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Romanian athletics in numbers-a brief analysis

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Abstract: Sport system is a very complex mechanism whose proper functioning depends on the efficient operation of each component. "Functional requirements (a.n.: of a system) describe the desired end function of a system operating within normal parameters, so as to assure the design is adequate to make the desired product and the end product reaches its potential of the design in order to meet user expectations". ¹ The qualitative and quantitative evolution of some aspects that define the organization and functioning of the Romanian athletics system can be viable instruments for determining the potential/resources of evolution, as well as indicators for possible adaptive measures correlated with the tendencies. We have carried out a quantitative analysis of the evolution of some components of Romanian athletics system, of the number of clubs and athletes in the National Athletics Championships (by age/categories and events), the stability of the competitors over several years, and the evolution of recorded performances in order to identify progress and trends. The statistically processed informations, comes from the database of the Romanian Athletics Federation. ² In this context, we mention that the period covered by the research (2009-2017) was limited by the limited content of the mentioned electronic archive.

Keywords: quantitative analysis, trend, clubs, athletics, events

Introduction

No matter where it was placed - education, culture, leisure, health etc. - sports with its many implications, "has experienced an ever-ascending development during its existence, reaching unpredictable odds at its beginnings"

¹ www.whatis.techtargat.com

² www.fra.ro

(Dragnea and Mate-Teodorescu, 2002), thus justifying the interest we give to this phenomenon with global implications.

More than 2500 years ago, the Chinese philosopher Confucius (551-479 BC) said: "Search the past if you want to predict the future", which underlines the importance of historical-documentary analysis (Marinău and Suci, 2015). The reason of this introduction in the form of a brief incursion into the past/history of Romanian athletics, is the hope that this will create prerequisites for the development trends, which in turn will become tools for optimizing the organization and functionality of the system and for predicting future performances (Tatem et al., 2004). Everything comes in the context in which, in recent years, "sport has broadened its participation framework from young people to the elderly, from men to women, from school activity to leisure time, from hobby to profession, succeeding ... to model the physiognomy and human behavior" (Popa and Mihăilescu, 2012).

Although the official birth of Romanian athletics took place with the establishment of the "Running and Contests Commission" within the Union of Sports Federations in Romania 105 years ago (1912), the main chronological references that have marked the evolution of athletics as a sport have their roots long time before. Thus, history holds that the first Athletic Competition organized in Romania (Bucharest) took place in 1882, with the participation of the students from the "Saint Sava" and "Matei Basarab" High Schools (Marinău et al., 2010) and that the first athletic competition, popularized by a printed poster, the street run in Bucharest on a route between Mogoșoaia Bridge (Calea Victoriei) and the Outside Market (Calea Moșilor) (Boriga et al., 2012). In the same context, the first international participation of Romanian athletes was recorded in 1911, in a competition organized in Turin, Italy (Marinău et al., 2010).

Over time, the number of athletic associations or sport clubs with athletic sections, as well as dedicated competitions multiplied, culminating with the organization in 1914 of the first edition of the National Athletics Championship, to which 15 titles of National champion have been granted.

Throughout its history, evolution is labeled with emblematic names and spectacular performances: Lia Manoliu, Iolanda Balaș, Mihaela Peneș, Viorica Viscopoleanu, Argentina Menis, Gheorghe Megelea, Natalia Andrei (Mărășescu), Maricica Puică, Doina Melinte, Anișoara Cusmir and Vali Ionescu, Cristieana Cojocaru, Paula Ivan, Gabriela Szabo, Ionela Târlea, Lidia Șimon, Constantina Diță Tomescu, Marian Oprea and others on one hand, and on the other hand, the multitude of performances that brought countless medals at the Olympic Games (35), World Championships (97) and European Championships (136).

In the same frame of evolution, there are also some "waves" that have led to major changes in the structure of the events system, the evolution of materials and equipment,³ as well as the changes that generated the current Athletics Competition Regulation, some authors wondering whether the technological advance in the development of sports equipment is indeed an evolution or an attempt of fraud.⁴ The answers are elusive and seem to impose a stricter regulatory framework.

³ <https://ojs.ub.uni-konstanz.de>

⁴ www.lawinsport.com

In the last few years, sport has become a phenomenon of a planetary level, with special implications in economic, social, political, etc., the study of the implications and consequences being the subject of specialists from many fields (Gonçalves et al., 2013; Ilieș et al., 2014; Bale and Vertinschi, 2014; Buhaș and Dragoș, 2017), their number and diversity proving the importance of the subject. "Sports, through its organization and manifestation forms, through its built specific infrastructure, has become an inseparable part of society in general, the differences being of quantitative and qualitative nature and whose value is generated by the involvement degree of each actor as part of society" (Ilieș et al., 2014).

Progression of results in athletics is a reliable mean to assess the evolution of these sport which also reflects the evolution of society (Lippi et al., 2008). In order to understand the need for intervention at the level of the components of the Romanian sports system in general and especially athletics, we mention the evolution of the last results achieved by Romanian athletes in the international competitions (European championships) in the last few years:

European Athletics Championships (seniors): 2018 – 27th place on nations, winning 1-4th place, 3-7th places (11 points); 2016 – 29th place on nations, winning 1-4th place, 1-6th place, 1-7th place, 1-8th place (11 points); 2014 – 25th place on nations, winning 1-5th place, 1-6th place, 3-7th places, 2-8th places (15 points).

European Athletics U23 Championships: 2017 – 16th place on nations, winning 1-1st place, 1-2nd place, 2-4th places, 1-6th place, 1-7th place, 1-8th place (31 points); 2015 – 10th place on nations, winning 2-1st place, 1-2nd place, 1-3rd place, 3-4th places, 1-6th place, 1-7th place (49 points); 2013 – 10th place on nations, winning 1-1st place, 3-2nd places, 2-4th places, 2-5th places, 1-6th place, 1-7th place, 2-8th places (54 points)

European Athletics U20 Championships: 2017 – 18th place on nations, winning 1-1st place, 1-2nd place, 1-3rd place, 1-5th place, 1-8th place (26 points); 2015 – 18th place on nations, winning 1-1st place, 1-2nd place, 1-3rd place, 1-6th place, 2-8th places (26 points); 2013 – 17th place on nations, winning 2-2nd places, 1-4th place, 1-6th place, 3-7th places (28 points).

European Athletics U18 Championships: 2018 – 26th place on nations, winning 1-3rd place, 1-5th place, 1-6th place, 1-7th place (15 points); 2016 – 8th place on nations, winning 2-1st places, 1-2nd place, 3-3rd places, 1-5th place, 2-6th places, 2-7th places, 1-8th place (56 points).

The downward trend is evident from one edition to the next, but mostly when the athletes passes from one age category to the next; what happens to the medalists, when they pass to next age category and what happens to the athletes who have reached the seniority?

We will try to identify some of the systemic causes, by answering the question "what is happening?", not the question "why is it happening?".

Materials and methods

Research has taken place over a limited period because of limited information opportunities from romanian official sources (2009-2017). In order to do this, we used information on the number of clubs that provided athletes (by age and gender category) involved in the National Athletics Championship in the open air as well as

their achievements, collected from the official website of the Romanian Federation of Athletics. Other very important information has been obtained from official sources such as the website of the National Institute of Statistics and the French Athletics Federation.

To achieve the goal of the paper, the data obtained through the documentary method were processed, transformed into tables and graphs, analyzed and discussed.

Result

Starting from the premise that Romanian sport in general and athletics in particular is organized and functions within a functional system, we consider that at least some of the components defining this system need to be identified and analyzed (Buhaş and Dragoş, 2017). We have to say that the order of approach is random, it is not the order of importance we give to one or other of the components.

Funding

Although there is a lack of official information on the basic funding of sports clubs, being an important component of the sports system in Romania, we will make some references to the main aspects. Thus, it is a well-known fact that the amount of funding relates to two criteria: the number of legitimate athletes and the value deducted from the accumulation of points awarded to athletes for the first three places in the national championship and the top eight at the continental, world championships and the Olympic Games. In this way, the loisir, mass and veteran sports activity is minimized, or even ignored and the performance activity seems to become an end in itself.

By way of comparison, the French Athletics Federation grants licensing/legitimation titles to all categories of athletic practitioners for a fee, the income thus obtained contributes to supporting the activity, and those involved becoming community supporters of the clubs; as a compensation measure, all licensed athletes have access to the sports infrastructure of the club they belong to. Moreover, the basic funding is based on the same criteria as in Romania, but with another basis of support: we speak of a number of 307.952 licensed athletes practicing on 31.08.2017, ⁵ which represents a percentage of 4,62 licensees per 1.000 inhabitants of France, compared to 7.299 practicing athletes in Romania, representing 0,36 licensees per 1,000 inhabitants. ⁶

Just as an example, from the very limited information on funding, we can refer to the discrepancy in the budget allocation for sport: in 2015 in Romania, the state budget allocation for the Ministry of Youth and Sport was 82.250.112 € representing 0.052% of GDP or 0.87 €/inhabitant (Buhaş and Dragoş, 2017). By comparison, in most EU countries in the same year were allocated between 27 and 67 € per inhabitant (Andreff and Szymanski, 2006).

In the opinion of some specialists (Buhaş and Dragoş, 2017), other identifiable causes of underfunding of the Romanian sports system might be the lack of a well-balanced law of sponsorship that supports and stimulates infusion of capital in

⁵ www.athle.fr

⁶ <http://statistici.insse.ro>

sports on the one hand and the direction to financing sports of a more consistent part from the revenues earned by the Romanian Lottery and the charges paid by sports betting operators.

Infrastructure

Unfortunately, although an essential component of any functioning system such as sport, we can see that there is a lack of official information available from public sources on infrastructure as well as other issues. However, from the analysis of the official calendar of the Romanian Athletics Federation, ⁷ several aspects can be highlighted:

- athletics indoor competitions were organized in only two cities (Bucharest and Bacău), being the only ones to "host" athletics halls; it should be mentioned that the training of athletes in the autumn/winter season can be carried out, several universities in which there are faculties or departments of physical education and sports having in the structure of the material base athletic halls (in which, however, there is mainly the didactic activity specific to the discipline Teaching of athletics bases and technique);

- the finals of the National Athletics Championship for all age groups were organized in the following cities: Bucharest, Pitesti, Cluj Napoca; there are also some stadiums with synthetic athletics track (Constanța, Piatra Neamț and recent date, Arad), which until now have not (Constanța is an exception) hosted official final competitions, probably not meeting the conditions for approval;

- the lack of adequate conditions for organizing the preliminary (local, county and zone) stages of the Indoor and Outdoor National Championship, at least for the zone stage, even they are provided in the official timetable of the Romanian Athletics Federation, makes the number of competitions compiling the internal calendar of the federation either extremely small, depriving athletes – especially children – by one of the most important motivation factors: competition.

Without any irony, it seems very little for a country like Romania and for a sport like athletics in terms of declared intentions and real-life actions, taking into account that 75% of the all infrastructure for sports is at the level of the 1980's.

Internal organization

First of all, we must note that the sports activity is coordinated by three central structures: the Ministry of Youth and Sport, which through the Sports Federations coordinates the sport activity in general, the Ministry of National Education, which through the School and University Sports Federation coordinates the sport activity in the school units and in universities and the Romanian Olympic and Sports Committee, which as an independent structure - affiliated to the International Olympic Committee - coordinates the sport activity for participation in the Olympic Games. From the current experience, it seems that the three categories of structures do not always cooperate very well.

On the other hand, the actual activity is carried out within sport clubs with athletic sections and we need to pay more attention to them. Being such an

⁷ www.fra.ro

important component, we can analyze the evolution of the number of clubs with athletic sections as a whole and by category. In order to be able to compare with the age categories classified in other countries/athletics systems or in the international competitions, inside the table we will find the age of each competition category.

So, although the number of athletic sections in the sports clubs reached 252 - the maximum of the last years (according to National Institute for Statistics Annual report) in 2016, at least four aspects can be observed (table 1):

Table 1. Evolution of the total number of clubs and athletes registered at the National Athletics Championship by category

(source: The official site of Romanian Athletic Federation)⁸

Year	2009	2010	2011	2012	2013	2014	2015	2016
Total number of clubs	237	242	244	252	224	237	245	252
Number of clubs by age category								
S+T/Seniors+Youth (over 23+20-22 years old)	105	115	73	74	78	77	97	90
J1/1st junior (18-19 years old)	92	81	93	92	94	106	84	93
J2/2nd junior (16-17 years old)	100	104	101	106	107	105	117	117
J3/3rd junior (14-15 years old)	98	97	98	105	103	101	106	105

- although the trend is positive, the number of athletic sections is low compared to the current population of Romania: one section to 78.414 inhabitants (according to the NIS in 2016 the population of Romania was 19.760.314 inhabitants); just by way of comparison, we exemplify the example of France whose athletic activity is organized in 1.917 athletic clubs for a population of 66.628.000 inhabitants (at the 2016 census, after Wikipedia), which means an average of one club for each 34.756 inhabitants (more than double as in Romania);

- the discrepancy between the total number of clubs and the number of clubs providing athletes participating in the Romanian National Athletics Championship for all age groups (outdoors);

- the oscillating evolution of the number of athletes by age, the lack of any correlation between the number of clubs and the number of athletes and especially the small number of athletes in the small categories, which distorts the pyramidal form of sport performance and which we consider to be a defect in the internal organization of the sport system;

- knowing that in Romania there are no clubs dedicated to age groups (one club legitimate athletes in all categories), it is surprisingly large the difference between the total number of clubs affiliated to Romanian Athletics Federation and the number of clubs represented at the finals of National Athletics Championship.

⁸ www.statistici.insse.ro

Human resources: athletes

Although in the order of analytical approach is not the first, we consider athletes to be the most important component of the sport system anywhere in the world; if there were no athletes, there would be no coaches and no sport in the most general sense. Therefore, the concern to attract and retain young people but not only within the sporting phenomenon - no matter what form of sport is practiced (loisir, mass sport, performance sports or sports for veterans and the elderly) - should be a major concern of any national government.

In order not to confuse the age categories, we mention that in the statistics and rankings of the FRA (Romanian Athletics Federation), the upper age categories (seniors and youth) appear in tandem, because given the small number of senior athletes who are legitimate, they could not organize competitions only for this category (seniors). Also, in order to be able to compare with the age categories classified in other countries or in the international competitions, as in the previous table, we will also find the age of each competition category in the next chart.

In Romania during the analyzed period, the evolution of the number of athletes legitimated in the target age categories was anarchic, apparently random, which seems to highlight a lack of concern for maintaining the youth within the sport phenomenon or a lack of strategic vision on long-term.

Thus, we can observe (figure 1) a steadily ascendant evolution only for the seniors, the other categories exhibiting a oscillating or descending evolution, which in time will lead to a failure, a lack of continuity between categories. It is hard to find an explanation for the numerical difference - sometimes very large - when moving from a lower to an upper age (taking into account the stagnation of two years in each category); we can see that over two years (2015, 2016) more than 600 athletes participated in the J2 national championship, and in 2017 only 351 of them are in the upper category (J1). It is obvious that almost half of them have abandoned their sport activity or have turned to other sports disciplines.

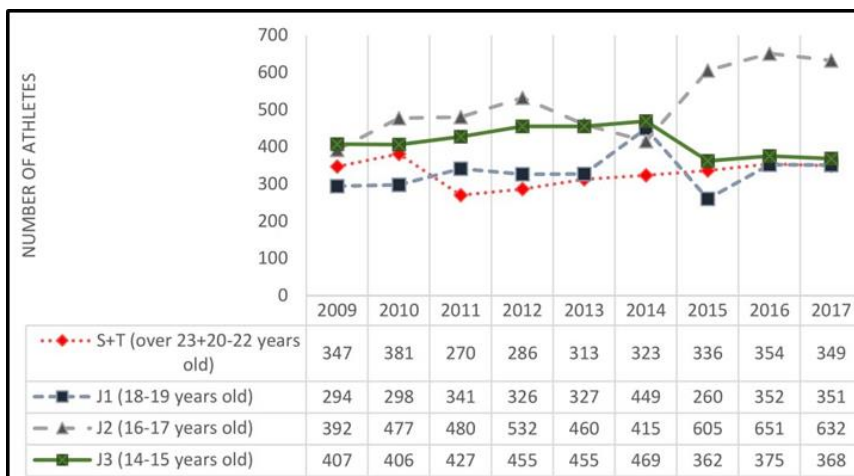


Figure 1. Evolution of the number of athletes on category in the Romanian National Athletics Championship (outdoor)
(Source: official site of Romanian Athletics Federation)

Without looking into the criteria and particularities of selection (Weinek, 1983; Manno, 1994; Dragnea and Mate-Teodorescu, 2002), most specialists place the primary selection for athletics at the age of 9-11; although they are close to the age of selection, we did not introduce in the analysis categories of children 3, 2 and 1 (ages 8-9, 10-11, 12-13 years) because there is an information lack on the FRA site for the period analyzed. However, in this context, we can state that in the year 2016 a number of 1.225 athletes participated in the final stage of the National Athletics Championship - category children 1, 2 and 3 (a much smaller number than the total number of athletes allowed at these categories, because the participation in the final stage is conditioned by the fulfillment of the participation scale); because the total number is not broken down, we cannot make a comparison between categories. We can, however, say that not a late selection can explain - especially for the situation of the last 3 years - the quantitative difference with the almost spectacular increase of the number of J2 compared to the number of athletes registered in J3 category (over 600 J2, versus 360-370 J3). It is evident once again the oscillating evolution which besides other causes can also mean a lack of pro-active involvement of the decision-makers in the sport field.

One explanation could be if we would consider the situation of migration from other sports to athletics, but the reality is different: changing the perception of the role and contribution of athletic training in building the motricity base for all dynamic sports, probable has made some parents to guide their children to athletics first, then to guide them to other sports (especially football). By trying to identify possible causes, without arguing that there is "unfair competition" of sports games or the migration of athletes from athletics to other sports, we can try an analytical intake in the evolution of the number of athletes legitimated in other sports disciplines, especially in the field of sports games compared to athletics.

From table 2 we can identify and analyze some aspects (with Bold characters, we highlighted the maximum number reached in each sport):

Table 2. Evolution of the number of legitimated athletes in different sports

(Source: official site of National Institute of Statistics)

Year/Sports	Athletics (*%o of total population)	Football (*%o of total population)	Tennis (*%o of total population)	Basket-ball (*%o of total population)	Handball (*%o of total population)
2009	5.047 (*0,25)	127.015 (*6,42)	16.528 (*0,83)	11.456 (*0,57)	7.440 (*0,37)
2010	5.764 (*0,29)	109.463 (*5,53)	18.103 (*0,91)	13.219 (*0,66)	7.620 (*0,38)
2011	7.402 (*0,37)	119.741 (*6,05)	18.308 (*0,92)	14.667 (*0,74)	7.900 (*0,39)
2012	7.459 (*0,37)	120.520 (*6,09)	3.262 (*0,16)	17.169 (*0,86)	10.525 (*0,53)
2013	8.880 (*0,44)	122.417 (*6,19)	3.262 (*0,16)	18.454 (*0,93)	7.845 (*0,39)
2014	10.135 (*0,51)	117.328 (*5,93)	3.370 (*0,17)	20.170 (*1,02)	7.845 (*0,39)
2015	11.458 (*0,57)	132.922 (*6,72)	3.370 (*0,17)	21.663 (*1,09)	7.845 (*0,39)
2016	7.299 (*0,36)	118.040 (*5,97)	-	22.957 (*1,16)	7.268 (*0,36)

- even if the information is official and the consistency with a small increase in the number of tennis athletes in 2012-2015 is reasonable, it is almost inexplicable "collapsing" from 18,308 athletes in 2011 to 3.262 athletes in 2012, which is why we will not refer to these data; on the other hand, the relatively small number of tennis

athletes on the performance level (we do not include the number of children involved in tennis as a loisir activity and who are not legitimated) can be explained by the high expenses involved in preparing and participating in tournaments (costs of equipment and materials, tennis courts, coach, travel expenses, accommodation, meal, taxes etc.);

- a steady increase in the number of licensed athletes by 2015 and a decrease of 4.159 athletes in 2016 compared to the previous year (a decrease of 36,29% compared to 2015);

- an oscillating increase in the number of football players with a peak in 2015; the share of football players in the total population is huge compared to all other sports analyzed (6,72 players per 1,000 inhabitants, compared to 1,16 basketball players, 0,57 athletes or 0,53 handball players);

- steady growth - which seems to be sustainable and a consequence of a development program - in basketball; the contribution of private capital, the infusion of foreign players and thus the increase in spectacularity, which made sport visible on media channels and attracted more spectators in the stands;

- despite the tradition and the performances achieved (in the last years especially by the clubs and national female teams), the low attractiveness evidenced by the number of players compared to the basketball for example.

Thus, we can reaffirm that team sports are not a "threat" to athletics (perhaps only football through the social and media impact it generates) and that attracting young people to practice athletics must become an objective of the policies promoted by the Ministry of Youth and Sports by the Romanian Athletics Federation.

Human resources: trainers/coaches

Although it is an important component of a functional system that highlights the potential of athletes, because we do not have a solid basis for qualitative analysis and sufficient information for a complete quantitative analysis, we will just summarize some aspects.

In theory, the effectiveness of sports training is conditioned by the optimal number of athletes that a coach prepares simultaneously, obviously making the necessary differentiation between individual sports (such as athletics) and team sports. Normally, hiring coaches inside sports clubs is the result of a "staff policy" promoted by governing bodies, taking into account, at least, the reality and prognosis of the evolution of the number of athletes/players.

Analyzing the data (table 3), we can see that:

- in athletics, the athletes/coach ratio progressively increased to nearly 20, as the number of coaches involved in sports training remained constant until 2015, after which it decreased, with the number of athletes doubled between 2009-2015, which could be counted as one of the factors of performance decline;

- in the case of football, the variation in the number of coaches (between 1.261 and 3.771) and the invoked ratio (between 31,75 and 87,56) is very high, obviously there is no correlation between the number of coaches and those of the athletes involved in the sports activity;

- observing the situation of the other three sports disciplines, we can see a relative stability in evolution for all the analyzed criteria, the amplitude of the variations being a moderate one.

Table 3. Evolution of the number of coaches and athletes/coach ratio
(Source: official site of Romanian National Institute of Statistics)

Sports	Items	2009	2010	2011	2012	2013	2014	2015	2016
Athletics	No. of coaches	601	601	601	601	601	601	601	554
	Athletes/coach ratio	8,39	9,59	12,31	12,41	14,77	16,86	19,06	13,17
Football	No. of coaches	2.093	1.262	3.771	1.918	2.209	2.277	2.510	1.348
	Athletes/coach ratio	60,68	86,73	31,75	62,83	55,41	51,52	52,95	87,56
Tennis	No. of coaches	259	259	259	258	258	258	258	-
	Athletes/coach ratio	63,81	69,89	70,68	12,64	12,64	13,06	13,06	-
Basketball	No. of coaches	553	553	595	595	605	504	504	467
	Athletes/coach ratio	20,71	23,90	24,65	28,85	30,50	40,01	42,98	49,15
Handball	No. of coaches	414	414	406	476	402	402	402	402
	Athletes/coach ratio	17,97	18,40	19,45	22,11	19,51	19,51	19,51	18,07

Discussion

Among the less studied aspects, which are not found in the present study, are the issues of motivation of all those involved in the sports phenomenon and of the ways to keep young athletes inside the sport system after graduating the high school or academic education. In the latter case, we refer to the issue of "double career".

All these objective data can be interpreted "in the mirror"; may be opinions that motivate the current state of Romanian athletics, but we believe that the decline cannot be denied. Identifying the causes is the easy part, the difficult part is the implementation of the efficiency solutions and this is the responsibility of the government authorities. It seems obvious that the issue of well-targeted funding and the collaboration of sport structures at all levels - including the components of pre-university and academic education - can produce positive effects in the sense of increasing the performances and the place that Romania can occupy among the nations of the world.

Conclusion

Jack W. Duncan (quoted by Buhaş, 2015) define management as "a conscious process by which individual and group activity is coordinated in order to achieve the objectives of the organization, stating that management performs acceptable tasks and objectives in terms of values of certain societies". According to the same author (Buhaş, 2015), sport is a system to be managed because "is an evolving component of the modern social life, with a national and international structure of its own, with a specific material support and a large group of technical and specialized staff, with organizational structures based on systems, rules, theoretical principles, national and international institutions and bodies, which are aiming to train and improve the

biological, material and spiritual elements of practitioners and of participants in sports activity”, being also one of the most dynamic phenomena in post-communist Romania (Herman et al., 2016).

Summarizing the previously captured aspects and the opinions of the cited authors, we can say that for having a good overview and systemic organization of sports activity, including athletics, it is necessary to combine the efforts of all "actors" involved in the sport phenomenon to develop a medium and long-term strategy that includes the previously analyzed components but not only. By making an analogy between all the above-mentioned aspects and the SWOT analysis method, we can identify the strengths and weaknesses of the Romanian sports system in relation to the opportunities and threats existing in the context of contemporary evolution.

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