

# Evaluation and development prospects of the sports and recreation market in Poland in 2000–2030. PEST analysis from a legal, economic, socio-cultural and technological perspective

## Authors' Contribution:

- A** Study Design
- B** Data Collection
- C** Statistical Analysis
- D** Data Interpretation
- E** Manuscript Preparation
- F** Literature Search
- G** Funds Collection

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## abstract

The article presents an analysis of legal, economic, social and technological factors affecting the sports and recreation sector in Poland. It attempts to quantify changes of 20 weighted factors that have a significant influence on the shape of the market in 2000–2030. The results are used as a basis for finding the potential growth gap of this sector up until 2050.

The methodology selected for the research process was based on a macro-environmental study using PEST analysis. The model in principle requires that its users analyze factors without the feedback effect, i.e. those that determine the shape of the sports and recreation market, while the influence of individual entities or organizations on the market should not be evaluated. The synthetic analysis of changes in the sector was based on expert opinions on the identified factors, including legal changes that arise mainly from adaptation of the Polish law to the regulations of the European Union.

**Key words:** PEST analysis, sports and recreation, sector.

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## INTRODUCTION

For almost 30 years, we have been witnesses to a dynamic economic transformation of Poland that is not only visible in a strictly economic sphere but affects also the social and cultural one and, as such, has a considerable influence on the consumer choices of market participants. Consumption is understood here very broadly and relates to satisfying consumers' needs by buying not only material goods but also services, including those connected to the growing social awareness of the importance of a healthy diet, biological regeneration and physical and physiotherapeutic prevention and of the need to undertake physical activity or even consistent practice of selected sports. All of those products and services have a complementary effect on man's harmonious development, improving his physical condition and effectiveness at work and increasing his satisfaction drawn from various spheres of his activity.

Changes in both supply and demand in the broadly understood sports and recreation sphere (later: SRS) have an influence on many other branches of the economy. It is already at the local government level that sports and recreation events or fairs become an inherent part of the community's life and a distinguishing feature of the region and, as such, build the local product and make the region more recognizable and unique. They are also stimulated by various infrastructural investments aimed at encouraging the society to live actively by establishing habits related to people's physical activity. Finally, the constantly observed socio-cultural change we witness and participate in stimulates demand for such groups of products as clothing or sports equipment. Furthermore, the (relatively long) product life cycle traditionally described in the literature on the subject keeps shortening all the time due to the increasingly accelerating "moral depreciation", which does not consist in physical wear and tear but the need to buy new products driven by social pressure.

Even though sports and recreation should be located at the very bottom of Maslow's hierarchy of needs [7] (together with other physiological needs), it seems that in real life and from the perspective of regular households, the place and conditions for practicing sports appear in the society together with a certain minimum but acceptable level of financial stability (in a higher layer of the pyramid, together with self-actualization)<sup>1</sup>. On the one hand, economic development might be a result of human resources' work, but on the other hand, it also creates internal demand for sports and recreation services offering balance between workload and leisure and recreation. Just as in many other areas of economy, it is relatively easy to identify substitute goods in the sports and recreation sector. In free market economy, they result from intensifying competition between market players, but the demand for such products also increases because it is a response to (or even stimulus for) increasingly sublime consumer needs.

## METHODOLOGICAL BASIS OF AGGREGATE PEST ANALYSIS OF THE SPORTS AND RECREATION MARKET

The main aim of the article is to identify the prospects for development of the sports and recreation market in Poland based on an analysis of factors considered important in PEST analysis, i.e. legal, economic, socio-cultural and technological factors [6,8]. In order to analyze those in the context of

<sup>1</sup> What we can see here is clear dissonance between the importance of physical activity analyzed through the prism of social sciences (where we find disciplines like economy, finance or management and quality-related sciences) and its significance as seen by medical, health and physical culture sciences.

sports and recreation, we have chosen aggregate dynamic PEST analysis [1] considered important in PEST analysis, i.e. legal, economic, socio-cultural and technological factors [6, 8]. In order to analyze those in the context of sports and recreation, we have chosen aggregate dynamic PEST analysis [1] performed at intervals of 10 years, focusing on past changes in the selected spheres in the years of 2000 and 2010 and extrapolating from the results to the years 2020, 2030 and 2050. We have calculated the weighted score of several variables introduced to the PEST analysis for every out of four points on the timeline using expert knowledge, which provided a dynamic and aggregate overview of the changes to the Polish sports and recreation market between 2000 and 2030. Among the advantages of such a methodology, there is definitely its multidimensionality, as it allows us to not only diagnose changes in the four main spheres (PEST) but also evaluate the factors that influence them, including their importance for the whole market model. We treat the research described in the article as a pilot study that should be extended with the help of other experts who would undertake a dynamic PEST analysis of the selected factors in the SRS. We do, however, believe that the methodology applied to the research and the graphical representation of the changes in the sphere deserve some attention and could serve as an interesting suggestion for other researchers who could use them in sectoral analysis.

Our research into the sports and recreation market using PEST analysis consisted of the following stages:

1. Selecting the methodology to research the SRS macro environment; we decided to perform the PEST analysis and adopt a dynamic perspective.
2. Identifying five most important variables that serve as stimulants<sup>2</sup> in all of the four PEST spheres and are perceived by experts as those that decide on the current shape of the SRS and define its future market model.
3. Attaching weight (significance level) to each of the five variables, assuming that the sum of the weights of all variables in a given sphere equals 100%.
4. Expert evaluation (with justification and a commentary) of the changes observed in the analyzed factors in years 2000, 2010, 2020 and 2030, contained in the (-5) to (+5) bracket.
5. Calculating weighted scores for each PEST sphere and presenting the results in a graphical form, i.e. in a system of coordinates.

Using those analytical stages, we have managed to prepare a dynamic model of changes happening in the SRS in 2000–2030. Each specific variable in all of the four PEST factors (described in point 4 of the research procedure) was evaluated according to our own scoring method presented in Figure 1.

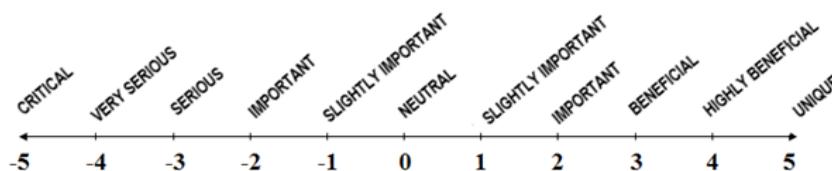


Fig. 1. Point scale for estimating the influence of particular factors in the SRS PEST analysis

<sup>2</sup> It was very important to identify the stimulants because at stage 4 of the research we estimated the influence rate of those variables on the sports and recreation market model using the scale pictured in Figure 1. If we were to use destimulants in our research, we would have to turn the evaluation scale and attribute the value (-5) to the increase or intensification of a given destimulant and, analogically, (+5) to its decreased influence on a given sphere. In order to ensure clarity of the analysis, we have identified variables in such a way as to describe them as stimulants.

## LEGAL CONDITIONS REGULATING THE FUNCTIONING OF ECONOMIC ENTITIES ON THE POLISH SPORTS AND RECREATION MARKET

The sports market differs greatly from a traditionally understood consumer goods and services market. In Poland, it is governed by not only general regulations applicable to all broadly understood economic entities but also by regulations controlling sports organizations as such, including the European Union and national legislation and all kinds of laws issued by international sports organizations that describe in detail the obligations of sports organizations related to their participation in the sports market. Among the Polish national regulations that define the legal aspects of economic activity on the sports market are especially the Act on Sports and the Act on the Security of Mass Events<sup>3</sup>. One should also remember about a series of interdisciplinary legal and organizational issues that determine the functioning of the SRS stakeholders, for example the right to sports, EU competition law in the sports sector, media law and the organization of sports events, sports competition protection, intellectual property protection in sports or tax and insurance law in the sphere<sup>4</sup>.

Another group of laws and regulations relates to the form of functioning on the sports and recreation market. In the sports sector, we can distinguish the following market participants: the International Olympic Committee, national Olympic committees, international sports federations, national sports unions, sports events organizational committees, sports centers, sports associations, sports leagues and sports clubs [12].

The commercialization of sports has changed the nature of activities undertaken by sports organizations, which have now become enterprises active on many planes and structured as legal entities aimed at generating profit from their economic activities. Even though associations are still the most popular form of activity among sports clubs, those at the top level operate as commercial companies. In the Polish legal system, this is possible thanks to the institution of professional leagues. Analyzing the context of the whole SRS, amateur recreation and touristic activities are still dominated by non-agricultural businesses undertaken by natural persons [3].

The freedom of economic activity referred to in the Polish Constitution should be considered as a starting point for all kinds of economic activities, including the sports ones. The constitutional basis of undertaking economic activities was so far elaborated on in the Act on the Freedom of Economic Activity [13], which contained a definition of economic activity related to the described scope of freedom. Within that scope, it was allowed to undertake legally permissible activities of legal significance for economic activity organized according to rules and regulations defined by law and aimed at achieving specific goals. The act was replaced by a new regulation, the Entrepreneurs Law [15], passed on 6 March 2018.

<sup>3</sup> Broader legal analysis could indicate additional laws that apply to entities operating on the sports market, including, for example, the Constitution of the Republic of Poland, the Act on the Freedom of Economic Activity, the Industrial Property Act, the Commercial Companies Code, the Civil Code with reference to contract and agreements, tax law and other legal acts.

<sup>4</sup> Primary EU legislation also determines the shape of the member states' law as regards the SRS. These are for instance: the Treaty on the Functioning of the European Union, the White Paper on Sport and the rulings of the Court of Justice of the European Union.

Within economic activity as such, there is of course place for sports activities<sup>5</sup>. The current Act on Sports [14] does not contain many detailed provisions that would modify the rules on economic activity for sports entities. There are, however, several specific exceptions as regards sports market participants that are worth some attention. According to Article 3(1), sports activities can be conducted mainly in the form of sports clubs. Article 2, in turn, specifies that a sports club can operate as a legal entity. These regulations introduce a significant modification to the freedom of choice of the organizational form of the undertaking enjoyed in general by entrepreneurs. The next provision that applies to the functioning of a sports club and that can influence the scope of its economic activities is Article 10, according to which a natural person or legal entity that is a member of or holds stocks or shares in a Polish Sports Association member club cannot be a member of, hold stocks or shares in or be a member of any body or authority of another sports club involved in competition within the same sport.

The law on competition protection in sports is yet another important issue. We can easily indicate two main reasons why competition law (including especially the EU competition law) plays a huge role in the sphere of sports activities. The first reason is, of course, commercialization and professionalization of sport, followed by its subordination to the regulations of economic law, including its important subdomain of competition law.

It should be stressed that the interference of European institutions in sports is visible especially in the sphere of internal market liberties, including especially the freedom of movement for workers. The connections between the European Union and sports are visible in two main areas: respecting the EU law (including the freedom of movement and competition law) in sports and undertaking sports-related activities at the EU level (defined as the sports policy of the European Union). The first type of connections involves subjecting sports activities to the regulations governing the internal EU market, with the necessary modifications related to the specificity of the sports sphere. This has been decided on by the CJEU already in 1974 in case 36/74 Walrave and Koch. The European Commission serves an important role here as well, especially with regard to the competition law. The possibility of applying the EU law to sports, however, demands some explanation. Firstly, sports-related activities (including most of all practicing sports but also training competitors, organizing sports events or working as a sports agent) are subject to the EU law to the extent they constitute economic activity as understood by the EU law. This means performing work for remuneration, providing services for remuneration and conducting business. Such activity is subject to the provisions of the Treaty on the Functioning of the European Union, including especially articles on:

- the freedom of movement for workers (Articles 45–48 of the Treaty on the European Union and the Treaty on the Functioning of the European Union, later: TFEU);
- the freedom of establishment (Articles 49–55 TFEU);
- the freedom to provide service (Articles 56–62 TFEU);
- competition rules – if a given entity operating on the sports market can be considered an undertaking as understood by the EU law (Articles 101 and 102 TFEU) [2].

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<sup>5</sup> Such economic activity can be undertaken based on general regulations contained in the Act on the Freedom of Economic Activity and related, for example, to the obligation to register the activity or to conduct it based on fair competition and respect of good practice. Restrictions on economic activity as defined in the Act can result from more specific regulations devoted to the sports market. This was the case for example with an article in the Act on Physical Culture of 1996 that is no longer in force but described the duty to obtain a concession to run economic activities in the form of a “sports joint stock company”.

It results from the above that those competitors, sports clubs, international organizations, sports unions, referees, coaches, trainers, instructors, sports agents and other sports market participants that conduct such activities operate on the internal market of the European Union (as employees, employers, service providers, entrepreneurs etc.) and as such are subject to its regulations. By contrast, if sports were completely excluded from the EU law, entities active in the sports sphere would not be allowed to enjoy the benefits of the European integration as opposed to those active in other spheres, which would lead to unjustified inequality. On the other hand, the specificity and needs of the sports sector demand that the EU law be more carefully applied to the whole sphere and sometimes justify restrictions of rights granted by the Treaty.

Finally, there is one more issue that is of crucial importance for the relations between EU and sports, i.e. the possibility of checking if the regulations passed by sports organizations operating as associations or unions of associations (and as such functioning in the non-governmental sphere) are in conformity with the EU law. The Court of Justice of the European Union takes the view that the EU would not be able to pursue its aims effectively if such private entities as associations pointed at their autonomy to restrict basic rights derived from the EU law.

## LEGAL (REGULATORY) CONDITIONS ON THE POLISH SPORTS AND RECREATION MARKET

The legal factors influencing the changes on the sports and recreation market outlined in the previous part of the article have allowed us to select 20 factors (analyzed from separate perspectives of the PEST model) that we considered crucial for the definition of the current and future model of SRS in Poland. Table 1 presents weighted scores of changes of the legal (regulatory) factors we have considered to be the most important. They have been evaluated at four intervals: 2000, 2010, 2020 and 2030. Positive changes within a given factor that influenced the SRS in Poland were granted higher scores (up to +5 points), whereas negative ones received the lowest number of points (up to -5 points).

Table 1. A matrix of weighted scores of changes of legal (regulatory) conditions influencing the SRS model in Poland: 2000–2030

No.	REGULATORY (LEGAL) FACTORS affecting the sports and recreation market in Poland	Weight		a Score (from -5 to +5)			
				b Weighted score (a product of weight and score)			
				2000	2010	2020	2030
1a	Adapting selected internal legal aspects to the process of sports commercialization, including especially the principles of competition, intellectual property protection and others.	10%	a	-	4.00	5.00	5.00
b			-	0.40	0.50	0.50	
2a	Poland's membership in the European Union; EU rights applicable to the sports market.	25%	a	-	3.00	4.00	4.00
2b			b	-	0.75	1.00	1.00
3a	Poland and Ukraine hosting Euro 2012	15%	a	-	4.00	4.00	3.00
3b			b	-	0.60	0.60	0.45
4a	The Act on the Security of Mass Events of 20 March 2009 with later amendments	25%	a	3.00	4.00	4.00	4.00
4b			b	0.75	1.00	1.00	1.00
5a	Introduction of provisions on the professionalization of sports clubs by the Polish government (among others in the Commercial Companies Code)	25%	a	5.00	4.00	5.00	5.00
5b			b	1.25	1.00	1.25	1.25
SUM		100%	-	2.00	3.75	4.35	4.20

Source: Own work

Taking into consideration the most important regulatory changes affecting the SRS in Poland, we can see that the year 2020 received the highest synthetic weighted score. Extrapolated to 2030, the results show that this sector is mature and will not undergo major legislative changes

## ECONOMIC CONDITIONS ON THE POLISH SPORTS AND RECREATION MARKET

Another group of five factors included in our PEST analysis that are important for the understanding of the changes affecting the Polish sports and recreation market is centered around economy. Table 2 shows the results of our estimation of the influence of particular factors on the condition of the SRS at four intervals.

Table 2. A matrix of weighted scores of changes of economic conditions influencing the SRS model in Poland: 2000-2030

No.	ECONOMIC FACTORS affecting the sports and recreation market in Poland	Weight	a	a Score (from -5 to +5)			
				b Weighted score (a product of weight and score)			
				2000	2010	2020	2030
1a	EU subsidies - structural support in financing sports, tourist and recreation infrastructure (especially at the local government's level).	45%	a	-	4.00	5.00	4.50
b			-	1.80	2.25	2.03	
2a	Intensification of national economy entities in the sector (according to sections and divisions of the Polish Classification of Activities of 2007 and privately owned sectors - section R, division 90/91/92/93).	10%	a	2.00	2.50	3.00	3.00
2b			b	0.20	0.25	0.30	0.30
3a	Prospects of income at the level of households in correlation with broadly understood standard of living (unemployment level, tendency to spend money on consumer goods within the sphere of sports, tourism and recreation).	25%	a	-	2.00	4.00	4.50
3b			b	-	0.50	1.00	1.13
4a	Prospects of income at the macroeconomic level, determining not only the creation of growth potential in the sports, tourism and recreation sphere but also the growth level in other related sectors (industries).	15%	a	2.00	3.50	4.00	4.50
4b			b	0.30	0.53	0.60	0.68
5a	Bankruptcy proceedings / reorganization of SRS entities - intensification and scope of the phenomenon against the background of demographic processes of national economy entities.	5%	a	4.00	4.00	4.00	4.00
5b			b	0.20	0.20	0.20	0.20
SUM		100%	-	0.70	3.28	4.35	4.33

Source: Own work

The highest weight among the factors analyzed in Table 2 was attached to the EU structural funds invested in the sports and recreation infrastructure in Poland. The highest score of that factor expected in 2020 indicates a significant level of saturation with such investments on the Polish market.

Among the identified economic factors is also the supply potential of national economy entities. Thanks to the Polish Classification of Activities [Polska Klasyfikacja Działalności, PKD] [10] specifying the sectors in which national economy entities are active, we can isolate entities operating within the broadly understood sports and recreation sphere and notice that they include production, trade and service entities<sup>6</sup>. We have conducted separate

<sup>6</sup> For obvious reasons, section C (industrial processing) consists of the biggest number of entities that could be classified as undertakings co-creating the SRS that are at the same time most internally diverse in their production activities. As a consequence of such production and import activities, the number of trade units is also growing, but they do not constitute a homogeneous group of undertakings either. From a statistical perspective, it would be difficult to clearly isolate those undertakings that offer products connected solely to an even broadly understood sports and recreation market from the whole population of trade units.

quantitative research that allowed us to evaluate demographic changes of national economy entities (based on their National Business Registry Number REGON)<sup>7</sup>. In our opinion, however, the factors that are most prospective as far as future changes to the Polish SRS are concerned are those connected with the prospects of income at the level of households (displaying an upward trend) and at a macro-economic level (also displaying an extrapolated upward trend), which not only determines how the potential for the increase in SRS values itself is created but also defines the increase level in related sectors (industries).

## SOCIAL (SOCIO-CULTURAL) CONDITIONS ON THE POLISH SPORTS AND RECREATION MARKET

We believe that there is a great potential for further changes in the forecast SRS model in social (socio-cultural) factors. We currently witness very important transformations in the behavior of the participants of this market (consumers), including especially their attitude towards an active and healthy lifestyle. We have evaluated five of the most important factors (in years 2000–2030) and included the results of our analysis in Table 3.

Table 3. A matrix of weighted scores of changes of social conditions influencing the SRS model in Poland: 2000–2030

No.	SOCIAL (SOCIO-CULTURAL) FACTORS affecting the sports and recreation market in Poland	Weight	a	a Score (from -5 to +5)			
				b Weighted score (a product of weight and score)			
				2000	2010	2020	2030
1a	Tendency to undertake sports-related activities, physical recreation and tourist activities (including local-government projects and regional and social events).	25%	a	2.00	2.50	3.00	3.50
b			0.50	0.63	0.75	0.88	
2a	Promoting proactive attitudes in social media, engaging famous people as ambassadors of sports brands, setting fashions (supporting consumer processes).	25%	a	1.00	3.00	3.50	4.00
2b			b	0.25	0.75	0.88	1.00
3a	Awareness of the importance of a healthy lifestyle, diet and supplementation, physiotherapy and active leisure: patterns, habits and social models.	30%	a	1.50	2.00	2.00	2.50
3b			b	0.45	0.60	0.60	0.75
4a	Globalization processes, flow of information from an international perspective, unification of patterns of behavior and attitudes, including proactive changes.	10%	a	1.00	1.50	3.00	4.50
4b			b	0.10	0.15	0.30	0.45
5a	Atomization of individuals in the society, time management models, professional priorities (career and professional development paths).	10%	a	1.00	2.00	1.00	0.50
5b			b	0.10	0.20	0.10	0.05
SUM		100%	-	1.40	2.33	2.63	3.13

Source: Own work

This is why we have conducted a separate quantitative analysis of the changes affecting national economy entities narrowed down to those whose main activity profile falls into section R (culture, entertainment and recreation), division 93 (sports, entertainment and recreation activity) and the following PKD sub-classes in particular: 93.11.Z - sports objects; 93.12.Z - sports clubs; 93.13.Z - objects supporting physical condition improvement; 93.19.Z - remaining sports activity as well as (except for 93.21.Z - funfairs and amusement parks): 93.29.Z - remaining entertainment and recreation activity

<sup>7</sup> The available metadata of the Local Data Bank of the Central Statistical Office allowed us to identify 52,550 national economy entities whose main economic activity was marked in 2017 with a code from section R, division 93 of PKD. This is 26% more than the population of those entities registered in the National Business Registry in 2010 (43,090). It proves a higher change rate in this division of section R in comparison with quantitative changes observed in parallel time in the population of national economy entities included in the whole section R (+17%; i.e. 67,085 entities in total registered in section R in 2010 vs 78,489 of those registered in the section in 2017).

In our opinion, all of the factors that illustrate the social changes affecting the Polish SRS market participants (except for the last one in Table 3) indicate prospects for further growth. It should be reflected in the growing awareness of the importance of an active and healthy lifestyle that can be stimulated by, among others, promotion of proactive attitudes in social media. The factors analyzed in this sphere are, however, correlated with economic factors, i.e. consumers' tendency to allot an increasing amount of their available income to sports and recreation (including also broadly defined touristic services).

## TECHNOLOGICAL CONDITIONS ON THE POLISH SPORTS AND RECREATION MARKET

The last group of factors that decide on the sports and recreation market in Poland we have analyzed includes technological factors. Just as in the case of social conditions, we believe that this sphere will demonstrate a relatively high change rate in the following years as well. It is, of course, difficult to clearly identify the direction of those changes because – just as in any other field of economy – research and development processes oriented at innovation and new technologies in SRS entail trade secrets, but taking into account consumers' increasing focus on SRS products and services, we should definitely expect further responses from producers operating in the sector. Among others, it is related to the shortening life cycle of such products and services, including also training programs, physical recreation forms, new tourist services and products (the so-called lifting of products and services that stimulates consumer behavior on the market).

Table 4. A matrix of weighted scores of changes of technological conditions influencing the SRS model in Poland: 2000-2030

No.	SOCIAL (SOCIO-CULTURAL) FACTORS affecting the sports and recreation market in Poland	Weight	a Score (from -5 to +5)				
				b Weighted score (a product of weight and score)			
				2000	2010	2020	2030
1a	Access to (public and private) sports, recreation and tourist infrastructure. Creating and modernizing the infrastructure.	30%	a	1.00	2.50	3.50	3.00
1b			b	0.30	0.75	1.05	0.90
2a	Development of technologies in sports: measuring activity and fitness, statistics and measuring effort in a given period, all of which is supported by development and implementation of GPS at an amateur level.	25%	a	2.00	2.50	3.00	3.50
2b			b	0.50	0.63	0.75	0.88
3a	Rate of changes, introduction of innovations in sports and recreation: shortening life cycle of products and services, including training programs, physical recreation forms, new tourist services and products (the so-called lifting of products and services that stimulates consumer behavior on the market).	20%	a	2.00	2.00	2.50	3.00
3b			b	0.40	0.40	0.50	0.60
4a	Access to new technologies (from an international perspective).	15%	a	2.00	2.25	2.50	2.75
4b			b	0.30	0.34	0.38	0.41
5a	Access to information resources, scientific texts, international journals, electronic courses, workshops etc.	10%	a	2.00	2.50	3.00	4.00
5b			b	0.20	0.25	0.30	0.40
SUM		100%	-	1.70	2.36	2.98	3.19

Source: Own work

Innovation is nothing new to sports but represents everything that is “new” and adopted to facilitate competitive advantage. In the context of sports, innovations that solve an initially defined problem or that meet specific needs are of crucial importance for the development of sports and maximization of achievements of both people and organizations. Progress in sports technology is part of the developing sports and recreation sphere, and at an individual level, technological innovations change the way in which we practice and approach sports. What we refer to is the model of programmed innovations in sports aimed at reaching the level of an elite sport, including especially team sport. Using qualitative analysis, we examine attitudes of such key stakeholders [4] as sports managers, coaches, trainers, sportspeople and scientific researchers and engineers to identify the needs for technological innovations. The results show consistently growing crucial possibilities for technological innovations in the context of research and commercialization [9].

## CONCLUSIONS

In the article, we have synthesized changes to the sports and recreation sphere in Poland in 2000–2030 on the basis of weighted legal, economic, social and technological factors. Figure 2 shows a visual representation of the tendencies taking place in each subject of our analysis.

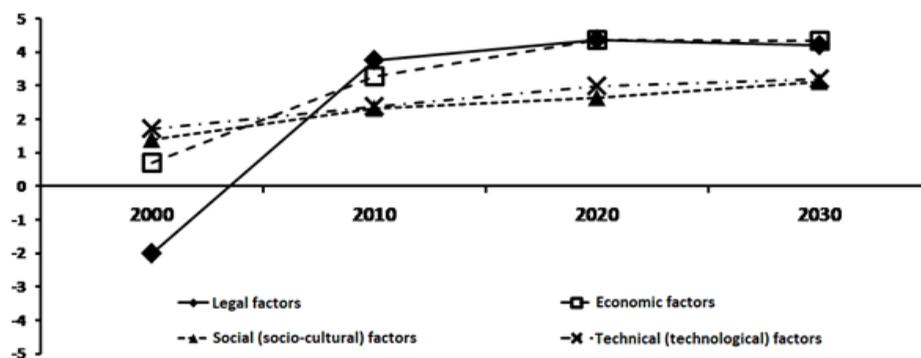


Fig. 2. Synthetic evaluation of changes in the weighted factors of PEST analysis in the Polish sports and recreation sphere in 2000–2030

Source: Own work

Except for the legal ones, all of the changes in the SRS display a tendency of almost linear growth. It does not have to mean, however, that such regularity will occur in the next years as well. With the sports and recreation sector being quite mature, we can rather expect those trends to stabilize, but relying solely on quantitative analysis and defining the forecast for its future shape, we have prepared a prospect of its further development using a trend based on logarithmic regression ( $R^2 = 92.39\%$  of correlation between theoretical values and empirical data resulting from the PEST analysis in 2000–2030) and linear regression ( $R^2 = 87.45\%$ ). The coefficient of determination  $R^2$  in both forecasting methods indicates potential maturity and slowdown in the further development of the SRS, all the more so because the coefficient of determination  $R^2$  of the logarithmic regression shows a higher level of correlation than in the case of the linear regression. Figure 3 shows the growth gap possible for the sector in question up until 2050. It should be treated rather symbolically, as a direction of strategic and prospective changes in the sector not as a reliable growth level the SRS can achieve in the future.

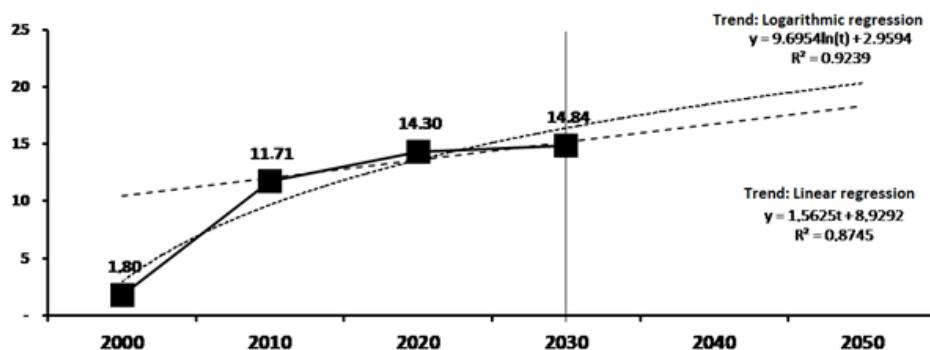


Fig. 3. Forecast growth direction of the sports and recreation sector in Poland in 2030-2050 based on synthetic evaluation of weighted PEST analysis factors in 2000-2030

Source: Own work

## REFERENCES

- [1] Antonowicz A, Antonowicz P. Jakościowe metody ekonomicznej analizy otoczenia dalszego w projektach inwestycyjnych - ramowy układ sił i ocena atrakcyjności sektora [Qualitative methods in the economic analysis of the macro environment of investment projects. Distribution of forces and evaluation of the sector's attractiveness]. In: Sadowska J, Chmielewski M, editors. Zarządzanie projektami - wybrane aspekty [Project management. Selected problems]. Gdańsk: Uniwersytet Gdański; 2014. Polish.
- [2] EUR-LEX – Access to European Union Law. [Available at <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:C:2010:083:FULL>].
- [3] Jedel J, Fal A. Ekonomiczno-prawne aspekty funkcjonowania sportu [Economic and legal aspects of sports functioning]. Gdańsk: AWFIS; 2018. Polish.
- [4] Jedel J, Kończak J. Rynek sportu i sponsoringu sportowego w Polsce [Sports and sports sponsorship market in Poland]. Gdańsk: AWFIS; 2018. Polish.
- [5] Johnson G, Scholes K. Exploring Corporate Strategy. London: Prentice Hall Europe; 1999.
- [6] Lisiński M. Metody planowania strategicznego [Strategic planning methodology]. Warsaw: PWE; 2004. Polish.
- [7] Maslow AH. Motywacja i osobowość [Motivation and personality]. Warsaw: PAX; 1990. Polish.
- [8] Penc-Pietrzak I. Analiza strategiczna w zarządzaniu firmą. Koncepcja i stosowanie [Strategic analysis in corporate management. Concept and use]. Warsaw: C.H. Beck; 2003. Polish.
- [9] Ringuet-Riot C, Hahn A, James D. A Structured approach for technology innovation in sport. Sport Technol J. 2014;6(3):137-149.
- [10] Rozporządzenie Rady Ministrów z dnia 24 grudnia 2007 r. w sprawie Polskiej Klasyfikacji Działalności (PKD) [Regulation of the Council of Ministers of 24 December 2007 on the Polish Classification of Activities (PKD)]. Polish Journal of Laws Dz.U. 2007, No. 251, item 1885. Polish.
- [11] Singh Bal B, Dureja G. Hawk eye: A logical innovative technology use in sports for effective decision making. Sport Sci Rev. 2014;21(1-2):107-119.
- [12] Sznajder A. Charakterystyka rynku sportu profesjonalnego [Professional sports market. Characteristics]. Gospodarka Narodowa. 2007;10:45-65. Polish.
- [13] Ustawa z dnia 2 lipca 2004 r. o swobodzie działalności gospodarczej [Act on Freedom of Economic Activities of 2 July 2004]. Polish Journal of Laws Dz.U. 2004, No. 173, item 1807. Polish.
- [14] Ustawa z dnia 25 czerwca 2010 r. o sporcie [Act on Sport of 25 June 2010]. Polish Journal of Laws Dz.U. 2010, No. 127, item 857. Polish.
- [15] Ustawa z dnia 6 marca 2018 r. - Prawo przedsiębiorców [Entrepreneurs Law of 6 March 2018]. Polish Journal of Laws Dz.U. 2018, item 646. Polish.

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