Ljubljana, Zagreb, Cologne) vary statistically significantly in all dimensions obtained by the factor analysis. By using post-hoc tests (one-way MANOVA), we established at which faculties there are statistically significant differences for individual dimensions among the students, and in what direction. In the first dimension (Sport Action with Friends), as well as the fourth dimension (Social Status), students from Ljubljana statistically significantly vary from students from Zagreb and Cologne. In the remaining four dimensions, statistically significant differences exist among all of the participants groups. In the third dimension (Fitness & Health), the most distant results are those from Ljubljana (the highest value) and

Cologne (the lowest value). In the second dimension (Popularity), fifth dimension (Sport Events), and sixth dimension (Relaxation through Sports), the most distant results are those from Zagreb (the highest value) and Cologne (the lowest value).

Differences among students' age groups in all three countries in dimensions of the Participation Motivation Questionnaire

A discriminant analysis was conducted in order to establish factors of difference between younger and older students from all faculties together. Table 6 shows that the discriminant function, indicating the factor of difference between age groups of students in dimensions of the Participation Motivation Questionnaire, is not statistically significant. In other words, the factor of difference does not statistically significantly differentiate the younger and older participants in our research regarding the dimensions of the Participation Motivation Questionnaire.

Considering that the discriminant function is statistically insignificant and that we did not find even one single statistically significant difference between the cities, we can assume that a relatively narrow age range does not differentiate participants regarding their motivation to participate in physical activities.

Sex differences among students in all three countries in dimensions of the Participation Motivation Questionnaire

To determine the factors of gender differences in students from the different faculties, we conducted a discriminant analysis. In Table 7 is obvious that the discriminant function, which indicates factors of gender differences among students in the three countries in dimensions of the

Table 5. Comparison between students from all three institutions (ANOVA) using regression factor scores of the Participation Motivation Questionnaire.

Dimension	Ljubljana (1)		Zagreb (2)		Köln (3)		F	R ₁	R ₂	Differences between Groups
	X	SD	X	SD	X	SD				
1 Sport Action with Friends	-.28	.85	.07	.66	.24	1.36	9.22**	.440	-.180	1.2** 1.3**
2 Popularity	-.16	1.05	.56	.72	-.48	.91	44.91**	.352	-.188	1.2** 1.3* 2.3**
3 Fitness & Health	.37	.96	.08	.74	-.53	1.08	30.08**	.346	.272	1.2* 1.3** 2.3**
4 Social Status	-.50	.93	.33	.98	.19	.87	30.50**	-.174	.583	1.2** 1.3**
5 Sport Events	.01	.98	.37	.81	-.44	1.05	22.71**	.391	.549	1.2** 1.3** 2.3**
6 Relaxation through Sports	.33	1.11	.03	.71	-.43	.99	20.36**	-.194	.225	1.2* 1.3** 2.3**

Legend: F= F-test in ANOVA; R₁= correlation with the first discrimination factor; R₂= correlation with the second discrimination factor. * = significant at p < 0.05; ** = significant at p < 0.01

Table 6. Differences between students in younger and older age groups separated by median (discriminant analysis).

Discrimination Function Significance	Eigenvalue	Wilks' λ	Canonical Correlation	χ^2 -test (Degrees of Freedom)	P
Discriminant Function	.030	.971	.170	11.10 (6)	>.10

Participation Motivation Questionnaire, is statistically significant. In other words, there is one factor of difference which significantly differentiates participants by gender in our study in relation to dimensions of the Participation Motivation Questionnaire.

The group centroids are statistically significant different with the distant higher centroid of 0.236 being for the male students and the lower centroid of -1.480 being for the females. On the basis of the discriminant function, 64.9% of the originally grouped cases are correctly classified.

On the basis of ANOVA of the regression factor scores, i.e. overall results for individual dimensions (Table 8), it is noted that male and female students from all three faculties (Ljubljana, Zagreb, Cologne) vary among each other statistically significantly in the second and sixth dimensions (Popularity and Relaxation through Sports). As could be expected, sport potentially means more to men as a tool for achieving popularity in society and among friends, while women experience sport more as a means of relaxation, which is in principle congruent with traditional male and female stereotypes and roles.

Discussion

Sports psychology deals with manifold psychological characteristics of sports activities. It is perhaps motivation that represents the most important field within the discipline (Tušak, 1997). In order to understand motivation in sport, one has to approach the problem with specific sports models which, on one hand, use scientific discoveries of general psychological motivation and, on the other, combine them with the specifics of the sport, the training process and the competition.

Table 2 shows one can conclude that for all variables of the questionnaire there are significant differences in reasons why students at the three surveyed faculties want to participate in sports. We assumed that one of the reasons students of sports faculties enrol in that

faculty is that they wish to improve their motor abilities and satisfy their need for exercise. In other words, in view of motivation to participate in sports, already at the very beginning they probably achieve above-average results relative to those of students from other faculties. However, we cannot use this fact to interpret the results we obtained because it is evident that there are statistically significant differences in motivation to participate in physical activities, depending on the faculty (state/country) that the students come from. We can only speculate whether the differences are conditioned by the different faculty programs, specific standpoints on practicing sports, or wider cultural influences.

Considering that the interpretation of individual differences in the results for students from the different faculties regarding the questionnaire items would be quite complex, we tried to establish latent dimensions of the questionnaire and carried out further analyses of the factor scores we obtained.

Taking into consideration that, for the purpose of this research, students from sports faculties were surveyed, the assumption is that the reason for their inconsistency can be explained by cultural differences (Yan and McCullagh, 2004). Maslow (1970) compared needs for being a member of something, love and other social needs, which include giving and accepting and are more dominant in Western society. Athletes are content to be part of a team where they can fulfil such needs; they are content to be noticed, to have a certain status.

Differences regarding the students from Ljubljana in terms of their lower values for the Sport Action with Friends and Social Status dimensions can potentially be interpreted with the greater individualism of the Slovenian students in relation to the students from Zagreb or Cologne. Entirely speculatively, we can assume there is a specific set of values in Slovenia which intensifies the distinction between the collectivist culture of former socialist countries and the individualism of Western countries. That is to say, the fact that Slovenia is part of the

Table 7. Sex differences among the students (discriminant analysis).

Discrimination Function Significance	Eigenvalue	Wilks' λ	Canonical Correlation	χ^2 -test (Degrees of Freedom)	P
Discriminant Function	.114	.898	.320	40.645 (6)	<.01

Table 8. Comparison between male and female student's at all three institutions (ANOVA) using regression factor scores of the Participation Motivation Questionnaire.

Dimension	Male (1)		Female (2)		F	R ₁
	X	SD	X	SD		
1 Sport Action with Friends	.045	1.001	-.091	.996	1.550	.189
2 Popularity	.169	.910	-.344	1.087	23.547 **	.738
3 Fitness & Health	-.049	.977	.099	1.041	1.831	-.206
4 Social Status	.016	1.025	-.033	.951	.201	.068
5 Sport Events	-.032	.950	.066	1.096	.818	-.138
6 Relaxation through Sports	-.126	.949	.256	1.054	12.691 **	-.542

Legend: F= F-test in ANOVA; R₁= correlation with first discriminant factor; R₂= correlation with second discriminant factor. ** = significant at p < 0.01

European Union might affect the stronger need for Slovenians to be different from inhabitants of other socialist countries even in relation to motivation for physical activities. In that context, Slovenians could find physical activity (sport) important for their health, but not as means for socializing. However, the biggest differences were found between Zagreb and Cologne, in the direction of higher results for the students from Zagreb, in up to three dimensions: the second, fifth and sixth. Clearly, physical activity holds greater significance for the students from Zagreb than for the students from Cologne. One potential reason could also be found in physical activity being an extremely important means of an individual's affirmation in Croatia. Considering that in the conditions of a recession it is more difficult to find affirmation in other fields of work (which is potentially more pronounced in Croatia than in Germany or Slovenia), sport is a field where an individual, regardless of economic circumstances, can accentuate his/her qualities.

Activity trait in sports has had a significant effect on both exercise intention and exercise behaviour (Rhodes et al., 2004). Thus, the motivational factors that contributed to participating in sports at all three institutions vary amongst each other although, conversely, there are some which characterize all of them: motivational words, parent/relatives, friends, supporters, environmental factors, popularity of the sport, fitness and health. Further, understanding extrinsic motivation also helps teachers understand more about the surroundings that will enhance students' motivations. Another aspect concerning the lack of activity in students despite positive sports motivation might also be the increasing amount of time students have to spend on study, work and duties. Therefore, individual time management strategies for an active lifestyle need to be offered at all levels of student sport.

In conclusion, by using MANOVA in the final part of the analysis we tested whether there were interactive effects between gender and the institution students attend, the students' gender and age, their age and the institution which students attend, and an overall interaction of all three factors (institution, gender, age group). However, the results unmistakably revealed no statistically significant interactions.

At the end, we must be aware that some limits of this paper exist, especially due to the methodology. In our case, the factor analysis of the motivational structure was applied to a relatively small sample.

Principle Components Analysis, performed on all the participants together (from all three countries) may not be the appropriate analysis for this study. In multi-group cross-cultural comparisons, typically the measuring instruments has been translated from the language of the "source" country in which it was developed and normed into the language of the "target" country in which it is to be used. It is typically assumed that the instrument of measurement is operating in exactly the same way and that the underlying construct(s) has the same theoretical structure and meaning across the groups of interest. Van de Vijver and Leung (2001) define bias as a generic term for all nuisance factors threatening the validity of cross-cultural comparisons. In our research, we adjusted our

instrument only according to language, but neglected three primary sources (types) of bias: (a) the construct of interest (*construct bias*), (b) the methodological procedure (*method bias*), and (c) the item content (*item bias*) (Van de Vijver and Tanzer, 2004). Among all correct data analysis methods that are usually used for avoiding the bias, we used the simplest one (comparing cross-cultural samples only with language adjustment). However, in future research we have to use more sophisticated methods, such as structural equations modelling (Byrne and Watkins, 2003).

Additionally, the Participation Motivation Questionnaire (Gill et al., 1983) may be out dated and therefore not the optimal instrument with which to examine the motivational orientation of sports students. Rather, the Sport Motivation Scale (Pelletier et al., 2001) or the Behavioural Regulation in Sport Questionnaire (Lonsdale et al., 2008) might be more insightful alternatives with which to examine the research questions.

The potential implications of the results can be in better understanding the relationship between different motivational orientations – in particular, extrinsic motivation – and sport participation among school-aged individuals may help those in leadership positions (i.e., coach, teacher, trainer) to develop strategies that will foster sport participation. In the context of Self Determination Theory, students can be encouraged in developing more autonomous orientations for sport activity, rather than controlled and impersonal, especially in certain countries. For example, the aspect Sport action with friends, Fitness & Health and Relaxation through sports can be described as more desirable (autonomous). The novelty and scope of the research might compel a qualitative research design, which might offer further insight regarding the motivational orientations of sports students from different countries (Lonsdale et al., 2009). In past years motivation has been a very important object of study among sports and exercise psychologists around the world. Achievement Goal Theory (Nicholls, 1989) and Self-Determination Theory (Deci and Ryan, 1985; 1991; 2000; Ryan and Deci, 2000) are among PMQ the most prominent current theories of motivation in the sport psychology literature and each has had considerable success in explaining motivational patterns in sport settings (Murcia et al., 2007).

The first and utmost limitation of this survey is the generalizability of the results. This current study adopted a convenient sampling method due to the difficulty in obtaining college action sports participants in all three countries. Therefore, it should be careful when generalizing the results of this study. The results of this current study might not be generalized beyond the population of other students at the same universities. However, the study still added more information in the understanding of globalization in different countries to the existing literature. Therefore, the results obtained in this survey will above all serve research purposes. A recommendation and further part of this project is that the results should be confirmed in a larger investigation of different faculties and of all students.

Conclusion

Motivation for sport activities has become a very popular area of interest among sport psychologists. In our research we found the latent structure of sports students' types of motives as consisting of six factors (dimensions), similar as in other researches. We found statistically significant factors of differences in motivation to participate in sport activities among sports students from three different countries. We also found significant sex differences in motivation to participate in sport activities for all sports students from three different countries. We did not find relevant age-based differences among the students, and this is the only initial hypothesis that we can reject.

This study also reinforced the importance of the pleasure to be gained from participating in sports.

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Key points

- The potential implications of the result can be in better understanding the relationship between different motivational orientations – in particular, extrinsic motivation – and sport motivation among school-aged individuals.
- In the context of Self Determination Theory, students can be encouraged in developing more autonomous orientations for sport activity, rather than controlled and impersonal, especially in certain countries.
- Significant factors of differences have been found in motivation to participate in sport activities among sports students from three different countries and also some significant sex differences have been found in motivation to participate in sport activities for all sports students.

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