

**University of West Hungary
Faculty of Economics**

**István Széchenyi Management and Organisation Sciences
Doctoral School**

**RESEARCH OF THE HUNGARIAN HOUSEHOLDS' SPORT
CONSUMPTION FROM ECONOMIC ASPECT**

Thesis of Doctoral (PhD) Dissertation

Author:
Dávid Paár

Supervisor:
Zsombor Ligeti PhD

**Sopron
2013**

Doctoral School: István Széchenyi Management and Organisation Sciences Doctoral School

Head of Doctoral School: Prof. Csaba Székely DSc

Programme: Public Economy Subprogramme

Head of Programme: habil. Zsolt Gilányi PhD

Supervisor: Zsombor Ligeti PhD

.....
Supporting Signature of Supervisor

1 Antecedents of the Thesis and Set Aims

Sport economic researches have more and more popularity all around the world, the sport market is a recognized segment in the national economy of countries with a long range market economy history. This could be the reason why it became a popular research field, a fact which is supported by the growing number of publications and journals. However, the Hungarian sport sector still has a lot of properties based on the socialist era. An effective sport life and a well working sport market are unimaginable without getting rid of these properties. A changing approach of market actors is necessary in the future. Domestic sport economic researches can help this process, however they still have a narrow spectrum. The present study wants to target a newer segment of these researches.

The dissertation focuses on residential sport consumption using a microeconomic approach with a special view of the structure and temporal changes in the Hungarian households' budget.

It is becoming more and more accepted by the decision makers, that sport and active lifestyle is a suitable tool for improving both quality of life and living standard. It is able to produce national economic utilities too. This is supported by the fact that sport is treated like a strategic sector in the political field as well and it has an important long term switch from the status of a sport nation into a sporting nation.

Based on literature the author reveals the relationship between living standard and sport using the basic sport economic datas. The paper discusses the influencing elements of sport consumptions and the known research results focusing primarily on the Hungarian sociological findings.

The setting up of hypotheses is based on the review of literature and the author formulates triplet goals:

- The paper wants to analyse the temporal changes in the Hungarian population's sport consumption with a special focus on the effects of prices and income situation.
- The author wants to find out the relationship between the Hungarian and the European living standards – with a special focus on sport expenditures and positive externalities of sport. It was an important question whether there are any homogeneous groups of countries based on cultural and historical traditions around Europe or not.
- Using a panel analysis the dissertation examines the possibility of classifying household types on the basis of the differences in sport expenditures. The author wants

to find out the variance of change in presence of sport expenditures in households' budget between the households' types and wants to know which of them has a higher absolute value in sport expenditures.

The main goal of these researches is to get concrete, detailed results for professionals and potential political decision makers and enable them to make valid decisions related with one of the most important actors in the sport market. Another goal is to open a new direction of research which makes it possible to recognize the customs of Hungarian households' sport consumption.

1.2 Hypotheses of the Research

The temporal changes and differences between households in sport consumption are analysed with three different methods. The hypotheses have been formulated based on the relevant literature.

H1a: The tendency of Hungarian sport consumption followed the falling and the growing of living standards after the transition. This means a drop and a growing tendency in the households' sport consumption, but the newest trend is a drop again because of the world economic crisis.

H1b: Sport in Hungary is a normal good in microeconomic sense, which means a 1% growth in sport expenditures parallel with a 1% growth of income level.

H1c: Sport in Hungary is a good with -1% price elasticity, which means a 1% increase in sport expenditures parallel with a 1% decrease of price level.

H2a: Expenditures related to sport consumption show a growing tendency parallel with the improvement of economic development and that of living standards all around Europe.

H2b: There are typical differences between European countries because of different cultural and historical traditions. (e.g. There are different properties around the Scandinavian, the West-European and the Mediterranean countries.)

H3a: Urban lifestyle, urban social structure and better sport supply in bigger settlements have a positive effect on the *presence* of sport expenditures in the households' budget.

H3b: Number of supported children in the households has a positive relationship with the *presence* of sport expenditures in the households' budget.

H3c: Presence of sport expenditures shows regional differences. Transdanubian and Central Hungarian regions' households spend with a higher *possibility* for sport, than households in the Plain regions.

H3d: *Possibility* of sport expenditures has a reversed relationship with increasing of the households' heads' age group.

H3e: Raising educational level has a positive effect on the *presence* of sport expenditures in the households' budget.

H3f: Households with a man head spend with a higher *possibility* for sport than the households with a woman head.

H3g: Improving of net income situation increases the *possibility* of sport expenditures' presence in the households' budget.

H3h: Urban lifestyle, urban social structure and better sport supply in bigger settlements have a positive effect on the *measure* of sport expenditures in the households' budget.

H3i: Number of supported children in the households has a positive relationship with the *measure* of sport expenditures in the households' budget.

H3j: *Measure* of sport expenditures has a reversed relationship with the increasing of the households' head' age group.

H3k: Raising educational level has a positive effect on the *measure* of sport expenditures in the households' budget.

H3i: Households with a man head spend *more for sport* than the households with a woman head.

H3m: Improving of net income situation increases the *measure* of sport expenditures' presence in the households' budget.

2 Content, Methodology and Justification of Research

2.1 Applied Methodology

Three different methods were used based on three different topics of the dissertation.

The author used a *regression modelling* for trend analysis to examine the tendency of Hungarian households' income situation and sport consumption. The software GRETL 1.9.9. was used for this purpose. The cubic equation showed the best correlation in the case of both trend analyses.

$$y_t = \beta_1 + \beta_2 t + \beta_3 t^2 + \beta_4 t^3 + u_t \quad (1)$$

where:

y is the dependent variable;

β 's are the coefficients of time factor;

t, t^2 and t^3 are the linear, quadratic and cubic elements of equation.

These data were completed with the data of relative price level of sport consumption i.e. with the quotient of sport consumption price index and that of total consumption price index. After that the effects of changes in income and price level on the logarithmized sport expenditure were summarized in a regression model of the demand on sport consumption. Price and income elasticity of sport consumption were also calculated from the model.

Cluster analysis was used for the second theme with the software SPSS 14.0. First the variables were standardized, and then checked with correlation calculus to establish whether they should be used in the analysis. After filtering the outliers the first clusters of countries were created using squared Euclidean distance based on the following equation:

$$D(R, P + Q) = \frac{1}{(NR + NP + NQ)} \times \{(NR + NP) \times D(R, P) + (NR + NQ) \times D(R, Q) - NR \times D(P, Q)\} \quad (2)$$

where:

NR the number of observed unites in cluster R;

NP the number of observed unites in cluster P;

NQ the number of observed unites in cluster Q.

Final clusters were fined with the non-hierarchical K-means method.

Several similar processes of clustering were made with this method but with different sets of variables. These processes were summarized in an integrated clustering method. This integrated model helped to draw the final conclusions. A cluster can be considered more favourable when:

- the values of the following variables were higher: recreational and sport services; equipments of sport, camping and outdoor activities; average consumption;
- the value of Gini coefficient was lower;
- the value of expected lifetime at birth was better.

Heckit regression model was used to analyse the third field of research.

First of all the possibility of sport expenditures' presence in households' budget was calculated with the help of a selectivity equation. This meant the usage of a Probit model assuming the existence of a latent regression model.

The latent regression has to model the change in utility of a person who has to choose between two alternatives (to spend on sport [$y_i = 1$] or not to spend on it [$y_i = 0$]) The person takes into consideration both alternatives (it is U^a at $y_i = 1$ and U^b at $y_i = 0$) and decides depending on possible utilities. He will spend on sports if $U^a > U^b$ and he will not spend on sports if $U^a < U^b$. These perceptions of utility are not observable so they are called a latent variable (y_i^*). Only the binary result of decision is observable which means that $y_i = 1$ if he spends on sport and $y_i = 0$ if he does not.

Only the data of households with sport expenditures were used in the second stage of the Heckit model (this was the quantity equation). The measure of these values was modelled in this second stage. Further estimations were made only on this selected sample and Mill's inverse ratio for all units was also added to the estimator function too.

$$w_i = \begin{cases} w_i^*, & \text{ha } y_i^* > 0 \\ 0, & \text{ha } y_i^* \leq 0 \end{cases} \quad (3)$$

where w_i is the observed value of estimated expenditures.

The marginal effects could be estimated after running the two stages of the Heckit model. These marginal values made it possible to interpret the differences between the categories of households and to decide the potential change in presence possibility and the magnitude of sport expenditures in case a household moved into a different category.

A Logit model was calculated parallel with the Heckit model. The latter differs only in the specification of its error term so it showed similar results. However, this type of model made it possible to calculate the probability quotients showing the probability of sport expenditures' presence in the different household categories compared to the reference category.

2.2 Databases Used in the Research

Household Budget Survey (HBS) made by the Hungarian Central Statistical Office (HCSO) was used by the author to run regression trends and the demand model of sport consumption.

Data for the period 1992-2010 were used in aggregated form in the trend analysis and the data of the year 2008 gave the basis for using the Heckit model in the panel analysis. HBS is representative for Hungarian households from the following aspects: regional situation; type of settlement; age, sex, educational level and economic activity of the household's head.

The consumptional structure of households is categorized by the internationally accepted COICOP (Classification of Individual Consumption according to Purpose) nomenclature, the following elements of which were used in the research. (Table 1)

Table 1: Types of Sport Expenditures Used in the Research with their COICOP Codes

COICOP-code	Type of expenditure
9	Free time and culture
92	Durable goods for other free time and cultural activities
921	Durable goods for outdoor free time activities
92110	<i>Durable goods for sport and camping activities</i>
92311	<i>Pieces of durable sport goods and musical instruments</i>
92312	<i>Reparation of durable sport goods and musical instruments</i>
93	Games, hobby and sport goods, gardening, pets
932	Sport equipments, camping goods and other equipments for outdoor free time activities
93210	<i>Equipments of sport and camping activities</i>
94	Services of free time and cultural activities
941	Services of sport and free time activities
94111	<i>Sport events, entrance fees</i>
94112	<i>Sport, music and dancing courses</i>
94113	<i>Other free time services</i>

Source: homepage of HCSO

Some of the explanatory variables were converted into new variables in order to be able to use a smaller number of categories, and improve the significance level of the analysis. The explanatory variables were the following: age, sex, educational level and economic activity of the household's head, number of children under 20 in the households, region and settlement of the household and net income.

Data of cluster analysis were given by a Eurostat database collected from the member states of the EU – excepting Germany –, the pledge states and Norway in 2005. 2005 was the last year when the expenditure structure of European households was surveyed uniformly and all of the included variables were available. The properties of the European HBS are the same as those of the formerly introduced Hungarian HBS's. The following variables were included in the cluster analysis: average summarized consumption expenditures, expenditures of recreation and sport services, expenditures of sport, camping and outdoor activities, Gini coefficient and life expectancy.

3 Results

One of the most important results of the dissertation – besides the results obtained from the models – is the detailed description of the Heckit-model, since earlier this model was not thoroughly discussed in the Hungarian literature. Not only the deduction of the model was described but the possible calculated marginal effects as well.

The results like to the hypotheses are presented in three main groups.

T1a: The Hungarian households' sport consumption is moving together with the trend of net income in the period of 1992-2010. The falling living standards resulted in a decrease in sport expenditures after the transition. There was an increase in sport expenditures after the improvement of living standards. Both of the trends changed into a decrease at the end of the observed period because of the world economic crisis. Fluctuations in the two trends are different from each other. Net income shows a bigger fluctuation than sport expenditures.

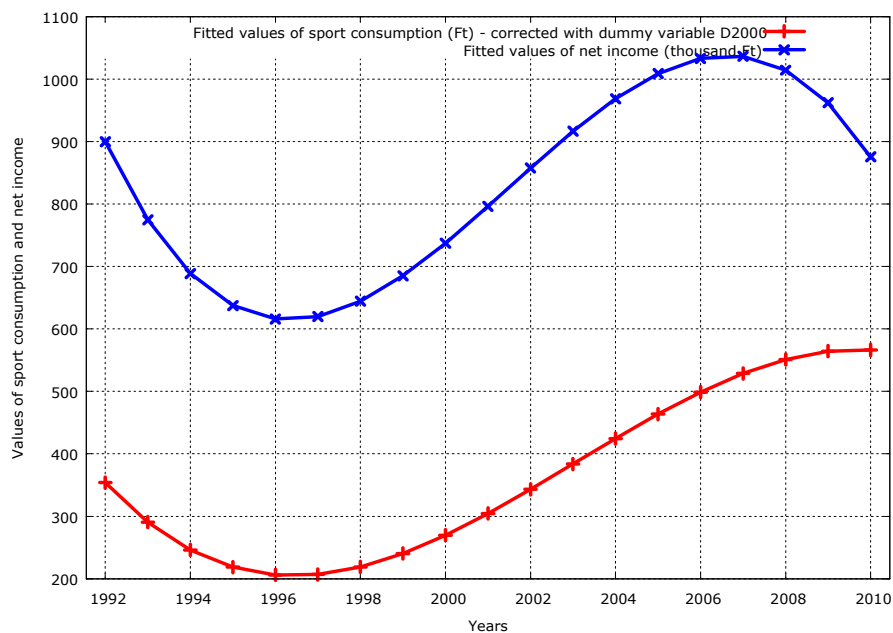


Figure 1: Trends of Real Sport Consumption and Net Real Income
Source: own source

T1b-c: Values of sport consumption are both income and price elastic. We can speak of a double elasticity in case of the incomes, which means a 2% increase in sport expenditures caused by a 1% increase in income. This supported the nature of sport consumption as a luxury good so we can say that sport consumption can not be regarded as means of sustenance. Price elasticity of sport expenditures is 2.2 with a negative sign which means a

reversed effect of price on sport consumption, and a 1% increase in price level produces a 2.2% decrease in sport expenditures.

T2a: Population of countries with higher average consumptional expenditures spend more for sports than the population of countries with lower average consumptional expenditures. Increase in income inequality produces a decrease in sport expenditures despite the growing average expenditures. This could be the reason of lower sport expenditures among countries belonging to the second cluster compared to the first cluster. These two tendencies could lead to the fact that sport expenditures are higher in the third cluster's countries compared to the fourth cluster, however, the third cluster's Gini coefficient is higher than that of the fourth. The third tendency is that life expectancy is better in countries where people spend more on sports.

T2b: Common historical roots and culultural traditions have an important role in the measure of sport consumption. The Scandinavian countries – which are the most favourable group –, the former socialist countries – which are the most unfavourable group – and the West European countries with a long capitalist past can be regarded as a coherent group of countries. The Mediterranean countries have a lot of similar properties too, however, some of them belong to the bottom of second cluster and the other half of them belong to the top of the third cluster.

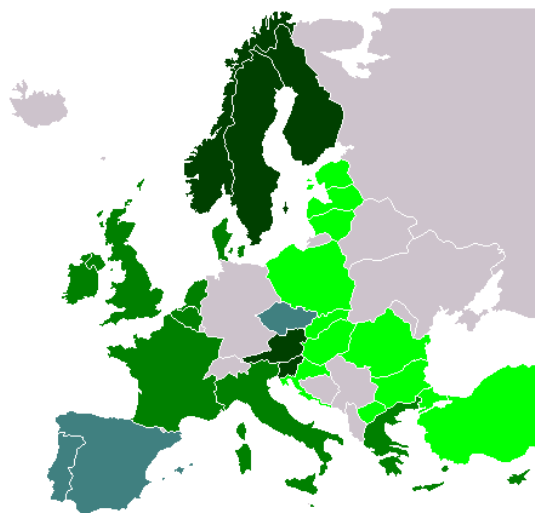


Figure 2: Groups of Countries Based on the Integrated Clustering Method

Source: own source

T3a-h: The possibility of aggregated sport expenditures' and sport, music, dance course expenditures' presence in households' budget and the measure of them increase with the growing degree of urbanisation. Sport and camping equipments' presence possibility and

measure is the highest in Budapest households. The same indicators are higher in the case of county seats' households than for households in other cities and villages.

T3b-i: Growing number of children under 20 in households produces a higher presence possibility in aggregated expenditures, expenditures of sport and camping equipments and sport, music and dance courses' expenditures. However, it has no influence on the measure of expenditures.

T3c: Households in the Central Transdanubian region have the highest possibility in aggregated sport expenditures. These households and households in the West Transdanubian region have the highest possibility value in sport and camping equipments. Possibility value is the highest at sport events' and entry fees' expenditures in the latter region too. Households in West Transdanubian and North Hungarian regions spend with a lower possibility for sport, music and dance courses than others.

T3d-j: There is a life-cycle adequate fluctuation in the presence possibility of aggregated and sport, music and dance courses' expenditures. This means that the youngest age-group spends on sports with the highest probability then a fall back is observable in the next age-group. An increase is observable in the third age-group, however it means a lower possibility compared to the youngest group. The lowest possibility of expenditures can be observed in the oldest age-groups. There is a similar fluctuation of sport and camping equipments' expenditures in the Logit model but we can find a permanent growth in possibilities until the age-group of 35-44. There is a reversed proportion between age and possibilities at the sport events' and fees' expenditures but it is significant only for the first three age-groups.

The effect of life-cycle changes the linearity in the measure of aggregated sport expenditures too. The youngest age-category spend the most for sport and camping equipments. The expenditures for sport, music and dance courses decrease permanently among the age-groups older than 35 years.

T3e-k: Improvement of educational level increases the presence possibility in all categories of expenditures. This statement is also true for the measure of aggregated, sport, music and dance courses' expenditures. In the case of sport and camping equipments' expenditures this statement is true only for the highest educational level.

T3f-l: There is no significant difference between the presence possibility and measure of household with man or woman head in all of the expenditure categories. The only exception is the category of sport and camping equipments because households with man head have a higher spending possibility here.

T3g-m: Improvement of households' income situation also results in an increase in presence possibility and measure in all expenditure categories. It is only in the category of sport events and fees that the second part of this statement is not true.

4 Conclusions, Suggestions

The tendency of Hungarian households' sport consumption was researched by a longitudinal and a panel analysis in the dissertation. Both methods verified that income situation has a determining role for the presence possibility and the measure of sport expenditures. It has to be underlined that the tendency of sport expenditures and the tendency of doing sport activities – both active and passive participation – are not the same. However both of them have the same determining factors thus both can be used to draw conclusions about the tendencies of sport consumption.

We can suppose that the present economic crisis has an unfavourable effect on the households' sport consumption and the deterioration of income situation predicts a narrowing demand on sport markets. This could also have an unfavourable effect on the Hungarian population's health status in the long run. This could also lead to a possible narrowing supply caused by narrowing demand, a tendency which was observed in the last decades. All these factors could result in a self-inducing process, that less and less people could reach a wide range of sport services and the positive attitudes for sport activities could not evolve or only to a small extent. The present effort of the government to make children do sports during PE lessons in schools every day could be a great help. However, successful realisation of this effort seems to be a little bit problematic because of the unsatisfying infrastructure.

The statement of the dissertation concerning income elasticity – namely, that sport consumption is a luxury good – is in accordance with the economic principle, that as a result of income increase people reduce their work supply and work time and parallel with this they increase their free time which they can allocate on sport activities. Luxury goods are not luxury goods at all level of income situation. If the income of a person reaches a certain level, the consumption structure could be changed and the former luxury good becomes a normal or an inferior good.

The present situation when people handle sport as a luxury good is not favourable. It would be much more desirable from the medical aspect if sport would be a means of sustenance in the mind of people.

Based on the sport consumption model, negative income tendency could be compensated by a relative decrease of sport goods' price level, however, this in it self could not be enough for a quick change. It should be the task of sport policy to create incentives which could help sport consumers to reach sport goods and services much easier. (e.g. value added tax reduction)

Tax reduction would not be unprecedented in sport policy because the change in corporate tax rules meant a huge broadening of resources. However, this channelled money from the corporate sphere – at the cost of state income – and not from the household sector.

Income and prices have the most important effects on the tendency of sport consumption in a short term. However, as the sport consumption models show a lot of other factors have an influence on the consumer's preferences but these factors can be changed only in a longer term.

Based on the panel analysis consumer groups can be identified which can be targeted by the corporate sector to reach higher profit. Other groups can also be identified which need incentives for a more active sport relevance.

The consumer groups living in a more urbanized settlement have a better average situation because of the better sport supply and different life style. But sedentary lifestyle typical in these settlements calls for much more physical activities in free time.

Households with children have much more presence possibility of sport expenditures but their measure is not yet favourable, the reason of which could be the permanently growing expenses of educating children. However, developing positive attitudes for sport is very important from the point of view of future generations.

Age specialities are also determinants of sport expenditures' tendency. Although willingness of younger age groups is higher it is worthwhile to focus on the older age-groups as well. Their attitudes are much more difficult to change because of their age but it was recognized in the Western countries, that older groups' quality of life can be considerably improved by adequate sport supply.

Better educated people can afford the luxury of sport because of their better income situation and they are able to recognize its positive private externalities too. The incentive sport programmes could reach a wider range of this group, however, the undereducated groups should not be neglected either because of their disadvantageous situation.

The research was unable to disclose sexual or regional differences between the households so no overall statements can be formulated.

Hungarian sport consumption was placed into a wider context with the cluster analysis. Countries of the fourth cluster in East and Central Europe – including Hungary – belong to countries with a high rate of physical inactivity measured by Eurobarometer (2010), a tendency which was verified by the present research as well.

The created clusters imply that countries with better living standards and better economic status give more attention to free time sport activities. This suggests a typical approach among

the people of these countries, – a strong element that can be modified only during several generations. Traditionally Hungary has a culture in which active sport does not belong to the everyday life rather people prefer passive activities.

4.2 Possible Future Researches

In the future this research should be expanded with additional variables (e.g. quality of sport supply, attitudes of consumers, socialisational properties, and social status) which have been used in foreign researches. The present Hungarian databases however, do not contain these variables or they contain them only partially. A new database should be created in the future which could contain not only the sport expenditures after COICOP nomenclature but much more detailed expenditures using the present research's methodology and statements as well. More exact analyses could be performed for both active and passive elements of sport consumption.

This research could be extended into a macroeconomic direction in order to calculate the investments needed for the improvement of the Hungarian people's sport consumptional attitudes. Such investments have a longterm character like the majority of investments into human capital.

The author of this dissertation would like to follow this line in his future researches.

5 Publications Linked to Dissertation

Articles and Studies in Hungarian Published in Journals:

1. ÁCS P. – PAÁR D. – HÉCZ R. M. – STOCKER M. (2011): A fittség (m)értéke – A fizikai inaktivitás nemzetgazdasági terhei Magyarországon. *Közgazdasági Szemle*, 58. (7-8) 689-708. p.
2. PAÁR D. (2011): A sport általi egészségfejlesztés gazdasági jelentősége. *Egészségfejlesztés*, 52. (1-2) 31-37. p.
3. PAÁR D. (2011): Az európai országok sportfogyasztásának és életminőségének összefüggései. *Gazdaság és Társadalom*, 3. (3-4) 128-146. p.

Articles and Studies in Foreign Languages Published in Journals:

1. PAÁR D. – ÁCS P. – HÉCZ R. M. – STOCKER M. (2011): Economic Burdens of Physical Inactivity in Hungary. *Studia Sportiva*, 5. (3) 357-361 p.
2. PAÁR D. – ÁCS P. – HÉCZ R. M. – STOCKER M. (2011): Research of Economic Burdens Linked to Physical Inactivity. *Regional and Business Studies*, 3. (1) 307-318. p.
3. PAÁR D. (2011): The Income and Price Dependency of the Hungarian Sport Goods Consumption. *Periodica Polytechnica Social and Management Sciences*, 19. (1) 11-17. p.

Articles and Studies in Hungarian Published in Edited Conference Books:

1. ÁCS P. – PAÁR D. – HÉCZ R. M. – STOCKER M. (2010): A fizikai inaktivitás csökkentésével (testmozgással) az egészségi állapot nemzetgazdasági szinten történő megtérüléseinek vizsgálata 71-78. p. *Sportszakember-továbbképzési konferenciasorozat II.*, Budapest, Nemzeti Sportszövetség 128 p.
2. ÁCS P. – PAÁR D. – HÉCZ R. M. – STOCKER M. (2011): Az inaktív életmód, mint gazdasági tényező, *Sportinnovációs Szakkönyv*, 21-32. p., Budapest, Magyar Sporttudományi Társaság Sportinnovációs Szakbizottság 100 p.
3. ÁCS P. – PAÁR D. – HÉCZ R. M. – STOCKER M. (2012): A metabolikus betegségek és a fizikai inaktivitás pénzügyi terhei és megtakarítási lehetőségei az Országos Egészségbiztosítási Pénztár költségvetésében. 160-178. p. In.: SZÓTS G. (szerk.): *A fittség mértéke mint a megbetegedések rizikóját befolyásoló tényező.*, Budapest, Akadémiai Kiadó. 178 p.

4. ÁCS P. – PAÁR D. – STOCKER M. – HÉCZ R. M. (2011): A fizikai inaktivitásból származó gazdasági terhek vizsgálata. 1-13. p. In: ANDRÁSSY A. (szerk.): „*Hitel, Világ, Stádium – Határok nélküli tudomány*” Nemzetközi Tudományos Konferencia tanulmánykötete. Sopron, Nyugat-magyarországi Egyetem Közgazdaságtudományi Kar, CD-kiadvány
5. PAÁR D. (2009): Mit (nem) tudunk a magyar lakosság sportfogyasztási szokásairól? 29-32. p. *Magyar Sporttudományi Társaság Sportinnovációs Szakbizottság Évkönyv 2009*, Budapest, Magyar Sporttudományi Társaság Sportinnovációs Szakbizottság 88 p.
6. PAÁR D. (2009): Versenyképességet romboló fizikai inaktivitás. 13 p. In.: ANDRÁSSY A. (szerk.): „*Innováció, versenyképesség, felzárkózás*” c. Nemzetközi Tudományos Konferencia tanulmánykötete, Sopron, Nyugat-magyarországi Egyetem Közgazdaságtudományi Kar, CD-kiadvány
7. PAÁR D. (2010): A magyar sportfogyasztás dinamikája. 10 p. „*Sportkultúra – hagyomány és megújulás*” VII. Országos Sporttudományi Kongresszus tanulmánykötete. Budapest, Magyar Sporttudományi Társaság, CD-kiadvány
8. PAÁR D. (2010): A rekreációs sportfogyasztás gazdasági hatásai. 108-115. p. „*Fizikai aktivitás és életminőség*” Sporttudományi Konferencia tanulmánykötete. Pécs, Pécsi Tudományegyetem Természettudományi Kar Testnevelés és Sporttudományi Intézet 161 p.
9. PAÁR D. (2011): A jövedelemegyenlőtlenség és a jövedelmi szint hatása az életszínvonalra a sportfogyasztáson keresztül. *Sportinnovációs Szakkönyv*, 57-64. p., Budapest, Magyar Sporttudományi Társaság Sportinnovációs Szakbizottság 57-63. p.
10. PAÁR D. (2011): Költenek-e a magyar háztartások sportra? 85-97. p. In: DRAGÓNER I. – GYÖRFI J. (szerk.): *Sportszakember-továbbképzési konferenciasorozat III.*, Budapest, Nemzeti Sportszövetség 144 p.
11. PAÁR D. (2011): Sportkiadások, mint az életszínvonal és a jólét indikátorai Európában. 7 p. VIII. Országos Sporttudományi Kongresszus tanulmánykötete, Győr, Magyar Sporttudományi Társaság, CD-kiadvány
12. PAÁR D. (2012): A magyar háztartások sportkiadásainak elemzése Heckit-modell segítségével. 298-318. p. In: KERESZTES G. (tech. szerk.): „*Tehetség és kreativitás a tudományban*” Nemzetközi Tudományos Konferencia tanulmánykötete, Sopron, Nyugat-magyarországi Egyetem Közgazdaságtudományi Kar 811 p.

13. PAÁR D. (2012): Sportkiadások jelenléte a magyar háztartások költségvetésében. 1005-1030 p. In: BALÁZS J. (szerk.): *"Változó környezet – Innovatív Stratégiák"* Nemzetközi Tudományos Konferencia tanulmánykötete, Sopron, Nyugat-magyarországi Egyetem Közgazdaságtudományi Kar 1321 p.

Conference Presentations:

1. ÁCS P. – HÉCZ R. M. – STOCKER M. – PAÁR D. (2011): Research of Economic Burdens Linked to Physical Inactivity. *3rd International Conference of Economic Sciences*, Kaposvár, Kaposvár University, 2011. május 20.
2. ÁCS P. – PAÁR D. – HÉCZ R. M. (2011): A metabolikus betegségek és a fizikai inaktivitás pénzügyi terhei és megtakarítási lehetőségei az Országos Egészségbiztosítási Pénztár költségvetésében. *„A fittség mértéke, mint a metabolikus megbetegedések rizikóját befolyásoló tényező” Tudományos Konferencia*, Budapest, Magyar Tudományos Akadémia, 2011. február 23.
3. ÁCS P. – PAÁR D. – STOCKER M. – HÉCZ R. M. (2010): A fizikai inaktivitásból származó gazdasági terhek vizsgálata. *„Hitel, Világ, Stádium – Határok nélküli tudomány” Nemzetközi Tudományos Konferencia*, Sopron, Nyugat-magyarországi Egyetem Közgazdaságtudományi Kar, 2010. november 3.
4. PAÁR D. – ÁCS P. – HÉCZ R. M. – STOCKER M. (2011): Economic Burdens of Physical Inactivity in Hungary. *„Sport & Quality of Life 2011” 8th International Conference*, Brno, Masarykova Univerzita, 2011. november 11.
5. PAÁR D. (2008): A rekreációs sportfogyasztás gazdasági hatásai. *„Fizikai aktivitás és életminőség” Sporttudományi Konferencia*, Pécs, Pécsi Tudományegyetem Természettudományi Kar Testnevelés és Sporttudományi Intézet, 2008. október 10.
6. PAÁR D. (2008): Versenyképességet romboló fizikai inaktivitás. *„Innováció, versenyképesség, felzárkózás – Tudomány az élhető Földért” Nemzetközi Konferencia*, Sopron, Nyugat-magyarországi Egyetem Közgazdaságtudományi Kar, 2008. november 4.
7. PAÁR D. (2009): A magyar sportfogyasztás dinamikája. *„Sportkultúra – hagyomány és megújulás” VII. Országos Sporttudományi Kongresszus*, Budapest, Magyar Sporttudományi Társaság, 2009. május 29.
8. PAÁR D. (2009): A rekreációs sportfogyasztás gazdasági hasznai és a magyar helyzet. *„A sport és a gazdaság időszerű kérdései” kerekasztal-beszélgetés*, Pécs, Pécsi Tudományegyetem Közgazdaságtudományi Kar, 2009. június 9.

9. PAÁR D. (2009): Sportfogyasztás-kereslet Magyarországon. *Sport – Gazdaság – Értékek Szakmai Konferencia*, Budapest, Testnevelés és Sporttudományi Szakmai Kollégium, 2009. június 25.
10. PAÁR D. (2010): Megéri-e sportolni, van-e pénzünk költeni a sportra? „*A sport, mint társadalmi érték*” *Konferencia*, Budapest, Budapesti Corvinus Egyetem, EVK Szakkollégium, 2010. május 13.
11. PAÁR D. (2011): Sportkiadások jelenléte a magyar háztartások költségvetésében. „*Változó környezet – Innovatív stratégiák*” *Nemzetközi Tudományos Konferencia*, Sopron, Nyugat-magyarországi Egyetem Közgazdaságtudományi Kar, 2011. november 2.
12. PAÁR D. (2011): Sportkiadások, mint az életszínvonal és a jólét indikátorai Európában. *VIII. Országos Sporttudományi Kongresszus*, Győr, Magyar Sporttudományi Társaság, 2011. május. 19.
13. PAÁR D. (2012): A magyar háztartások sportkiadásainak elemzése Heckit-modell segítségével. „*Tehetség és kreativitás a tudományban*” *Nemzetközi Tudományos Konferencia*, Sopron, Nyugat-magyarországi Egyetem Közgazdaságtudományi Kar, 2012. május 22.
14. PAÁR D. (2012): Differences in the Hungarian Households’ Sport Expenditures. – *II. Nemzetközi Turizmus és Sportmenedzsment Konferencia*, Debrecen, Debreceni Egyetem Gazdálkodástudományi és Vidékfejlesztési Kar, 2012. szeptember 6.
15. PAÁR D. (2012): Kiké a sport luxusa? *Sportkutatók éjszakája, Innováció a sportban – Sport, Tudás, Tudat a XXI. században Konferencia*, Budapest, Magyar Sporttudományi Társaság, 2012. szeptember 28.
16. PAÁR D. (2012): Sportkiadások háztartástípusonkénti eltérései Magyarországon. *IX. Országos Sporttudományi Kongresszus*, Szeged, Magyar Sporttudományi Társaság, 2012. május 26.

Other Publications:

1. PAÁR D. (2010a): Sportoló nemzet vagyunk? *Teszt plussz Magazin*, Fogyasztói és Betegjogi Érdekvédelmi Szövetség, 2 (10), 17. p.
2. PAÁR D. (2010b): Sportoló nemzet vagyunk? *Teszt plussz Magazin*, Fogyasztói és Betegjogi Érdekvédelmi Szövetség, 2 (11) 16-17. p.