

## Competitiveness of the sport system in the Republic of Srpska

SINIŠA VUKADINOVIĆ<sup>1</sup>, SLOBODAN SIMOVIĆ<sup>2</sup>, JELENA JOVANOVIĆ<sup>3</sup>

<sup>1</sup> Held Garten Landschaftsbau, Wiesbaden, GERMANY

<sup>2</sup> Faculty of Physical Education and Sport, University of Banja Luka, Republic of Srpska, BOSNIA AND HERZEGOVINA

<sup>3</sup> Faculty of Sport and Physical Education, University of Belgrade, REPUBLIC OF SERBIA

Published online: January 30, 2021

(Accepted for publication January 22, 2021)

DOI:10.7752/jpes.2021.01041

### Abstract:

In recent years, elite sport systems have become the subject of numerous benchmarking research, and a method for measuring their competitiveness was developed. This study aimed to improve the methodology of the existing model of measuring sport system competitiveness at the international level, which should bring about improvements in the theoretical understanding of sporting success factors in individual nations. In fact, this study has improved the methodology of the model that already exist and is used for measures of competitiveness of the sports system. Particularly, the study contributed to appraising the level of development and significance, of key sporting success factors. Evaluation of policies of elite sports in the Republic of Srpska was used to measure sporting success factors through the input–throughput–output process. The results of this study pointed to the cause of the inadequate competitiveness of the elite sport system in the Republic of Srpska. The study exceeded the qualitative level of policy development for elite sports and for the first time, sporting success factors for the Republic of Srpska have been expressed quantitatively as well. Namely, competition in sports is getting higher, and top international success can only be achieved if there is a balance between effectiveness and efficiency. The success of sports and athletes in the Republic of Srpska will require a long-term and stable system for developing elite sports, which must have a much higher level of support in terms of finances, human resources and science than it has been the case so far.

**Key Words:** - benchmarking, success factors, elite sport, competitiveness.

### Introduction

Sports is widely accepted as the core component to unite our global society, the economic resources that create added values, the tool for nations' development and cohesion, and the method for increasing national attractiveness (Hyuk 2019). Globalization is indeed a major factor in establishing modern-day principles of international sports. It has reduced the importance of country borders and, as pointed out by Maurice Roche (2002), brought about global competitiveness, which has existed in sports forever. Consequently, Milan Mihajlović (2013) believes that elite sports results can be measured and validated exclusively in international competition. Efficiency studies applied to the field of sports constitute a wide literature that can be classified into two main blocks, one focused on international multi-sports events and the other on case studies of specific sports (Torres/Martin/Guevara 2018).

The rivalry for medals at great international sport competitions is getting fiercer, and achievement of sporting success on the international scene is increasingly significant to more and more countries (Brouwers 2015). Siniša Vukadinović (2017) states that international success can only be achieved if there is a balance between effectiveness and efficiency. Mick Green and Barrie Houlihan (2005) and Vladimir Koprivica (2013) point out that this phenomenon has led many countries to adopt a strategic approach to fostering top athletes. In practice, this means that sports organizations largely and increasingly depend on state funding (Willem/Scheerder 2017). It plays a pivotal role to strengthen national identity and to enhance the country's positive image in international relations (Bayle 2005). In any case, sporting success is a valuable resource for government authorities to achieve many goals which are not directly sports-related. This is what lead to the development of models for measuring national Olympic achievement according to toe number of medals pertaining only to open societies, i.e. societies with a high degree of political and civil liberties, in order to avoid previously indicated situations (Barth/Emrich/Dumann 2017).

Competitiveness is primarily linked with economy, and in the past three decades it has become one of the most frequently analysed economic terms. The position of some countries toward certain aspects of competitiveness was analysed by different international institutions. The purpose of such analyses is not only to determine the ranking of countries, but also to provide countries with an opportunity to take note of their

deficiencies, and remedy them in order to improve their competitiveness. (Bergsgard et al. 2007; De Bosscher et al. 2015; Sotiriadou/De Bosscher 2018). Studies on competitiveness, especially in elite sports, are complex because sports intertwine with commercial, political, societal and cultural factors (De Bosscher 2018; Dowling/Brown/Grix 2018). The reason is that despite a constant convergence of elite sport systems in an unobligated world, there still remains a high level of variation among nations (Andersen/Houlihan/Ronglan 2015; Houlihan 2013). In the first decade of the 21st century, organization of sports was the topic of numerous studies (Böhlke/Robinson 2009), but most studies of elite sport policies used qualitative and descriptive research methods (Andersen et al. 2012; Bergsgard et al. 2007; Diegel/Burk/Fahrner 2006; Green/Houlihan 2005; Houlihan/Green, 2008).

Inspired by these economic models, Veerle De Bosscher et al. (2006) developed the first conceptual model in elite sports, called Sport Policy Factors Leading to International Sporting Success (SPLISS). Relying on various international studies of competitiveness, this model examines how countries develop and implement policies which are based on key sporting success factors, which can lead to competitive advantages. Specifically, the studies focus on those components that can be shaped by policies on elite sports. This model transforms key sporting success factors, categorized under nine pillars of the SPLISS model, into measurable units which are aggregated into the final score for each individual pillar. This method of measuring competitiveness is often used in the economic sector, while it is still relatively new in sports.

There aren't many comparative studies in sports, except those that are based solely on descriptive analysis, which examine general trends and similarities among nations in elite sports (Bergsgard et al. 2007; Digel et al. 2006; Green, 2007; Green/Houlihan 2005, Oakley/Green, 2001). Nils A. Bergsgard et al. (2007) point out that many international comparative studies have failed to establish analytical relations among the variables. Besides, there is a visible deficiency of standardized research methods used for comparison, as well as the availability of quantitative data on policies on elite sports (Henry/Amara/Al-Tauqi 2005).

The first step towards creating a model of elite sport system competitiveness was given by Veerle De Bosscher et al. (2006). This was the first study that attempted to go beyond the descriptive level of international comparison, by transforming the qualitative and quantitative data into a points system. Therefore, the paper initiated a method of comparing competitive positions of countries in elite sports (De Bosscher et al. 2008). It should be pointed out that this model of measuring the competitiveness of elite sport systems is still being developed and improved, which resulted in the latest and most recent research project, the SPLISS 2.0 (De Bosscher et al. 2015; De Bosscher 2018). This is a multi-dimensional model, based on input and throughput indicators, and is operational with 96 critical success factors, allowing for much more objective comparisons (De Bosscher 2016).

However, Popi Sotiriadou, Lisa Gowthorp, and Veerle De Bosscher (2014) point out that SPLISS is a general model for national policies on elite sports, not for specific individual sports. Namely, studies were done for individual sport as well, such as for tennis and athletics (Brouwers/Sotiriadou/De Bosscher 2015; Truyens et al. 2016) and elite sport schools in Flanders (De Bosscher/De Knop/Verthongen 2016).

This model was acclaimed at all levels. On the other hand, Ian Henry and Ling-Mei Ko (2015) list several limitations which are evident in the SPLISS study. They primarily pertain to the internal validity, i.e. the validity of measures which are used in this conceptual model. In SPLISS, this relates to the dependable variable, which is measured with the number of medals won, market share, or some other quantitative measure, which is taken as the measure of international success in elite sports. These authors give two arguments that this instrument is quite deficient. First, equating medals with value in all sports cannot provide an adequate measure of national priorities. Second, since most countries won a very small number of medals at the Olympic Games, such a measure excludes most countries from the comparison. The authors further note a problem in the reliability of the measurements in the sense of data compatibility and interpretation.

There are many other factors that influence the development of elite sports, but are not included in the SPLISS model because they cannot be controlled and directly influenced, and as such cannot contribute to the development and management of elite sports (De Bosscher et al. 2015). These factors, which include culture, politics, sponsors and the media, were identified by Helmut Digel (2001) as *an elite sports environment*. Veerle De Bosscher et al. (2015) point to the need for these factors to be examined at different levels for each country and each sport individually. But still, it makes sense to point out the culture of elite sports as a factor which is in some cases crucial to sporting success.

Competitiveness of the sport system in the Republic of Srpska was measured using two research instruments – the first was filled by experts in sports, and the other was filled out by key stakeholders in sports. The former is the sole focus of this study. This instrument comprises 68 sporting success factors which appear in the nine pillars of policies on elite sports. This model, which was developed by Veerle De Bosscher et al. (2008, 2015) has been merely adapted to the specific circumstances in the sport system of the Republic of Srpska, having in mind that this study primarily observes the high quality level of competitive sports, not the elite level, since sports and athletes in the Republic of Srpska do not achieve major sporting results at great international competitions, primarily the Olympic Games. The law on Sports of the Republic of Srpska (the National Assembly of the Republic of Srpska, 2002) indicates that high quality sport comprises activities which yield

notable sport quality and results at the local and national level, as well as results which athletes achieve at international competitions, when the results cannot be qualified as elite.

In order to enhance and improve the classical method of obtaining predictions, the Delphi method was used. Since factors of policies on elite sports are extremely difficult to quantify, because they are mostly of qualitative nature, expert knowledge was used to predict the importance and level of development of specific factors of policies on elite sports. Experts also provided their comments on the success of sports and athletes in the Republic of Srpska at the national, regional and international level, which was at the same time a dependable variable in this study.

The main goal of this study was to improve the methodology of the existing model of measuring sport system competitiveness at the international level, which should bring about improvements in the theoretical understanding of sporting success factors in individual nations.

*Hypothesis 1 The level of development of the elite sport system of the Republic of Srpska, compared to elite sports policies of other countries, indicates a satisfactory level of competitiveness of the elite sport system of the Republic of Srpska.*

*Hypothesis 1a The organization of the elite sport system and the efficiency and effectiveness of the public sector are on a sub-par level, which reduces the competitiveness of the elite sport system of the Republic of Srpska.*

*Hypothesis 1b Participation in sports, organized and unorganized, is at a low level and reduces the competitiveness of the elite sport system of the Republic of Srpska.*

*Hypothesis 1c The selection and development of talents are at a low level and do not represent a competitive advantage of the elite sport system of the Republic of Srpska.*

*Hypothesis 1d Support to athletes during and after their careers is at a sub-par level and reduces the competitiveness of the elite sport system of the Republic of Srpska.*

*Hypothesis 1e There are too few sporting facilities that meet international standards, which reduces the competitiveness of the elite sport system of the Republic of Srpska.*

*Hypothesis 1f There are too few qualified coaches and there is little opportunity for their professional development, which reduces the competitiveness of the elite sport system of the Republic of Srpska.*

*Hypothesis 1g A lack of international sports competitions leads to a poor sporting climate and reduces the competitiveness of the elite sport system of the Republic of Srpska.*

*Hypothesis 1h A lack of quality academic work reduces the competitiveness of the elite sport system of the Republic of Srpska.*

## Material & methods

Evaluation of crucial sporting success factors was done in four steps, where experts made their final judgements on the significance and level of development of each factor of the elite sport system of the Republic of Srpska (Suzić 2012). The first step was to present the experts with the problem, and obtain their expert evaluations. Then, in the second step, the arguments were summed up and the experts were presented concise summaries of the reasons for extreme and complementary arguments. The third step saw a revision of the expert's positions with a presentation of reasons for and against the arguments on middle ground and extreme viewpoints. In the final, fourth step, the previous arguments were summed up, and the participants were given a last chance to revise their evaluations.

The expert evaluation of the level of development and significance of individual sporting success factors using the Delphi method was filled out by twelve experts. Since the subject of this study required a multidisciplinary approach, the experts were selected based on their reputation, i.e. the results of their professional and academic work. The experts were not aware of whom the other participants were, and they gave their expert opinions completely independently of any other parties. The fundamental question at this point is why we opted for twelve experts, instead of any other arbitrary number? Research has shown that the optimal size of an expert team for this method is 10 to 15 expert specialists, and that a team of 12 experts statistically makes the least mistakes. This is why this study formed an expert team of 12 experts who are most familiar with the observed phenomenon (Zelenika 2011).

The obtained results were calibrated using factor analysis (Bartlett's Test of Sphericity has a significance of  $p < .00$ , while the Kaiser-Meyer-Olkin Measure of Sampling Adequacy indicates that the sampling adequacies are below .40 – KMO = .29), with three extracted factors, two of which have a Cronbach's Alpha coefficient larger than .50: Sports Administration ( $\alpha = .81$ ), and Sports Logistics ( $\alpha = .84$ ). Since the factor analysis extracted only one variable in the third factor, there was no need to calculate the Cronbach's Alpha coefficient for that factor.

In order to overview the effect of each individual variable on the dependable variable – Success of sports and athletes of the Republic of Srpska, multiple stepwise regression was carried out.

The research was carried out in the first half of 2016 and took four months. The Ministry of Family, Youth and Sports of the Republic of Srpska supported this study with its resources, and in its Memorandum No. 11/1.197/15, dated 23 February 2015, the Ministry committed to providing any information relevant to carrying out the study successfully. The gathered data was then statistically processed using IBM SPSS Statistics 21.0.

**Results**

The competitive position of the sport system in the Republic of Srpska is presented in Picture 1, and this points system was developed based on the SPLISS study (De Bosscher et al. 2008). The level of development of the nine pillars of the elite sport system of the Republic of Srpska was compared to the mean and maximal values of the other 16 countries for each pillar. Experts on sports in the Republic of Srpska found that *Selection and development of talents, ensuring a sufficient number of coaches and their development, Academic work and Support to athletes during and after their careers* have the lowest percentage of development in the Republic of Srpska sports system. On the other hand, the pillars of sports in the Republic of Srpska with the highest percentage of development are *Participation in sports* and *(Inter) national competitions*.

Factor analysis was used to examine the expert evaluation of the level of development of the elite sport system of the Republic of Srpska. *Cattell's scree test* indicates that two out of the nine components might be singled out as dominant, i.e. as two factors (Picture 2). Using the Kaiser-Guttman criterion, three latent dimensions were revealed, which together account for 80.75% of the total variance.

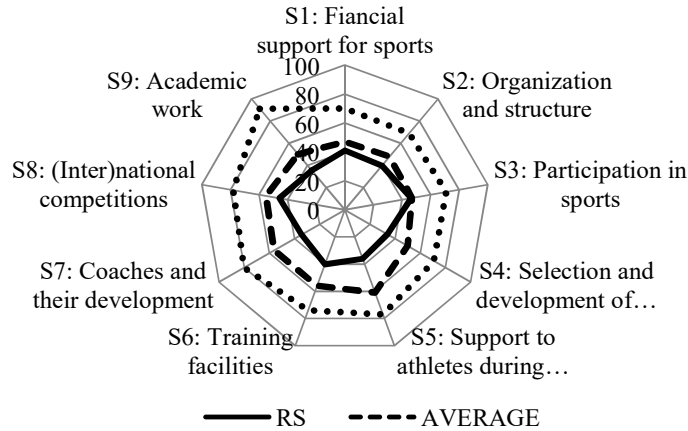


Figure 1 Graphic representation of the level of development in the elite sport system of the Republic of Srpska in relation to average and maximal values.

After the varimax rotation, the first factor accounts for 32.54% of the explained variance, and the greatest strain occurred in the variables Academic work, (Inter)national competitions, ensuring a sufficient number of coaches and their development and Organization and structure of the elite sport system (Table 1). The second extracted component accounts for 26.99% of the total variance (Table 1). For the second factor, the greatest strain occurred in variables Selection and development of talents, Support to athletes during and after their careers, Participation in sports and Training facilities.

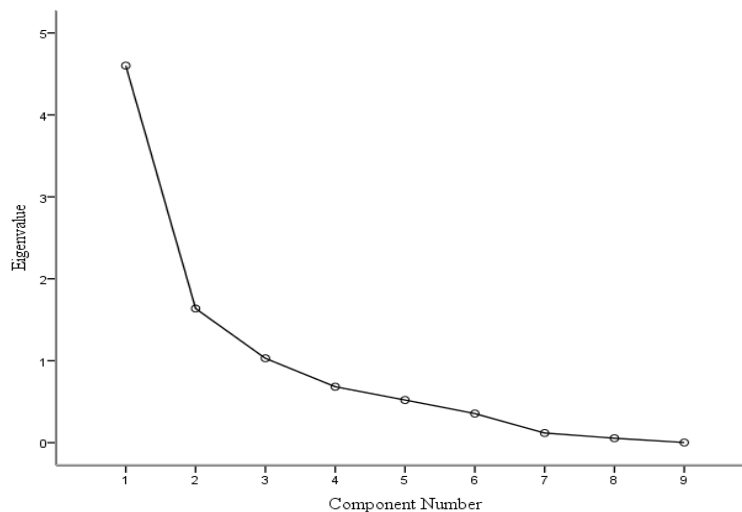


Figure 2 Cattell's scree test

The third extracted component accounts for 21.21% of the total variance, with maximal factor loadings for the variable Financial support (Table 1).

Table 1 Matrix of rotated components

	Factor	
	1	2
Study	.87	
Competitions	.74	
Coaches	.73	
OrgStr	.66	
Selection		.79
Support		.75
Participation		.74
Objects		.64
Eigenvalues	2.92	2.43
% of Variance	32.54	26.99

Note. Factor loadings of  $<.50$  have not been represented. AcadWork = Academic work; Competitions = (Inter)national competitions; Coaches = Ensuring a sufficient number of coaches and their development; OrgStr = Organization and structure of the elite sport system; Selection = Selection and development of talents; Support = Support to athletes during and after their careers; Participation = Participation in sports; Facilities = Training facilities; FinSup = Financial support.

Table 2 shows descriptive statistics and intercorrelation matrix that represents policies on elite sports of the Republic of Srpska and Success of sports and athletes of the Republic of Srpska. There is significant correlation between Success of sports and athletes of the Republic of Srpska and the variable *(Inter)national competitions*.

Table 2 The bottom triangular matrix of intercorrelation and descriptive statistics of the pillars of the elite sport system and sporting success in the Republic of Srpska

Variables	SS	S1	S2	S3	S4	S5	S6	S7	S8	S9
SS	—									
S1	.16	—								
S2	.11	.47	—							
S3	.26	-.08	-.01	—						
S4	.24	.13	.30	.44	—					
S5	.26	.10	.35	.45	.95**	—				
S6	-.19	.38	.40	.18	.71**	.68	—			
S7	.42	.46	.57*	.05	.66**	.75**	.42	—		
S8	.58*	.08	.36	.22	.66**	.69**	.36	.59*	—	
S9	.46	-.22	.48	.37	.55*	.64*	.23	.56*	.62*	—
M	2.58	1.75	1.55	2.18	1.53	1.55	1.59	1.47	2.01	1.60
SD	.66	.40	.69	.42	.52	.68	.71	.64	.85	.82

Note SS = Success of sports and athletes of the Republic of Srpska; S1 = Financial support for sports; S2 =

Organization and structure of the elite sport system; S3 = Participation in sports; S4 = Selection and development of talents; S5 = Support to athletes during and after their careers; S6 = Training facilities; S7 = Ensuring a sufficient number of coaches and their development; S8 = (Inter)national competitions; S9 = Academic work.

\* $p < .05$ . \*\* $p < .01$ .

The multiple regression model shows that (Inter)national competitions as the predictor variable dominantly determines Success of sports and athletes of the Republic of Srpska, i.e. the criterion variable in this model (Table 3).

Table 3 Multiple regression model

Model		B	SE B	$\beta$
1	(Constant)	1.65	.43	
	Competitions	.46	.20	.58

Note.  $R^2 = .34$ ;  $\Delta R^2 = .34$  ( $p < .05$ ). Competitions = (Inter) national competitions.

The multiple correlation coefficient is  $R = .58$ , while (Inter) national competitions can account for around 35% of the variance in Success of sports and athletes of the Republic of Srpska. The remaining eight variables were excluded from the calculation of predictor variables.

## Discussion

Results of the factor analysis showed that three factors are extracted in the elite sport system of the Republic of Srpska. The first factor is characterized by variables related to the managerial level of the sport system. Consequently, the first factor was named *Sport governance*. This expression has been in use in recent literature, and Russell Hoyer and Graham Cuskelly (2007) describe it as “a system by which the elements of an organisation are directed, controlled and regulated”. The second factor pertains to various support services which, in an elite sport system, are provided to young talented elite athletes. Consequently, this factor was

named *Sport logistics*. In the evaluation of policies on elite sports in the Republic of Srpska, these two factors together account for 59.53% of the total variability. *Financial support for sports* is singled out as an isolated entity, which gives a relatively significant contribution to the interpretation of the elite sport system of the Republic of Srpska. The idea of *Financial support for sports* as a separate factor is supported by isolating finances as the only input determinant. Certainly, financial resources measure the efficiency of the elite sport system of the Republic of Srpska, while the other eight pillars in this study measure the effectiveness of the system. After the varimax rotation, which leads to a different arrangement of the factors in relation to the primary categorization, a new priority of components was obtained, and now the foreground is occupied by *Academic work*, as the variable with the highest factor loading in the first component, which also accounts for the largest percentage of the total variance.

The development of elite sports and athletes should largely be dependent on the development of science on sports, and was recognized as a crucial sporting success factors as early as in studies by Ben Oakley and Mick Green (2001) and Mick Green and Barrie Houlihan (2005). Veerle De Bosscher et al. (2015) found that academic work has a significant correlation to sporting success, and have singled out this element as an indicator of nations that strive to be leaders in developing elite sport systems. They point out that academic work should provide meaningful support to athletes in their development and thus become a source of sustainable competitive advantage. A national sports institute should be the main instigator and implementer of scientific and technological development in physical education, sports and recreation. Moreover, this study has confirmed the importance of Academic work, the most important determinant in Sport governance. The low level of development of Pillar 9 in the Republic of Srpska hinders any major sporting results at the international level.

Veerle De Bosscher et al. (2015) showed that nations with higher efficiency have a higher percentage level of development for Pillar 2 – *Organization and structure of the elite sport system*. In other words, these are countries which achieve better sporting results with the least amount of funding (Robbins/Coulter, 2017). These countries (Australia, the Netherlands and Japan) have an integrated approach to policies of sporting development. Their sport system is characterized by strong coordination of activities at the national level, a clear hierarchy, participation of athletes and coaches in sport policy development and a vital role of management in its organizational structure. Further, this study corroborates the significance of Sport governance as the most important factor in the elite sport system in the Republic of Srpska.

A significant correlation with *Success of sports and athletes of the Republic of Srpska* was found in Pillar 8 – *(Inter)national competitions*, and it was determined that (Inter)national competitions contribute the most to the Success of sports and athletes of the Republic of Srpska. The complexity of the sport system of Bosnia and Herzegovina impacts sport competitions that take place in its territory. As of 1999 and the Lausanne declaration, athletes from the Republic of Srpska perform in a joint team lead by the Olympic Committee of Bosnia and Herzegovina. In reality, there are few athletes from the Republic of Srpska who attend great international competitions, and such a system dictates the sporting success (Ministry of Family, Youth and Sports of the Republic of Srpska 2012).

Participation in sports is a pillar of an elite sport system in which the Republic of Srpska is significantly close to the average level of development of other countries. However, as Veerle De Bosscher et al. (2015) state, participation in sports is a long-term development factor, which is certainly ranked low in other countries as well. In their study, they concluded that participation in sports and selection and development of talents do not have a significant impact on sporting success, but that these pillars may lead to a competitive advantage if they are developed in the long-term. They further state that the level of development of these two pillars is higher primarily in smaller countries, both in size and population. These conclusions have been corroborated in this study as well, since Pillar 3, along with Pillar 7, is at the highest level of development in the elite sport system of the Republic of Srpska.

The greatest limitation of this study pertains to measuring the dependable variable, i.e. the output. According to Veerle De Bosscher et al. (2008, 2015) the measure of international sporting success is the number of medals won and the percentage of total medals won at the Olympic Games. And yet, Ian Henry and Ling-Mei Ko (2015) believe that this instrument of measuring output is very weak since it cannot provide an adequate measure of national priorities, while it also excludes many countries from comparison of this kind. Since athletes from the Republic of Srpska performing in national teams of Bosnia and Herzegovina have not achieved any notable results at the Olympic Games. Such a measure excludes the Republic of Srpska from comparisons of this kind, so the dependable variable was measured using expert evaluation of sporting results of athletes from the Republic of Srpska at the international, regional and national level.

However, Simon Shibli et al. (2013) point out that this measure of sporting success could be expanded from the number of medals won to the number of finalists, which would be a more reasonable measure of sporting success at the international level since most countries had at least one athlete that made it to the top eight at the Olympic Games. For countries with no finalists there are alternative measures that could be used, among which are the numbers of athletes who have achieved their best result of the season, their career, or country. These authors point out that these are good measures for countries without elite sporting results. In our case, there are many athletes from the Republic of Srpska who perform and win medals at great international competitions under the flags of other national teams – mostly Serbia. Having this in mind, future studies could

measure sporting success through the number of medals won by athletes from the Republic of Srpska who perform for other national teams.

Namely, Vladimir Koprivica (2013) pointed out that in modern day it is really difficult to win an Olympic medal. Although it is often pointed out that countries of the former Socialist Federative Republic of Yugoslavia are on the decline when it comes to sports, data on medals won at the Olympic Games after the civil war of the nineties indicate rapid sporting recovery of these now independent countries. But still, the dissolution of Yugoslavia had the greatest impact on Bosnia and Herzegovina, because this country, which had yielded many Olympic athletes and medal winners within Yugoslavia, still hasn't won a medal as an independent country. He states in parallel to the exploitation of economic, scientific and other resources of underdeveloped countries, the developed countries appropriate successful athletes, coaches and sports experts of other countries. This tendency is likely to continue and increase. The specificity of the sport system in Bosnia and Herzegovina, athletes, coaches and sport experts from the Republic of Srpska frequently emigrate and perform for other national teams, mostly for national teams of the Republic of Serbia.

Veerle De Bosscher et al. (2008, 2015) used the SPLISS project to try and build a model that can be used as a guiding tool for assessing the effectiveness and efficiency of policies on elite sports in certain countries. They demonstrated that there is a strong link between results obtained by assessing policies on elite sports and international sporting success. However, a problem may occur if countries only want to be compared with the most successful ones and simply transpose certain elements into their own sport system. Also, by investing in those pillars of elite sport systems that have a low level of development will not necessarily increase chances of international sporting success. There are merely good practices and elements that comprise successful sport systems, and it is up to the countries to combine these elements, primarily taking into consideration the elite sport environment, which can have a significant impact on the development of athletes and their future sporting results, primarily meaning culture, politics, sponsorships and the media (Sotiridou et al. 2014).

The contribution of the study is in assessing the level of development and the importance of key sporting success factors. Unlike Veerle De Bosscher et al. (2015), who carried out this evaluation through an internal agreement of a consortium, we used the Delfi method in the expert section, in order to enhance and improve the classical method of deriving prognoses. A five-point Likert scale was used, just like in SPLISS 1.0 (De Bosscher et al. 2008). In economics, different scales are used; however, Wolfgang Ochel and Oliver Röhn (2006) point out that there is no general consensus when it comes to scales.

Therefore, the study has improved the methodology of the existing model of measuring the competitiveness of a sport system at the international level. It also revealed sporting success factors which increase/decrease the competitive advantage of the elite sport system of the Republic of Srpska. How realistic it is for athletes from the Republic of Srpska to win Olympic medals is really difficult to answer. This is a serious question for creators of policies on elite sports and decision-makers in the Republic of Srpska, and an issue to be thoroughly considered.

Having in mind results of the factor analysis and its position regarding inputs, *Financial support for sports* should be observed as an isolated element in the elite sport system of the Republic of Srpska and further explored in future studies. In our case, the development of athletes and their sporting results are heavily influenced by the elite sport environment. Hence, it is necessary to observe some other elements, such as sport culture (which exists to a great extent in the Republic of Srpska and the region), politics, sponsorship and the media.

### **Conclusion**

We can conclude that social changes in this region had an impact on all segments of society, including sports. It is becoming clear that competition for Olympic medals is increasingly fierce, and that elite sport results cannot be achieved at just any desired time. So, it is not realistic for a large number of athletes from an environment with a small population to yield such results. Results like that cannot be achieved by chance, nor can they arise merely from favourable circumstances or just the existence of talent itself. Success will require a long-term and stable system for developing high performance sports, which must have a much higher level of support in terms of finances, human resources and science than it has been the case so far.

### **Acknowledgements**

The Ministry of Family, Youth and Sports of the Republic of Srpska issued Memo No. 20.07/660-91/15, dated 6 March 2015, to approve the use of their data for the purposes of this study.

### **References:**

- Andersen, S., Houlihan, B., Ronglan, L. (2015). *Managing elite sport system: Research and practice*. London: Rutledge
- Andersen, S. S., Ronglan L.T. (2012). Same ambitions – different tracks: A comparative perspective on Nordic elite sport. *International Journal of Sport Policy and Politics*, 5(2), 315–317.
- Assembly of the Republic of Srpska (2002). *The law of sport of the Republic of Srpska*. Official Gazette of the Republic of Srpska, 4/02. (In Serbian)

- 
- Barth, M., Emrich, E., Dumann, F. (2017). Evaluation of sporting success in Austria: An institutional economics analysis. *Journal of Contemporary Management*, 7(2), 16–30.
  - Bayle, E. (2005). Institutional changes and transformations in an organizational field: The case of the public/private 'model' of French sport. *International Journal of Public Policy*, 1(1), 185–211.
  - Bergsgard, N. A., Houlihan, B., Mangset, P., Nøddland, S. I., Rommetveldt, H. (2007). *Sport policy. A comparative analysis of stability and change*. London: Elsevier.
  - Böhlke, N., Robinson, L. (2009). Benchmarking of elite sport systems. *Management Decision*, 47(1), 67–84.
  - Brouwers, J. (2015). *The role of elite sport policies, pathways and inter-organisational relationships in developing elite tennis players*. Doctoral dissertation, Griffith University, Queensland, Australia.
  - Brouwers, J., Sotiriadou, P., De Bosscher, V. (2015). Sport-specific policies and factors that influence international success: The case of tennis. *Sport Management Review*, 18(3), 343–358.
  - De Bosscher, V. (2016). A mixed methods approach to compare elite sport policies of nations. A critical reflection on the use of composite indicators in the SPLISS study. *Sport in Society*, 21(2), 1–25.
  - De Bosscher, V. (2018). A mixed methods approach to compare elite sport policies of nations: A critical reflection on the use of composite indicators in the SPLISS study. *Sport in Society*, 21(2), 331–355.
  - De Bosscher, V., De Knop, P., Van Bottenburg, M., Shibli, S. (2006). A conceptual framework for analysing Sports Policy Factors Leading to international sporting success. *European Sport Management Quarterly*, 6, 185–215.
  - De Bosscher, V., De Knop, P., Van Bottenburg, M., Shibli, S. (2008). *Global sporting arms race*. Oxford, United Kingdom: Meyer&Meyer Sport.
  - De Bosscher, V., De Knop, P., Verthongen, J. (2016). A multidimensional approach to evaluate the policy effectiveness of elite sport schools in Flanders. *Sport in Society*, 19(10), 1596–1621.
  - De Bosscher, V., Shibli, S., Westerbeek, H., Van Bottenburg, M. (2015). *Successful elite sport policies*. United Kingdom: Meyer&Meyer Sport.
  - Digel, H. (2001). Talent detection and talent development in international comparison. *Leistungssport*, 31(4), 72–78.
  - Diegel, H., Burk, V., Fahrner, M. (2006). *High-performance sport: An international comparison*. Edition Sports International, 9, Weleheim/Teck: Brauer.
  - Dowling, M., Brown, P., Grix, J. (2018). Deconstructing comparative sport policy analysis: Assumptions, challenges, and new directions. *International Journal of Sport Policy and Politics*, 10(4), 687–704.
  - Green, M. (2007). Olympic glory or grassroots development? Sport policy priorities in Australia, Canada and the UK 1960-2006. *International Journal of the History of Sport*, 24(7), 921–953.
  - Green, M., Houlihan, B. (2005). *Elite sport development: Policy learning and political priorities*. London: Routledge.
  - Henry, I., Amara, M., Al-Tauqi, M. (2005). A typology of approaches to comparative analysis of sports policy. *Journal of Sport Management*, 19, 520–535.
  - Henry, I., Ko, L. M. (2015). Unpacking the SPLISS Case for Identifying the Critical Success Factors in Elite Sports Systems: A Critique. 2015 European Association for Sport Management Conference, Abstract ID: EASM-2015-92 - (600).
  - Houlihan, B. (2013). Commercial, political, social and cultural factors impacting on the management of high performance sport, in: Sotiriadou, P./De Bosscher, V. (eds.): *Managing high Performance Sport*. London and New York: Routledge, 17–27.
  - Houlihan, B./Green, M. (2008). *Comparative elite sport development. Systems structures and public policy*. London: Elsevier.
  - Hoye, R./Cuskelly, G. (2007). *Sport Governance*. Oxford, UK: Elsevier.
  - Hyuk, Y. (2019). *Global sporting performance of nations - A method for measuring the level of national sport's policies*. Unpublished doctoral thesis, University of Lausanne.
  - Koprivica, V. (2013). *System of preparations for Olympic games – results and perspective*, in: Simović S. (ed.): *Proceedings Book of 4th Conference Anthropological aspects of sport, physical education and recreation*, Banja Luka: Faculty of Physical Education and Sport University of Banja Luka, 1–12.
  - Mihajlović, V. M. (2013). *Sport's organizations and sport's events*. Belgrade: Sports federation of Serbia
  - Ministry of youth, family and sport of the Republic of Srpska (2012). *Strategy of the development of sport in the Republic of Srpska for 2012-2016*. Banja Luka, Bosnia and Herzegovina: Government of the Republic of Srpska. (In Serbian)
  - Oakley, B., Green, M. (2001). The production of Olympic champions: international perspectives on elite sport development system. *European Journal for Sport Management*, 8, 83–105.
  - Ochel, W., Röhn, O. (2006). Ranking of countries. The WEF, IMD, Fraser and Heritage Indices, in: CESinfo DICE Report. *Journal for institutional comparisons–Munich: Center for Economic studies and the Institute for economic research*, 4(2), 48–60.
  - Robbins, S. P., Coulter, R. J. (2017). *Management, 14th ed.* London: Pearson.



- Roche, M. (2002). The Olympics and 'Global Citizenship'. *Citizenship studies*, 6(2), 165–181.
- Shibli, S., De Bosscher, V., Van Bottenburg, M., Westerbeek, H. (2013). *Alternative Measures of Performance in the Olympic Games*. Paper presented at the 21st. European Association for Sport Management Conference, Istanbul.
- Sotiriadou, P., De Bosscher, V. (2018). Managing high-performance sport: Introduction to past, present and future considerations. *European Sport Management Quarterly*, 18, (1), 1–7.
- Sotiriadou, P., Gowthorp, L., De Bosscher, V. (2014). Elite sport culture and policy interrelationships: The case of Sprint Canoe in Australia. *Leisure Studies*, 33, (6), 598–617.
- Suzić, N. (2012). *Futurology*. Banja Luka, Bosnia and Herzegovina: EKTOS. (In Serbian)
- Torres, L., Martin, E., Guevara, J. C. (2018). The gold rush: Analysis of the performance of the Spanish Olympic federations. *Cogent Social Sciences*, 4: 1446689.
- Truyens, J., De Bosscher, V., Sotiriadou, P., Heyndels, B., Westerbeek, H. (2016). A method to evaluate countries' organisational capacity: A four country comparison in athletics. *Sport Management Review*, 19, (3), 279–292.
- Vukadinović, S. (2017). *Competitiveness of elite sport system of Republic of Srpska*. Unpublished master's thesis, University of Banja Luka. (In Serbian)
- Zelenika, R. (2011). *Methodology and technology of scientific and professional labor*. Rijeka, Croatia: Faculty of Economy, University of Rijeka. ( In Croatian)
- Willem, A., Scheerder, J. (2017). *Conclusion: The Role of Sport Policies and Governmental Support in the Capacity Building of Sport Federations*, in: Scheerder, J./Willem, A./Claes, E. (Eds): *Sport Policy Systems and Sport Federations*, London: Palgrave Macmillan, 303–320.