

The system of sports financing and management in the Republic of Croatia*

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Abstract

The aim of this paper was to explore the connection between the level of economic development on the one hand, and the level of sport development on the other. From the management point of view the goal was to research the possibilities of public spending for sport since this is considered to be the most complex problem in managing the development of sport in Croatia. The data were collected by means of questionnaires. Descriptive statistics were calculated, and correlation and regression analyses were performed. The research showed that economic development of Croatia measured through the level of GDP significantly affects the number of registered participants in sport in a positive way. However, by using confidence interval analysis it was possible to reject the hypothesis that the fundamental problem of sport development is the insufficient amount of public resources. Therefore, it can be concluded that the key role in a more qualitative system of sport management in Croatia belongs to the governing bodies and management of sport organizations.

Key words: sport, sport management, sports financing system, development of sport

JEL classification: H41, H76, L83

* Received: 07-09-2011; accepted: 29-11-2011

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1. Introduction

The beginnings of the sport development in Croatia are associated with the name of Franjo Bučar (1866-1946), who was the first to work out the curricula for gymnastics classes in Croatian schools (see Radan, 1977). However, the oldest organized sport in Croatia is shooting and dates back to the year 1784³. Soon after this year associations in sports such as rowing (Osijek, 1870), skating and hiking (Zagreb, 1874), horseback riding, hunting, fishing, cycling (1885), etc. began to develop. The first *Croatian Sports Association* (CSA), as the organization in charge of sport development, was established in Zagreb in 1909 (Jajčević, 2010:276). Its basic goal was to bring together all sport associations under one roof and to manage their activities. Also, the biggest problem Croatian sport organizations and athletes were facing was the lack of international recognition and possibilities to participate in international competitions. Associations' task was to try to change this situation. However, Croatian athletes had to wait for some time until they were allowed to compete under the Croatian national flag. The first *Sports Act* in the Republic of Croatia was passed in the year 1990 (Official Gazette No. 59/1990). This was the year when the *Croatian Association for Physical Culture* ceased to exist and the *Croatian Sports Association* was founded. The Association was meant to "ensure organizational, professional and financial conditions for the participation of Croatian athletes in national and international competitions, maintain the obtained reputation of Croatian sport as well as obtain rights to be included in the international sports family under the Croatian flag" (Lugović and associates, 2006:47). The Croatian athletes finally got a chance to compete under the Croatian national flag. Sports activities have been proclaimed to be activities of 'special national interest' so that funds were provided for specific needs in the field of sports either from the Croatian national budget or from the municipal or county budgets.

This status of sport affects its development as well as its governance. There are several specific characteristics of sport which have to be taken into account. Above all there is the fact that many different parts of society are somehow engaged in sport activities, i.e. sport performs through three different but very connected sectors (Hoye and associates, 2006:7):

1. State or public sector;
2. Non-profit or voluntary sector;
3. Sector of professional or commercial organizations.

State or public sector includes state, regional and local government, agencies for the development of sport, and institutions that control sport and sport organizations.

³ More on the historical development of sport on the territory of the Republic of Croatia in the Old and Middle Ages can be found in Jajčević (2010:255-259).

Non-profit or voluntary sector encompasses amateur clubs, associations and various governing bodies that organize sporting events. *Professional sector* refers to professional or commercial sport organizations, professional leagues and their members, media, companies that manage sport events, etc. These three sectors do not act in an isolated manner, so that in many cases their activities overlap. For example, state sector is included in the founding of non-profit sport organizations because of their significance for the development of sport at national level. As a result, non-profit sport organizations ensure possibilities for the development of athletes, coaches, and other personnel working in the domain of sport so that all sport activities can be realized. State is included in commercial sector as well through investments in sport facilities and equipment. Also, the state establishes legal and regulatory framework for activities in professional sports, it supports sporting equipment producers and organizers of sport events. The non-profit sector boosts professional sports through selection and development of sport talents that compete in amateur leagues. The same could be said for coaches and other professional experts in sport as well.

Furthermore, sport activities in Croatia, similarly as in other European countries, encompass several different segments. These are: physical education, competitive sports, physical recreation, kinesitherapy and sport for disabled people (Bartoluci and Škorić, 2009:16-19). However, one has to differentiate between the so called professional and amateur sport. Professional sport refers to sport activities in which participants such as athletes, coaches, managers, etc. are professionally connected to their clubs, associations or some other sport organization. In other words, participants realize their working, social, health and retirement rights based on a contract that also regulates payment for their work. Sports Act states that professional status is held by such a sports club that has signed professional contracts with more than 50% of registered athletes in senior competition in relation to the number of registered athletes for that competitive year. Therefore, amateur sport does not refer to amateurism in the sense of the quality of sport. It differs from professional sport in respect to the status and the rights realized through contracts by individuals involved in these activities (see Bartoluci and Škorić, 2009:22). It is quite clear then that amateurs can appear in competitive or top-level sport as well as in physical recreation.

According to the last available data, there are 4,165 sport associations in Croatia. Besides sports associations (sport clubs), this number also includes Croatian University Sports Federation (3 associations), Croatian Sports and Recreation Federation (68 associations) and Croatian School Sports Federation (4 associations) (DZS, 2010). According to the Sports Act, sports associations, i.e. clubs can act as non-profit organizations or sport joint stock companies (SJSC). However, only one club has been renamed to SJSC. The official statistics does not offer data concerning the number of professional athletes. At the same time it states that there are only

11% professionals⁴ in sport associations, i.e. 1,343 of them, while the rest execute their tasks as volunteers.

Having in mind the complex nature of sport and the width of the functions it performs in a society, it is quite clear that a problem of sport financing “is present in all countries regardless of their development level (measured by their gross national income *per capita* or by some other indicators)” (Bartoluci and Škorić, 2009:31), and it requires the involvement of the entire community⁵. This is mostly evident in the fact that sport, or at least some segments of sport, can be considered as public goods due to their goals and social functions⁶. Investments in public goods cannot be entirely left to private initiatives since there exists a real danger that their production would be below a socially optimal level. Therefore, a public sector intervention in order to ensure the access to these kinds of services for everyone is needed. In other words, although a primary goal of sports organizations throughout the world is to ensure that everyone has the opportunity to take part in sport and physical recreation (Council of Europe, 1992), equal opportunities and access to sporting activities for everyone can be ensured only by public sector support (Europa, 2010). Therefore, it is quite logical that public sources appear as an integral part of the sport financing system.

According to the last available data, the average structure of sport finance in 2005 in the countries of European Union (EU) was as follows⁷ (Amnyos, 2008):

- The main source of sport finance is household spending, which represents, on average, 49.7% of total spending (€ 177 per inhabitant).
- Local authorities constitute the second-largest source of finance with an average of about 24.3% of total spending.
- State contributions account for about 11.9% of total spending.
- Company contributions make up the least well-known source of financing, and account for an estimated 14.1% of the total.

The main flows of sport finance in EU 27 (see Figure 1) show that the needs of amateur sports (grassroots sports associations) are mostly financed by public funds.

⁴ Persons conducting expert work in sport associations, such as instructors, coaches, recreation organizers, etc.

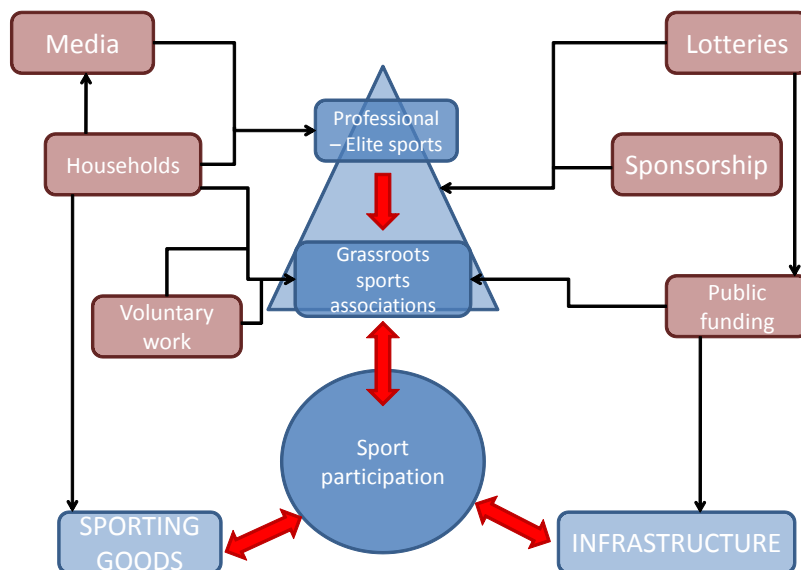
⁵ More on the functions of sport see in European Commission (2007:7-8).

⁶ Public goods are goods and services “whose advantages cannot be exhausted for any additional consumer and are accessible to everyone, regardless of costs.” (Andrijašević, 1999:16) Public needs in sport are defined by the Sports Act (Official Gazette No. 71/06) at the state and local level (local and regional self-governing units and the City of Zagreb).

⁷ This structure does not differ much in regards to the year 1990, the last time this comprehensive research on sources of sport financing in European countries was conducted (see Andreff, 2006; Andreff, 2009).

These funds are generally used to finance the development of infrastructure (stadiums, sport halls, etc.), while other needs are financed through voluntary work and household spending. Professional sport generates its funds from various private sources such as sponsors, media, but also household spending, i.e. buying tickets, paying membership fees, etc.

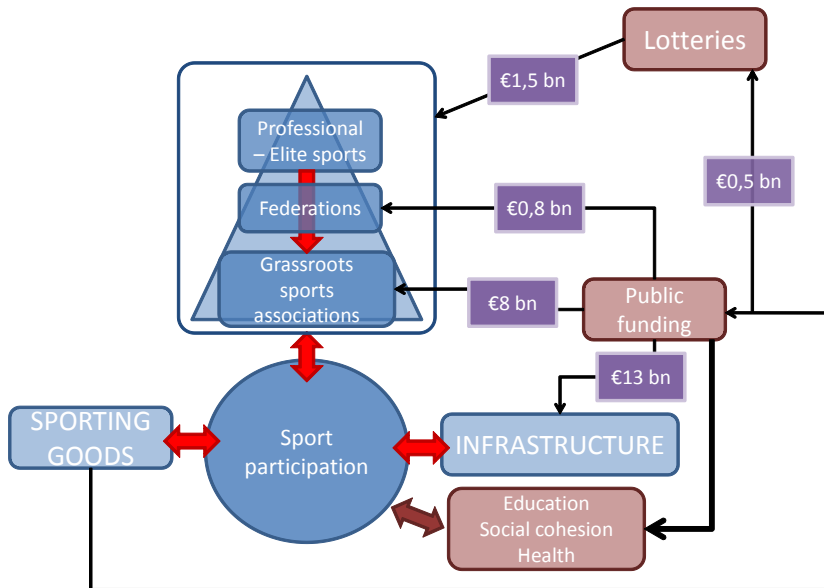
Figure 1: Main funding flows in sport in EU 27 countries



Source: Montel, J. and Waelbroeck-Rocha, E. (2010) *The different funding models for grassroots sports in the EU* // <http://ec.europa.eu/internal-market/services/do>

It is estimated that *total public funding* (state and local authorities) amounts to € 30 billion per year. € 13 billion of those funds are used for infrastructure development, and about € 8 billion for sport associations and clubs (see Figure 2).

Figure 2: Public funding for sport in EU 27 countries in the year 2005 in billions of euros



Source: Montel, J. and Waelbroeck-Rocha, E. (2010) *The different funding models for grassroots sports in the EU* // <http://ec.europa.eu/internal-market/services/do>

On the other hand, *private funding* which is comprised of household spending and company contributions, spends money on the following categories and in the following amounts (Montel and Waelbroeck-Rocha, 2010):

1. *Household funding* (yearly estimation) € 90 – 110 billion:

- Sports clothes, footwear and equipment 40% (estimation).
- Services (participation/membership) 8 – 12% (including fitness clubs).
- Other goods and services 50 % media (TV, newspapers), tickets, etc.
- Direct financing of sport for all € 3 – 5 billion.

2. *Company contributions*:

- Sponsorships: € 8 – 10 billion
- Media: € 4 to 5 billion (including broadcasting rights for international competitions)
- Sport for all financing: € 1 – 1.5 billion (estimated 10 % from sponsorship programmes and 5 % from media rights).

The system of financing sport in Croatia is also based on the so called mixed model of financing, so that it does not differ from the one in Europe. It is regulated by the Sports Act (NN 71/06, Art. 74) which states that:

- ”The basis of sport financing is the revenue which the legal and natural persons that perform sporting activities obtain by performing sporting activities, the memberships obtained by sports associations, a part of the revenue from organizing games of luck, and the funds given by local and regional self-governing units, the City of Zagreb and the State to help the realization of sporting activities.
- The Republic of Croatia, the local and regional self-governing units and the City of Zagreb shall determine the public needs in sports and provide the funds for their achievement from their own budgets in accordance with this Act.”

Based on the main topic and problems identified in this research and having in mind current scientific knowledge about sport financing and management, the aim of this paper was to research into the connection between the level of economic development and the level of sport development. When creating and conducting the research, the authors were led by the following guidelines:

1. First, the basic limiting factor was the availability of data which will be further explained in the part of the text about methodology.
2. According to Stipetić and Bartoluci (1999:216), the development of sport and recreation is a function of two variables:
 - a) Economists always emphasize the meaning of the level of income achieved by individuals or national economy of the country in question. The hypothesis is that expenditure for sport and recreation (both in absolute and relative terms) is higher if the level of individual and national income is higher.
 - b) Educators and sportspeople emphasize that the level of sport spending is greatly determined by sport habits of inhabitants in a country, community or family. They are gained through long-term education in which the awareness of sport as an important factor in the saying ”mens sana in corpore sano” is being thought.

The authors of this paper deal primarily with the first statement and variable.

3. Although the starting idea when creating this research was to include all sources of sport financing, due to unavailability of data this was not possible⁸. Therefore, only public funding was considered and the following logic was used: Croatia is not a developed country, and research has shown that countries that are not developed "need large-scale public-sector intervention if the conditions for the growth of sporting practice – e.g. infrastructure, high-level access paths and voluntary input – are to be developed. This is notably true as regards recent EU Member States, where per capita GDP is relatively low" (Amnyos, 2008). Public sector intervention here refers primarily to intervention in funding (see Nys, 2006).

Two basic hypotheses were developed:

H1: There is a significant positive correlation between the level of development of sport and the level of economic development in Croatia.

H2: The most important problem in managing sport in Croatia is the abundance of public funding, i.e. more than 50% of national sport federations find insufficient amount of public funding to be the most important management problem.

The paper consists of five chapters, including the introductory chapter. The second part of the paper will present the review of the most important literature concerned with the level both of economic and of sport development, and sport financing. Since the basic limitation of this research was the unavailability of necessary data, the paper will consider only public funding. Therefore, the review will pay attention particularly to research that has taken into account the variable *public funding for sport*. After the literature review, the methodology of the research will be explained, and then, in the fourth chapter the results will be analysed and discussed. Finally, the last chapter will give final remarks concerning the hypotheses set at the beginning and some proposals for possible changes in the system of sport management will be given. Also, some topics for future research will be presented.

2. Literature review

Literature on the topic of sport financing is, to say the least, scarce. The majority of scholars research into the connection between the sporting success of a country measured by the number of medals won at international competitions (mostly

⁸ There are no continued or special research regarding household expenditure for sport. The last, and according to the authors' knowledge the only research of this kind, was conducted in the year 1998 in the towns of Zagreb, Rijeka and Osijek. According to the results in this research, the households spent on average about 3,359 kunas per year for sport, i.e. 5.2% of their total income. The majority was spend for clothes (34.4%), footwear (27.1%), membership fees (12.9%), tickets to sport events (10.5%), equipment (9.1%), and lottery (5.9%) (see Sever, 1999).

Olympic Games) and numerous economic, but also sociological and political variables (see Jokl and associates, 1956; Bale, 2000; Bernard and Busse, 2000, 2004; Johnson and Ali, 2000, 2004; Matros and Namoro, 2004; Moosa and Smith, 2004; Kuper and Sterken, 2005; Roberts, 2006; Groot, 2007; Rathke and Woitek, 2007; Lui and Suen, 2008). The most commonly used variables are GDP, GDP per capita, hosting the competition, is it a neighbouring country or not, political system of a country, population, climate, expenditure for health services, etc. (see more in Čustonja and Škorić, 2011). All the results are based on econometric testing, mostly regression analysis, and find that GDP or GDP per capita and population are significant determinants of Olympic performances (Andreff, 2008:5). Although none of the previously mentioned research has taken into account the variable *expenditure for sport*, some of them refer to it indirectly through the level of GDP. For example, Matros and Namoro state in their research that they use the variable GDP to capture sport budgets in a certain country (2004:12). Other researchers assume that the countries with higher standard measured by GDP or GDP per capita, can have greater expenses for top-level sport (Kuper and Sterken, 2005; Roberts, 2006:2; Rathke and Woitek, 2007:1). One of the main reasons for this is the lack of data. Namely, according to Bernard and Busse (2000:4) "we would ideally like to have a range of indicators including population, income per capita, income inequality and government spending. However, the difficulty of obtaining such measure for more than 150 countries over 30 years precludes us from considering anything but GDP and population."

There are quite a few papers on the topic concerned with the level of individual sport participation, i.e. research whose aim is to determine the reasons for sport participation⁹. Also, numerous governments of certain countries requested these kinds of studies mostly for the purpose of developing guidelines to increase the level of sport participation, but also to better direct resources into sport (for example see Sport England, 2004; Bloom and associates, 2005; Downward, 2007; Lera-López and Rapún-Gárate, 2007; European Commission, 2010; Humphreys and associates, 2010; Matrix Knowledge Group, 2010; Sport England, 2010; SGMA, 2011). The majority of the previously mentioned papers and studies consider the variables such as age, sex, education level, income, status, occupation, the number of household members, the number of children, as well as the variables connected with the health status, etc. Income (of individuals or households) has proven to be almost always positively correlated with sport participation, although "this pattern slightly changes if we move from overall participation to specific activities."

⁹ Although it is not the main topic of this paper, it is necessary to point to the fact that there is a difference between the terms *sport* and *physical recreation*, i.e. doing sports and participating in physical recreation (for more details see Andrijašević, 2010:30-32). In the mentioned papers that deal with the topic of participating in sport activities they imply participating in sports and recreational activities although the term *Participation in Sport* is being used. Therefore, this paper will also use the term participation in sport, however participation in top-level sport is not included unless it is specifically mentioned.

(Humphreys and associates, 2010:3) The results of all the mentioned researches are based on some type of econometric regression analysis (usually probit or logit), as well as on the calculation of various correlation coefficients.

Two papers which use not only the most commonly used (microeconomic) variables but also some macroeconomic variables such as GDP or GDP per capita and public funding for sport will be discussed in more detail.

The first is the paper written by Humphreys and associates (2010). It differs from all other research in a way that their study encompasses the sample of 34 countries (including Croatia), and not only one country as is usually the case. Besides that, they added to their research some macroeconomic variables like Olympic medal success, hosting mega-sporting events, measures of national sport policy priorities, GDP per capita and variables capturing other economic, political and social characteristics (democracy index, political rights index, civil liberties index, female labour force participation, women in parliament, etc.). Although the idea was to include the variable *sport financing* in each country, this was not possible since "data are not available for several countries. In addition, there is not a lot of variation in sport financing as a percent of GDP for those countries which make this information publicly available" (Humphreys and associates, 2010:11). Starting expectations on positive relationship between sport participation and GDP per capita were confirmed since it was shown that participation rates rise with income, education and GDP per capita (Humphreys and associates, 2010:12).

The second research was conducted for the organization called Sport England¹⁰. The topic of the research was concerned with understanding the variations in sports participation between local authorities of Great Britain. The variables *Sport England Lottery Grants*, *Big Lottery Fund Grants* and *Local Authority Spend Levels*¹¹ were included in the research (Sport England, 2010:11-13). For the variable *Sport England Lottery Grants* it was confirmed that it positively affects the level of individual sports participation, but the same was not confirmed for the variable *Local Authority Spend Levels*.

Further on, there is a great number of papers concerned with economic effects of sport in general¹² as well as economic effects of mega sporting events (see

¹⁰ The organization in Great Britain that "invests National Lottery and Exchequer funding in organisations and projects that will grow and sustain participation in grassroots sport." It is accountable to the Parliament through the Department for Culture, Media and Sport (Sport England, 2011).

¹¹ Included are: spending on sports development and community recreation, spending on sports and recreation facilities including golf courses, and spending on arts development and support (Sport England, 2010:13).

¹² Through indicators such as: estimation of household expenditure for sport, public sport funding, share of sport expenditure in GDP, production and trade of sport products, employment, investments in sport infrastructure, etc.

Jeanrenaud, 1999; Nana and associates, 2002; Preuss, 2004; Rütter and associates, 2004; Chappelet, 2005; Andreff, M. and Andreff, W., 2007; Andreff, 2008a; Swinnen and Vandemoortele, 2008; Bell, 2009; NPD, 2010; Sport England, 2010a). Although it is quite clear that sport generates various economic effects which makes it an important factor in economic development (see Bartolucci and Škorić, 2009; European Council, 2007), the biggest problem for this type of research is, again, the lack of adequate statistical data. This problem was also identified by the European Commission in their document *White Paper on Sport* (European Commission, 2007). At the same time, the term *sport* is not clearly defined in economic sense, i.e. it is not obvious which activities does sport encompass so that economists cannot estimate its economic effects. Despite everything previously mentioned it can be said that economic, but also social, cultural and other effects of sport¹³, are used by governments as justification for future investments in this area (Government of Canada, 2008).

It was already mentioned that literature on sport financing is quite scarce, especially the literature concerning the connection between the level of sport development and expenditure for sport. It is possible to mention only two papers regarding this matter. One researches into the participation in physical activity and government spending on parks and recreation (Humphreys and Ruseski, 2007), while the other is a part of a much wider research on the topic of sport financing in the countries of European Union (Andreff, 2009).

Humphreys and Ruseski investigate the impact¹⁴ of government spending on parks and recreation on individual's decision to participate in various physical activities and sports, since state and local government spending on parks and recreation is one possible policy variable that decision-makers could use to increase physical activity level in many populations. The research was conducted with regard to different activities, and showed that spending on parks and recreation only affects participation in outdoor recreational activities¹⁵. Furthermore, the parameter estimates on the state parks and recreation spending variable in the time equation are small and significant for outdoor recreation and individual sport. Humphreys and Ruseski state that the measure of state spending on parks and recreation "may be too broad to truly capture the impact of spending on the state population's decisions about physical activity because it cannot account for variations in regional and local spending on parks and recreation." (Humphreys and Ruseski, 2007:548-549)

¹³ In every area of sport, but also effects of sport events, building of sport facilities, etc., despite many problems (Késenne, 1999; see Viseu, 2000; Swinnen and Vandemoortele, 2008) and open questions concerned especially with the wrongful assessment of economic effects of sport and particularly economic effects of sport events.

¹⁴ By using Heckman procedure models in order to account for selectivity.

¹⁵ Note that activity "walking" is not included in this group but forms a different group of activities. Activity groups are: outdoor recreation, household activity, group sports, individual sports, walking.

The second study was conducted in the year 2008 within the framework of preparations for work during the French Presidency of the Council of the European Union. Amnyos group was in charge of the research, and the topic was public and private financing of sport in Europe (Amnyos, 2008)¹⁶. This research did not avoid the problems concerning data availability. All 27 countries of the European Union participated in this study, but only 13 of them were able to provide data on all sources of funding (households, companies, state and local funding)¹⁷. According to the available indicators, the share of public financing stands between 9 (Great Britain) and 78% (Bulgaria) of overall sports finance, and more or less, diminishes when the level of GDP per capita increases (Andreff, 2009:6). The results show that data on registered participation in sport in EU countries is significantly correlated with the level of economic development¹⁸. Also, a more indirect correlation can be made between sport participation and the structure of sport financing since GDP determines the extent to which households, companies and the public authorities are able to finance sport (Amnyos, 2008). The research clearly states that total amount of sport financing (public and private) as a percentage of GDP is strongly positively correlated with GDP per capita, i.e. the higher the GDP per capita, the greater the amount of sport financing (Amnyos, 2008). This is primarily due to private spending in sport, i.e. household contributions, since the research did not show significant correlation between the ratio of governmental sport expenditure to overall government budget and GDP per capita. It could be concluded that government financial involvement into sports is probably more related to the government sporting and economic policy rather than to the level of economic development (Andreff, 2009:9). Also, there is no significant correlation between the share of local authorities in overall public expenditure for sport and GDP per capita (see Andreff, 2009:12). However, the correlation between sport financing and the level of sport development, i.e. the number of registered participants in sport, was not examined.

3. Methodology

In order to test the first hypothesis, secondary data on sport development (the number of registered participants) and the level of economic development in the Republic of Croatia (real GDP, real GDP per capita and public spending for sport) was gathered. As was previously mentioned, the limiting determinant in this

¹⁶ Only a summary of the research was at our disposal, but other authors used this data to write papers, and they will be referred to later in the text.

¹⁷ The questionnaire was distributed to 29 ministries in charge of sport since 3 communities coexist in Belgium.

¹⁸ Simple regression analysis of sport participation and GDP per capita (PR = 0.0006 GDP per capita + 2.869), and Spearman correlation coefficient (r = 0.77).

research was the availability of data, so let us briefly explain the variables used in the research and the manner in which the data was collected.

As a variable that points to development of sport the number of registered *participants in sport* was used¹⁹. The data was collected from the Statistical Yearbooks of the Republic of Croatia in all observed years. However, a problem of statistical data collecting in Croatia has to be emphasized. Statistical data concerning sport is collected only every 3 years through official standardized forms called ŠPORT-1 (sports associations), ŠPORT-2 (chess associations and bridge clubs), ŠPORT-3 (hunting associations) and ŠPORT-4 (sports and recreation centres). So, every three years the official statistics publishes data on sport, chess, hunting and bridge associations which include the number of associations, the number of active members, people employed in sport, participation in international competitions, persons in charge, sports and recreation centres as well as sports facilities (see DZS, 2010). Therefore, the data on the number of registered participants will be the same through the period of every three years, which can represent a limitation for the research.

Furthermore, the data on the local and state budget was taken from the official web site of the Ministry of Finance, but the data concerning the local budgets was available only beginning with the year 1995, and for the state budget beginning with the year 1998. This means that it was not possible to conduct the analysis in any year prior to the year 1998.

The data on GDP in constant prices from the year 2000 was taken from the official web site of the International Monetary Fund (IMF, 2011).

All data used in the research are presented in Table 1.

¹⁹ Although sport is a complex social activity that encompasses several areas which was mentioned previously in the text, there are no official data on the number of participants in sport and sports recreational activities in all areas of sport. Therefore, like in the research at the level of EU (Andreff, 2009), this paper considered only data on registered sports participation, i.e. so called active members in sports associations.

Table 1: Variables used in the research

Years	Number of registered participants (Y_i)	GDP ₂₀₀₀ in millions of kunas (BDP_i)	GDP per capita ₂₀₀₀ ^{a)} (GDP p/c _i)	Public spending on sport		
				In millions of kunas	In millions of kunas ₂₀₀₀ (PS_i)	% of real GDP (% PS_i)
1998	219,536	171,722	35,893	486.9	607.6	0.35
1999	219,536	170,245	35,584	709.2	852.8	0.50
2000	248,534	176,689	36,931	508.5	508.5	0.29
2001	248,534	183,466	41,344	494.5 ^{b)}	475.5	0.26
2002	248,534	193,449	43,594	514.8	478.3	0.25
2003	263,277	203,041	45,756	635.6	568.5	0.28
2004	263,277	211,669	47,700	763.4	658.1	0.31
2005	263,277	220,577	49,708	935.9	780.9	0.35
2006	277,165	23,103	52,064	1077.1	869.0	0.38
2007	277,165	24,367	54,912	1157.2	897.4	0.37
2008	277,165	249,422	56,208	1422.5	1036.9	0.42
2009	284,365	234,926	52,941	1518.9	1071.3	0.46
2010	284,365	231,701	52,214	1356.5	943.2	0.41

a) By the year 2000, GDP per capita was calculated based on the data from 1991 census of population (4784265), and for the other years calculations were based on the data from 2001 census (4437460).

b) Note: for the year 2001 official data does not give the structure of the budget by activities. Therefore, data for this year was taken from the Official Gazette from the document: *Changes and amendments of the state budget of the Republic of Croatia for the year 2001*. Also, the data on the local budgets for the year 2001 refers only to planned and not realized amounts.

Source: Statistical Yearbooks of the Republic of Croatia since 1998 till 2010; official data of the Ministry of Finance concerning state and local budgets; Official Gazette No. 59/2001

Correlation between all variables was calculated and regression analysis was done. The assumption was that there exists a significant correlation between the number of registered participants in sport and GDP, GDP per capita, the amount of public spending for sport, and the share of public spending for sport in GDP.

The initial regression model was as follows:

$$Y_i = \beta_0 + \beta_1 GDP_i + \beta_2 GDP\ p/c_i + \beta_3 PS_i + \beta_4 \%PS_i + \varepsilon$$

For the testing of the second hypothesis a primary research using questionnaire was conducted. The questionnaire was sent to national sport federations as organizations in charge of the development of various sports. Research was conducted as a part of a larger research concerned with the topic of strategic management, and the question of sport management problems was only one of the topics explored. At the moment when the research started, the Croatian Olympic Committee consisted of 80 sport federations (38 Olympic sports, 32 non-Olympic sports and 10 federations

with a status of temporary or associated members). The population therefore consisted of 80 sport federations, but in total 76 questionnaires were distributed in February of 2011, since 4 federations could not be reached.

4. Analysis and discussion (results of the research)

The first step included the calculation of correlation coefficients for the variable *the number of registered participants* and the variables *GDP* (real gross domestic product), *GDP p/c* (real gross domestic product per capita), *PS* (public spending for sport in constant prices, base year 2000), *%PS* (the share of public spending for sport in constant prices in real gross domestic product). Correlation coefficients pointed to a high positive correlation between the variable *number of registered participants* and *GDP*, *PS*, *GDP p/c*, while no statistically significant correlation was found for the variables *registered participants* and *%PS* (see Table 2).

Table 2: Correlation matrix

Variable	Correlations Marked correlations are significant at $p < .05000$ N=13 (Casewise deletion of missing data)			
	Real GDP (2000)	GDP per capita	PS (2000)	%PS (2000) in real GDP
Registered participants	0.92	0.93	0.57	0.11

Source: Authors

The correlation was confirmed by constructing the scatter plots which point to the linear form of correlation between the variables, except in the case of the variable *%PS*. Therefore, the variable *%PS* was removed from the initial regression model.

The results of the regression analysis with the remaining three variables show that none of the variables was significant for the model (see table 3).

Table 3: Initial regression model with three variables

N=13	Regression Summary for Dependent Variable: Registered participants R= ,93591205 R2= ,87593136 Adjusted R2= ,83457514 F(3,9)=21,180 p<,00020 Std.Error of estimate: 8918,9					
	b*	Std.Err. of b*	b	Std.Err. of b	t(9)	p-value
Intercept			117362.0	42734.23	2.746322	0.022612
Real GDP (2000)	0.364066	1.479551	0.0	0.00	0.246065	0.811152
GDP per capita	0.695180	1.362109	2.1	4.09	0.510370	0.622073
PS (2000)	-0.183114	0.235080	-0.0	0.00	-0.778940	0.456007

Source: Authors

However, the variable *PS* showed a negative correlation which was not expected and this pointed to the conclusion that a problem of multicollinearity is present in the model. This was tested and proved since the variable *PS* can be explained by the variables connected with GDP. Finally, the analysis could include only one variable, i.e. GDP or GDP p/c. However, these two variables experience significant levels of correlations, so the model can be based only on one or the other variable. Since the variable *GDP p/c* yielded somewhat better results, the statistical model of the regression analysis that considers only the variable *GDP p/c* was better. This is the situation even if we compare it with the model of multiple regression presented previously (see Tables 3 and 4).

Table 4: Regression model with only one variable (GDP p/c)

N=13	Regression Summary for Dependent Variable: Registered participants R= ,92989841 R2= ,86471105 Adjusted R2= ,85241205 F(1,11)=70,307 p<,00000 Std.Error of estimate: 8424,4					
	b*	Std.Err. of b*	b	Std.Err. of b	t(11)	p-value
Intercept			129746.9	15661.08	8.284672	0.000005
GDP per capita	0.929898	0.110901	2.8	0.33	8.384954	0.000004

Source: Authors

The model has therefore confirmed the initial hypothesis that the development of sport depends on the level of economic development in a country. However, it was not possible to explain the variable *development of sport* with the variable *public spending for sport*.

32 federations answered the questionnaire concerned with second hypothesis of this paper (42.1% return rate). When asked to identify the most important management problem in their federations, the following answers were given (see Table 5).

Table 5: Management problems in the federations

Availability of public finance	56.25%
Direction in which sport run by this federation should go to is not clearly defined	18.75%
The decision-makers are not competent enough	12.5%
Workers are not interested and motivated	3.13%
Other	9.37%

Source: Authors

Although the share of those who said that the biggest problem was the availability (or the lack) of the public finance was greater than 50%, confidence interval

analysis confirmed that we can be 95% confident that the share of federations claiming just that will be at least 39%, and not 50%. In other words, at the 5% reliability level, a hypothesis that at least 50% of federations find that the biggest management problem in their federation is the availability of public funding, can be rejected.

5. Conclusions

Based on the previously presented results of the research, it is possible to conclude that the first hypothesis could not be rejected, but the second one could. The research showed that the *level of sport development (measured by the number of registered participants) depends on the level of economic development*. However, by using regression analysis it was not possible to prove that the development of sport depends on the level of public spending for sport (either as a total amount or relative share in GDP). There could be several reasons explaining this conclusion, but we believe that the most important one could be found in the following statement. The task of a public sector is to increase participation in sport in general, i.e. not only *registered* participation but *participation in all other sport and physical recreation activities* (including not registered ones). Therefore, a limitation in the form of lack of a more clearly methodologically developed statistical data on sport management appeared. Considering everything previously mentioned, one should think about future research on this topic in Croatia, and the need to use a somewhat different methodology. Since the mentioned problems were not the topic of this paper, the authors believe to have devised the guidelines for their future work. In addition, we find that different results might appear if the spending for sport by local authorities was connected with the level of sport development in those (local) areas. In this way the spending would be chained to concrete actions of the local community which might affect sport participation level in that area. Similar conclusions can be given for the second hypothesis as well. Since the amount of public spending in sport is determined mostly by state and local policies, these government levels should consider the opinions of subjects in sport before distributing funds. Moreover, material support to sport by the public sector does not have to be expressed solely in the increase of direct funds coming from budgets. Some other measures are possible, and some of them might be: to increase funds from the lottery; to increase tax benefits for those investing in sport; to decrease VAT on sport equipment; etc. However, the next step should be the development of a more qualitative management system in sport which would involve all interested parties: public sector, non-profit and professional sport clubs. Quality management must ensure that governing bodies and sport clubs' management try to accomplish the results appropriate for all its members, but also the efficient control over the resources used to achieve those results regardless of the sources they come from.

References

- Amnyos (2008) *Study of public and private financing of sport in Europe: Summary of conclusions and proposals* // http://www.amnyos.com/documents/amnyos_sport_synthese_ENG.pdf (retrieved: 20-8-2011).
- Andreff, W. (2006) "Sport and financing", In: Andreff, W. i Szymanski, S. (eds.), *Handbook on the Economics of Sport* (pp. 271-281), Cheltenham, UK and Northampton, MA, USA, Edward Elgar.
- Andreff, M. and Andreff, W. (2007) *International Specialization of Major Trading Countries in Global Trade of Sports Goods* // http://www.holycross.edu/departments/economics/RePEc/spe/Andreff_GlobalTrade.pdf (retrieved: 20-8-2011).
- Andreff, W. (2008) *Sport in developing countries* // http://assets.sportanddev.org/downloads/79_sport_in_developing_countries.pdf (retrieved: 20-8-2011).
- Andreff, W. (2008a) *International trade in sporting goods* // http://assets.sportanddev.org/downloads/78_international_trade_in_sporting_goods.pdf (retrieved: 20-08-2011).
- Andreff, W. (2009) "Sport financing in times of global recession", *Play the Game 2009 International Conference, Coventry, June 8-12, 2009* // http://www.playthegame.org/uploads/media/Wladimir_Andreff_-_Financing_of_sport_in_times_of_crisis_01.pdf (retrieved: 20-8-2011).
- Andrijašević, S. (1999) "Sport kao javno dobro", In: M. Bartoluci (ed.), *Proceedings book of 2nd international scientific conference Kinesiology for the 21st century "Ekonomski aspekti sporta i turizma"*, Dubrovnik, 22-26 September 1999.
- Andrijašević, M. (2010) *Kineziološka rekreacija*, Zagreb: Kineziološki fakultet.
- Bale, J. (2000) "Geography and the Olympics: An evaluation of the work of Ernst Jokl", *Journal of Science and Medicine in Sport*, 3(3), pp. 223-229.
- Bartoluci, M. i Škorić, S. (2009) *Menadžment u sportu*, Zagreb: Odjel za izobrazbu trenera Društvenog veleučilišta and Kineziološki fakultet.
- Bell, B. (2009) *Chapter 5: Show me the money! – Sport and Business in the UK* (uncorrected sample chapter), Exter: Learning Matters. // <http://www.learningmatters.co.uk/sampleChapters/pdf/9781844451869-5.pdf> (retrieved: 20-8-2011).
- Bernard, A. and Busse, M. R. (2000) *Who Wins the Olympic Games: Economic Development and Medal Totals*, Yale School of Management Working Paper No. ES-03; Amos Tuck School of Business Working Paper No. 00-02 // <http://ssrn.com/abstract=246937> or 10.2139/ssrn.246937 (retrieved: 18-2-2005).
- Bernard, A. and Busse, M. R. (2004) *Who Wins the Olympic Games: Economic Resources and Medal Totals*, *Review of Economics and Statistics*, 86, pp. 413-417.
- Bloom, M., Grant, M. and Watt, D. (2005) *Strengthening Canada: The Socio-economic Benefits of Sport Participation in Canada*, Ottawa: The

- Conference Board of Canada // <http://vancouver.ca/parks/activecommunity/pdf/SportsParticipation.pdf> (retrieved: 20-8-2011).
- Chappelet, J.L. (2005) *Sport and economic development* // http://assets.sportanddev.org/downloads/sport_economic_development_in_english.pdf (retrieved: 20-8-2011).
- Council of Europe (1992) *Recommendation No. R (92) 13 REV of the Committee of Ministers to member states on the revised European sports charter* // [https://wcd.coe.int/ViewDoc.jsp?Ref=Rec\(92\)13&Sector=secCM&Language=lanEnglish&Ver=rev&BackColorInternet=9999CC&BackColorIntranet=FFBB55&BackColorLogged=FFAC75](https://wcd.coe.int/ViewDoc.jsp?Ref=Rec(92)13&Sector=secCM&Language=lanEnglish&Ver=rev&BackColorInternet=9999CC&BackColorIntranet=FFBB55&BackColorLogged=FFAC75) (retrieved: 29-3-2006).
- Čustonja, Z. and Škorić, S. (2011) “Winning medals at the Olympic games – does Croatia have any chance?”, *Kinesiology*, 43(2011), pp. 153-163.
- Downward, P. (2007) “Exploring the Economic Choice to Participate in Sport: Results from the 2002 General Household Survey”, *International Review of Applied Economics*, 21(5), pp. 633-653.
- DZS (Državni zavod za statistiku) (2010) *Priopćenje: Sport u 2009.* // <http://www.dzs.hr/> (retrieved: 15-12-2010).
- Europa (2010) *Public sector support* // http://ec.europa.eu/sport/what-we-do/doc41_en.htm (retrieved: 2-2-2010).
- European Commission (2007) *White paper on sport & Commission staff working document “Background and context”* // http://ec.europa.eu/sport/whitepaper/dts935_eu.pdf (retrieved: 25-8-2007).
- European Commission (2010) *Special Eurobarometer: Sport and Physical Activity. Brussels: TNS Opinion & Social* // http://ec.europa.eu/public_opinion/archives/ebs/ebs_334_en.pdf (retrieved: 14-5-2010).
- Government of Canada (2008) *Sport Participation Strategy 2008-2012* // <http://www.pch.gc.ca/pgm/sc/pubs/part/index-eng.cfm> (retrieved: 20-8-2011).
- Groot, L. (2007) *Welfare Optimal Distribution of Olympic Success Considered as a Public Good* // <http://ssrn.com/abstract=991801> (retrieved: 1-3-2007).
- Hoye, R., Smith, A., Westerbeek, H., Stewart, B., Nicholson, M., (2006) *Sport management principles and applications*, Elsevier Ltd. Burlington.
- Humphreys, B.R. and Ruseski, J.E. (2007) “Participation in Physical Activity and Government Spending on Parks and Recreation”, *Contemporary Economic Policy*, 25(4), pp. 538-552.
- Humphreys, B.R., Maresova, K. and Ruseski, J.E. (2010) *National Sport Policy, Sporting Success and Individual Sport Participation: An International comparison* // http://www.pubchoicesoc.org/papers_2011/Ruseski_Humphreys_Maresova.pdf (retrieved: 20-8-2011).
- IMF (International Monetary Fund) (2011) *World Economic Outhlook Database* // <http://www.imf.org/external/pubs/ft/weo/2011/01/weodata/index.aspx> (retrieved: 20-8-2011).

- Jajčević, Z. (2010) *Povijest športa i tjelovježbe*, Zagreb: Odjel za izobrazbu trenera Društvenog veleučilišta u Zagrebu and Kineziološki fakultet.
- Jeanrenaud, C. (ur.) (1999) *The Economic Impact of Sport Events*, Neuchâtel: CIES.
- Johnson, D. K. N. and Ali, A. (2000) "A Tale of Two Seasons: Participation and Medal Counts at the Summer and Winter Olympic Games", *Social Science Quarterly*, 85, pp. 974-993.
- Johnson, D. K. N. and Ali, A. (2004) *Coming to Play or Coming to Win: Participation and Success at the Olympic Games*, Wellesley College Dept. of Economics Working Paper No. 2000-10 // <http://ssrn.com/abstract=242818> or 10.2139/ssrn.242818 (retrieved: 1-3-2005).
- Késenne, S. (1999) Miscalculations and misinterpretations in economic impact analysis, In: Jeanrenaud, C. (ur.) *The Economic Impact of Sport Events* (pp. 29-39), Neuchâtel: CIES.
- Kuper, G., and Sterken, E. (2001) *The Olympic Winter Games: Participation and Performance* // <http://ssrn.com/abstract=274295> or 10.2139/ssrn.274295 (retrieved: 21-1-2001).
- Lera-López, F. and Rapún-Gárate, M. (2007) "The Demand for Sport: Sport Consumption and Participation Models", *Journal of Sport Management*, 21, pp. 103-122.
- Lugović, J. Jajčević, Z. Drpić, A. (2006) *Na putu olimpijske Hrvatske: Hrvatski olimpijski odbor 1991.-2006*, Zagreb: Croatian Olympic Committee.
- Lui, H. K. and Suen, W. C. (2008) "Men, Money, and Medals: An Econometric Analysis of the Olympic Games", *Pacific Economic Review*, 13 (1), pp. 1-16.
- Matrix Knowledge Group (2010) *Understanding the drivers of engagement in culture and sport (Technical report)* // http://www.culture.gov.uk/images/research/CASE-DriversTechnicalReport_July10.pdf (retrieved: 20-8-2011).
- Matros, A. and Namoro, S. D. (2004) *Economic Incentives of the Olympic Games* // <http://ssrn.com/abstract=588882> (retrieved: 4-9-2004).
- Montel, J. and Waelbroeck-Rocha, E. (2010) *The different funding models for grassroot sports in the EU* // <http://ec.europa.eu/internal-market/services/do>. (retrieved: 14-6-2010).
- Moosa, I.A. and Smith, L. (2004) "Economic development indicators as determinants of medal winning at the Sydney Olympics: an extreme bounds analysis", *Australian Economic papers*, 43(3), str. 288-301 // <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8454.2004.00231.x/pdf> (retrieved: 20-8-2011).
- Nana, G., Sanderson, K. and Goodchild, M. (2002) *Economic Impact of Sport* (online). Wellington: BERL (Business and Economic Research Ltd) // <http://www.berl.co.nz> (retrieved: 20-8-2011).
- NPD (2010) *European Sport Market Size Estimate* // http://www.fesi-sport.org/index.php?option=com_content&view=category&layout=blog&id=126&Itemid=54 (retrieved: 20-8-2011).

- Nys, J-F. (2006) "Central government and sport", In: Andreff, W. and Szymanski, S. (eds.), *Handbook on the Economics of Sport* (pp. 260-270), Cheltenham, UK and Northampton, MA, USA, Edward Elgar.
- Preuss, H. (2004) *The Economics of Staging the Olympics. A Comparison of the Games 1972-2008*, Cheltenham: Edward Elgar Publishing.
- Radan, Ž. (1977) *Pregled historije tjelesnog vježbanja i sporta*, Zagreb: University of Zagreb, Faculty for Physical Education.
- Rathke, A. and Woitek, U. (2007) *Economics and Olympics: An Efficiency Analysis* // <http://ssrn.com/abstract=967629> (retrieved: 21-1-2007).
- Roberts, G. (2006) *Accounting for Achievement in Athens: A Count Data Analysis of National Olympic Performance* // <http://web.uvic.ca/econ/ewp0602.pdf> (retrieved: 21-1-2007).
- Rütter, H., Stettler, J., Amstutz, M., de Bary, A., Grozea-Helmenstein, D. (2004) *Economic impact of the UEFA EURO2008TM in Switzerland*, Lucerne: Rüschlikon // http://www.swisstourjed.ch/art/dokumente/Impact_EURO_2008.pdf (retrieved: 14-5-2008).
- Sever, I. (1999) "Sustav financiranja sporta u suvremenom tržišnom društvu", In: M. Bartoluci (ed.), *Ekonomski aspekti sporta i turizma* (pp. 37-44), Zagreb, Fakultet za fizičku kulturu.
- SGMA (The Sporting Goods Manufactureres Association) (2011) *Sports, Fitness & Recreational Activities Topline Participation report* // <http://www.aahperd.org/naspe/advocacy/governmentRelations/upload/2011-SGMA-Participation-Topline-Report.pdf> (retrieved: 20-8-2011).
- Sport England (2004) *The framework for sport in England. Making England an active a successful sporting nation: a vision for 2020* // http://www.sportengland.org/facilities__planning/planning_tools_and_guidance/planning_contributions/national_framework_for_sport.aspx (retrieved: 20-8-2011).
- Sport England (2010) *Understanding variations in sports participation* (online). http://www.sportengland.org/research/understanding_participation/understanding_variations.aspx (retrieved: 20-8-2011).
- Sport England (2010a) *Economic Value of Sport in England: 1985-2008. Sport Industry Research Centre*, Sheffield Hallam University // http://www.sportengland.org/research/economic_importance_of_sport.aspx (retrieved: 20-8-2011).
- Sport England (2011) *About us* // http://www.sportengland.org/about_us.aspx (retrieved: 20-8-2011).
- Stipetić, V. and Bartoluci, M. (1993) "Uloga športa u gospodarskom razvoju", In: *Proceedings book of the conference on sport Alpe-Jadran*, Rovinj, pp. 215-224.
- Swinnen, J. and Vandemoortele, T. (2008) *Sports and Development: An Economic Perspective on the Impact of the 2010 World Cup in South Africa* // http://www.toolkitsportdevelopment.org/html/topic_05F45A11-6E6D-4F19-852E-

8683086F9CD3_92BC9CE9-F724-4A22-846C-D12CAEDFF111_5.htm
(retrieved: 20-8-2011).

Viseu, J. (2000) *Critical analyses of european economic impact studies in sport* // <https://repositorium.sdum.uminho.pt/bitstream/1822/2778/1/13%20Actas%20EUROPEAN%20ECONOMIC%20IMPACT%20STUDIES.pdf> (retrieved: 20-8-2011).

Sustav financiranja i upravljanja sportom u Republici Hrvatskoj

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Sažetak

Cilj je ovog rada istražiti povezanost između razine ekonomske razvijenosti i razine razvijenosti sporta. Sa stajališta upravljanja razvojem sporta, svrha istraživanja je ispitati mogućnosti financiranja sporta iz javnih izvora, budući da se to u funkcioniranju sustava sporta javlja kao najsloženiji problem. U radu su korištene metode regresijske i korelacijske analize te anketnog upitnika i deskriptivne statistike. Rezultati istraživanja pokazuju da ekonomska razvijenost Hrvatske, mjerena kroz visinu BDP-a, značajno pozitivno utječe na broj registriranih sudionika u sportu. Također, analizom intervala pouzdanosti moguće je odbaciti hipotezu da je izdašnost javnih izvora financiranja temeljni problem u upravljanju sportom. Moguće je stoga zaključiti da ključnu ulogu za kvalitetno upravljanje sustavom sporta imaju upravljačka tijela i menadžment sportskih organizacija.

Ključne riječi: *sport, upravljanje sportom, sustav financiranja sporta, razvijenost sporta*

JEL klasifikacija: *H41, H76, L83*

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