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**SOCIO-DEMOGRAPHIC PATTERNS ON SPORT PARTICIPATION
IN THE EUROPEAN UNION**

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SUMMARY

Studies and statistical analysis done before summarized socio-economic variables affects on sport participation.

There is also a common believe about nationality also influence participants, generating a “geographical stratification” over EU.

By the set analysis of five European countries, we will figure out how socio-demographic variables affects on sport participation in order to understand the gap between them.

Literature review help to establish the main variables and defining what can be considered sport participation.

Once terms are established, descriptive analysis among the countries reveal the main social dissimilarities which can be the cause of the participation levels differences.

Nevertheless, results cannot trust just on descriptive analysis. Statistical models are more efficient and suitable for this kind of investigation. In this case, Logit (a non-lineal regression model) developed by SPSS have been used to understand and interpret the main reasons about what makes people do sport and why there are so much differences between countries.

Statistical results from regression model show negative effect on sport participation: being female; aging; low education levels; low occupational status; low social class; living in rural area and big size of household.

KEY WORDS

- European Union.
- Sport participation.
- Physical activity.
- Geographical stratification.
- Socio-demographic variables.
- Logit.

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1. INTRODUCTION

Sport and physical activity achieves large positive effects on health and thereby, it is a key aspect for nowadays societies.

Historically, participation rates have suffered and enjoyed stagnation, recession and expansion periods, as economic cycles.

Many analysts have been made in order to know and understand what makes people do sport. Finding the facts which influence on do sport or not is essential in order to develop and implement sport policies that encourage an active life over the population.

Besides, Eurobarometer data done by the European Commission (2010) showed clear sport participation difference between the EU countries. This “geographical stratification” has been endorsed by many studies which consider nationality affects directly on population behave toward sport. (Van Tuckyom & Scheerder, 2010). Generally, Northern and Western countries achieve higher participation rates comparing with Southern and Eastern ones. (Bottenburg, 2005).

Nevertheless, many other authors consider country’s gaps are the result of the dissimilarities among the societies. That is, sport participation contrast between countries is the result of the differences in socio-demographic variables as: gender, age, education...

In this project, we will try to verify that theory analyzing socio-demographic variables (such as: gender, education, age, occupation, family composition, social class and degree of urbanization community) and comparing those results between five EU countries (Belgium, Spain, Finland, England and Czech Republic) which show completely unequal sport participation results.

The comparative analysis is made by Logit regression, developing a general model introducing data from the nations together and five extra models (one of each target country).

The results may be taken into account by and used to sport organizations, governments and authorities in order to select the most convenient strategies and policies for increasing the number of sports participants.

2. LITERATURE REVIEW

Until the mid-twentieth century, sport took place almost exclusively in sport clubs. A significant proportion of citizens were members of sport clubs and organizations.

However, throughout the second half of the twentieth century, the way in which people participate on sport changed. Citizens increasingly began to practice sport in a more informal way, spontaneously, by their own and in public places (parks, street, beach...).

The development of the “informal” sport was pushed up by the increased leisure time and economic prosperity in many western countries in the 1960s and 1970s. (Kokolakakis, Lera-López, & Panagouleas, 2011). Sport participation had an intense growth during that period. European campaigns like the “sport for all” also contributed this sport expansion during the two decades.

Nevertheless, studies reveal a stagnation point during the 80s in many European countries (Spain, Belgium, Finland, Portugal and Austria) and even declining rates in others (Italy, the Netherlands or UK). (Bottenburg, 2005).

Substitutive leisure hobbies appeared with the technology advancement: TV, computer games, social media... but instead a recession, it has been a braked growth. (Cushman, Veal, & Zuzanek, 2005).

On the other hand, latest 80's and beginnings of 90's, participation reasons turn from welfare and leisure/enjoy theme to health and self-esteem. Exercise and sport has been increasingly dominated by idealistic notions of fitness and youthfulness. The quest for good health, appearance and a slim and muscular body started to play a greater role in sport participation. This led other sport values and, obviously, ways of prating it: parks, street, gym, fitness-centers...

A sustainable raise on sport participation over the last 10 years are related with this. Older people had more opportunities to keep training in gyms and fitness-centers.

The world of sport has had a significant expansion and diversification over the last decade. In fact, there is a greater variety of sport offer today than some years ago. Fitness, aerobics, and overall extreme sports (surfing, skateboarding, rafting...). This quick and intense emergence of sports made experts to ask themselves;

What is considered as sport?

2.1 Sport definition

“Sport means all forms of physical activity which, through casual or organised participation, aim at expressing or improving physical fitness and mental wellbeing, forming social relationships or obtaining results in competition at all levels”. (Article 2. Council of Europe, 1992).

However, the sport definition offers many different interpretations and points of view. The subjective degree makes sport participation comparisons truly hard to achieve, interpret and measure.

“A comparison between different countries proves to be complicated because the term sport is not clearly defined and the variables sport participation is operationalized differently in different surveys”. (Breuer & Wicker, 2008)

Cross-comparative studies and many other analyses agree with the comparison problem and the weak term definition. (Cushman, Veal, & J.Zuzanek, 1996).

Nevertheless, definition given by EU Council has been used as starting point since term was defined in 1992. All forms of physical activity can be considered as sport, but physical activity lumps many actions. So, any kind of sport activity is considered physical activity. Nevertheless, that does not happen in the other way. Actions like walking, stroll or other kind of physical efforts are not considered sport.

2.1.1 World Health Organization (WHO)

World Health Organization (WHO) defines physical activity as any kind of body movement which consumes human energy working, playing, walking...

Regular physical activity with moderate intensity such as walking, biking or sports-has significant health benefits:

- improves cardio respiratory and muscular fitness;
- improves bone health and functional;
- reduces the risk of hypertension, coronary heart disease, stroke, diabetes, colon and breast cancer and depression.
- reduces the risk of falls and hip or vertebral fractures; and
- is fundamental to energy balance and weight control.

(World Health Organization (WHO), 2014).

Nowadays, passive physical activity is the fourth death's cause in the world and it is also the main reason of many other health concerns (cancer, diabetes...).

It causes 3, 2 millions of deaths yearly, 6% of total, just behind hypertension (13%), tobacco (9%) and carries the same risk that hyperglycemia (6%).

Studies reveal people with no enough physical activity get 20%-30% more death risk than people who do about 30 minutes of physical activity most days a week. (Manzanares, 2014).

Although the risks of being passive are notorious, physical inactivity is getting more common nowadays.

Physical inactivity is positively related with high incomes. 41% of male and 48% of female with high salaries do not achieve enough physical activity.

At the same time, the common use of passive transport (car, bus, train...) also contributes to this negative issue. (World Health Organization (WHO), 2014).

2.2 Reasons people do sport:

Benefits of being active are well defined and most people know doing sports or having an active life improve health.

Although sport has huge positive benefits on our lives, the health is, as well as the result, a reason for being active.

Nevertheless it is not the only reason of doing it. According with the Eurobarometer (2010), respondents had many multiple answers about what makes then doing sports. Being with friends, make acquaintances, meet other cultures are, as well as the "typically" health related reasons, aspects which push people up to do sports.

Motivation theories tried to explain what makes people do sports using psychological approaches. Downward (2007) considered sport participation and the choice of that depends on each individual, his psychological characteristics...

2.3 Socio-economic theories:

2.3.1 Income approach:

Neoclassical theories also tried to explain sport participation and the preferences based on income.

Adams (1966) used the basic demand theory.

Many others: (Gratton & Taylor, 2000), (Breur, Hallmann, Wicker, & Feiler, 2010)... developed an alternative view, the “income leisure off” in which free time is directly related with income and it takes importance on participation.

Neoclassical demand model considers income, prices of other goods and price of sport activity a key factor to explain sport participation rates. In addition, doing sport involves time consumption. Time can be considered as an opportunity cost for all people. Thereby, sport’s spending (buying clothes, trainers...) rises while income goes up. So, being employed is positively related with income and then with sport consumption. However, occupation has a contrary effect on sport participation. Having a job means less free time what reduces the probability of doing sport. Curiously, although participation and consumption are clearly correlated, occupation has opposite effect on them. (Breur, Hallmann, Wicker, & Feiler, 2010).

Nevertheless, neoclassical demand model had many critics. (Gratton & Taylor, 2000) point out this analysis is too restrictive for sport participation studies.

Heterodox economic theories with a wider set are more appropriate for this kind of researches (Downward & Riordan, 2007).

2.3.2 Social approach; Empirical analysis:

First empiric analysis on sport participation was made in EEUU by Adams (1966) and Cicchetti (1969).

These studies showed clearly participation spread depends on geographical and social characteristics.

In order to overcome the complexity of this kind of study, binary logistic regressions have been commonly used in many cases: (Downward & Riordan, 2007), (Tuyckom & Scheerder, 2010)...

Less usual are the ones that try to interpret sport participation depending on the frequency and time dedicated on this activity: (Humphreys & Ruseski, 2007) (Lera-López & Rapún-Gárate, 2007).

Despite of the diverse range of regression models used, almost all analysis had a common conclusion.

Social and geographical determents: age, gender, nationality and even educational level influence in more or less proportion on sport participation:

- Gender: there is a consensus about the fact that males practice more than females. Biological and physiological differences, as many as diverse familiar roles can be the origin of this dissimilarity. (Breuer & Wicker, 2008), (Kokolakakis, Lera-López, & Panagouleas, 2011), (Fairclough, Boddy, Hackett, & Stratton, 2011)...
- Age: also many authors agree about the probability of practicing decreases with ageing. (Moens & Scheerder, 2004), (Breuer, Hallmann, Wicker, & Feiler, 2010)... Nevertheless, a research done in England by Stamatakis & Chaudhury (2008) determined adults get involved in sports more often than some years ago. Results showed an increase on participation trend of middle aged and elderly population.
- Education: studies also affects on sport participation. High educated citizens had more probability to practice. (Breuer & Wicker, 2008), (Downward & Riordan, 2007), (Lechner, 2009)...
- Occupation: another key determinant for participating. Most studies reveal a positive relationship between higher or better paid jobs than lower ones. Nevertheless, commonly those occupations required more time and effort, limiting the leisure time and thereby, sport participation. (Cushman, Veal, & Zuzanek, 2005), (Lechner & Downward, 2013).

2.4. Geographical stratification; do sport depends on nationality?

Numerous studies made before showed a clear difference between the European countries. Rodgers (1977) was the first who analysed the EU similarities and differences.

European participation unbalance has been a common topic. Sport participation declines while we move over the continent from North to South and from West to East. On other words, Nordic and West side countries are more active than Southern and Eastern ones. (Van Tuckyom & Scheerder, 2010).

Mainly, Finland is the most sportive nation while Romania and Greece are two with the lowest participation level. (Eurobarometer, 2010).

Taking into account data from Eurobarometer' survey, European nations can be classified into four groups depending on their sport participation levels. In this case, the frequencies: "regularity" and with "some regularity" have been including into the study. "Seldom and never" has been excluded. The result shows four types of countries:

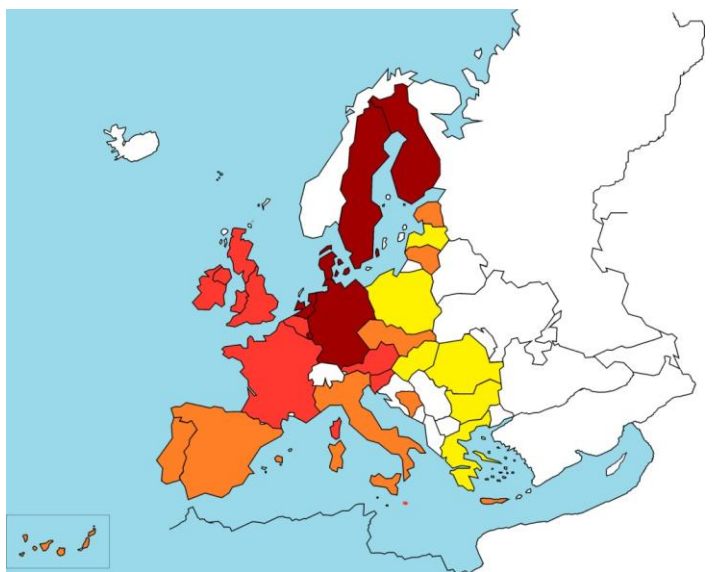
- Dark red: groups those countries whose sport participation is equal or higher than 40%.
- Red: rates between 30% and 39%.
- Orange: between 20% and 29%.
- Yellow: countries with less than 20% rates.

Chart 1. Sport activity with regularity or some regularity (%)

40% or more		30%-39%		20%-29%		29% or less	
Finland	55%	France	35%	Spain	27%	Latvia	19%
Sweden	50%	Belgium	34%	Portugal	24%	Romania	13%
Denmark	49%	UK	32%	Italy	26%	Poland	19%
Netherlands	51%	Austria	33%	Lithuania	22%	Hungry	18%
Luxemburg	40%	Malta	31%	Cyprus	25%	Bulgaria	10%
Germany	40%	Slovenia	39%	Czech Rep.	23%	Greece	15%
		Ireland	35%	Slovakia	25%		
		EU	31%	Estonia	27%		

Eurobarometer data fixes with most of studies. Finland and Nordic countries enjoy the greatest rates. On the other side, Greece and many East nations do not show positive participation levels.

Map agrees with demographic stratification mentioned by Sheerder & Van Tuckyom (2010). According with the “ranking” developed, there is a common spread of Northern and Western countries comparing with Southern and Eastern ones. As we can see, Finland and Sweden, the most upper ones, shows dark colours according with the highest rates. This tone goes down as long as we move



down over the map, to Spain, Italy... Something similar happens from West to East, having Ireland and UK higher participation levels than East countries like Hungary, Romania...

Nevertheless, considering sport participation difference a fact of geographical spread should not be appropriate. Although the map generally fits with this theory, there are some exceptions like Malta or Estonia.

“Due the demographic situation in nowadays societies, physical activity, and sport expenditure as well as socio-economic perspective. This means that determinants such as age, gender, nationality/ethnicity, income, time, educational level, profession and social status have to be taken into account”. (Breur, Hallmann, Wicker, & Feiler, 2010).

In fact, the difference between Northern countries with Southern should be explained by the socio-economic differences of those societies rather than the geographical position by its own.

The continent diversification is the result of the clear differences of their societies. Obviously, those social and economic characteristics match with the theory of geographical spread. Historically, Mediterranean countries have had a different way of living, culture, social habits... comparing with Nordic, as well as Western with Eastern. But those differences are not a result of geographical side; it depends mainly on socio-economic factors.

Kokolakakis, Lera-López, Panagouleas (2011) compared two EU countries (Spain and England) depending on socio-demographic variables. The study summed up higher education level, younger age; professional occupation and being male have a positive effect on sport participation, with no direction difference between Spain and England, despite the contrast of participation level. The strength dissimilarities are the source and reasons of sport participation differences between both nations. This study will be use as a model for this project, extended to more countries in order to display how socio-demographic characteristics affect on each country in order to understand what makes unbalanced participation rates over Europe.

3 EPIGRAPH AND METHODOLOGY

3.1 Project ´ objectives.

In this project, the main socio-demographic determinants from five different EU countries will be studied and analyzed in order to understand how they affect on sport participation. The study will focus on: gender; age; education level; occupation; social class; degree of

urbanization community and size of household in order to discover how these patterns affect on sport participation in each country. Ones effects are detected and interpreted, individualized policies and strategies could be implemented in each nation for the purpose of promoting and spreading sport participation and thereby, trying to reduces geographical stratification explained before.

3.2 Data set. Eurobarometer (2010).

Eurobarometer will be use in this project. It is a survey done by the European Commission in 2010.

This data base was commissioned by the European Commission´s Directorate General for Education and Culture (DG AEC). 26,788 European citizens were interviewed by the TNS Opinion & Social network during two weeks in 2009 in the 27 European Union Member States.

The survey highlights which Member States' citizens do most and least sport, but it also emphasizes on the context in which people exercise, distinguishing places, frequency, reasons of do/do not exercises and socio-economic characteristics of its respondents (education level, difficulties paying bills...).

3.2.1 Sample.

The sample consists of 5.136 interviewed data divided among the five countries.

Despite of the clear differences between the nations, the sample side is quite well distributed.

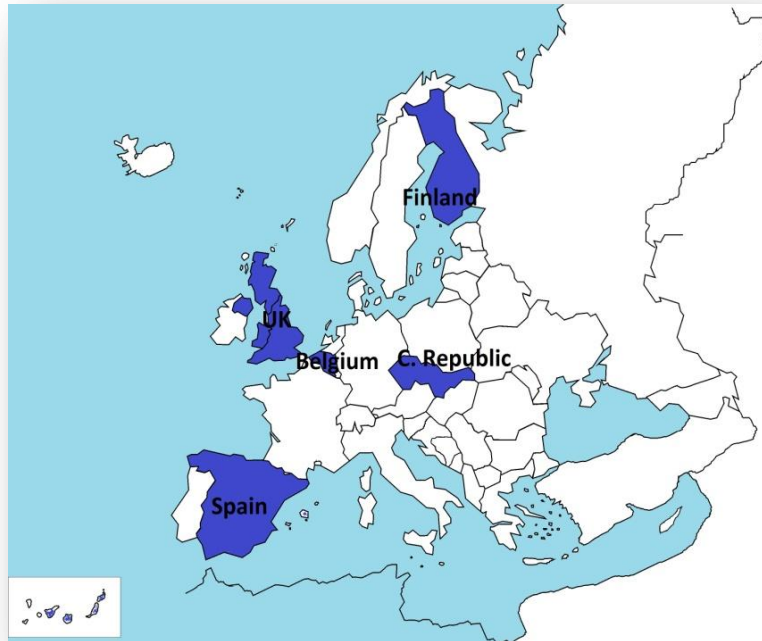
The smallest sample is the Spanish one; N=1001 while the Czech is the biggest; N=1066.

BELGIUM	N	1001
SPAIN	N	1003
FINLAND	N	1017
GREAT BRITAIN	N	1049
CZECH REPUBLIC	N	1066
TOTAL	N	N = 5136

4. EXPLANATORY ANALYSIS OF SPORT PARTICIPATION

4.1 Target countries

In order to make this study more realistic and useful, five countries with quite clear differences (distance, way of living, economic situation, culture...) have been chosen, widening the possible answers and data of the survey. In this way, comparison between totally sport participation' countries held to a greater analysis about demographic stratification.



So, the countries to talk about are:

- **Finland:** the Scandinavian member state. It is the European country with most sport participation rate. These high levels are common in the Nordic countries. Another special characteristic is the gender participation. On average, European men are more active than women, but it does not happen in Finland where sport participation is almost identical in both sexes. Cycling, Cross-country skiing and swimming are the most popular sports but football is the one with more participants in clubs.
- **Belgium:** as western-centered country, Belgium has had an intense sport participation growth over last year's (overall in the Flemish-speaking side). Participation rate is above the European average and there exists a gender difference but not really notorious comparing with other countries. The most practice sports are cycling, swimming and fitness.
- **UK:** this western island has longitudinal data on sport participation because, since 1973, the General Household Survey (GHS) has been conducted among the

population of England, Wales and Scotland about this topic. That did not happen in many countries where the State' concern about sport is relatively new.

The participation levels of UK were above the EU average, with 55% of population practicing exercise at least once a month. (Eurobarometer, 2010).

British participants tend to do sport more intensively than southern but less than northern. UK could be considered as a middle point. The Kingdom shows a clearly social difference: much higher participation rates of large employers and high managements comparing with the lower rates of routine and lower skilled workers.

Cycling and Football are also the most popular sports of the island.

- **Spain:** the unique southern European member of the project. Spain has a quite reliable statistical data on the topic, thanks of the longitudinal research done in 1968 and 1975 by the Centro de Investigación Sociológicas (CIS).

The studies showed a relatively higher participation levels than their neighbors' countries like Portugal but, as happens in all Mediterranean area, Spain is under the EU average. The statistics' results also revealed a quite big difference between men and women, much more clear than in other places.

Swimming, Football and Cycling, as in almost all states, are the most popular sports for the Spaniards.

- **Czech Republic:** a relatively new EU member. With a soviet past, Czech Republic comes from a new country group: the eastern countries. The Czech participation is very low, under the EU average and with large differences with other countries of this project like Finland. The sport participation studies were done over the 90's, much later than in other places. Cycling is the most popular sport practiced and football and tennis enjoyed the greatest popularity as club related. However, the country's sport culture is the ice-hockey.

(Bottenburg, 2005).

4.2 Sport participation and Physical activity:

Comparing the five countries, sport participation frequency is significantly bigger in Finland than in the others (Chart 2 page 18). In fact, it accounts the biggest rate in all Europe followed, as said before, by other Nordic nations.

On the other side, Spain and Czech Republic have the lowest levels.

This quick view matches with the geographical stratification theory mentioned before.

1°. Finland is, with huge gap, the most “sportive” country of the five. The 70% of the population do sport weekly and only 9% never practice it.

2°. Belgium is on the second place. Almost the half (47%) do sport at least ones a week but the 30% do not do any kind of sport.

The data is also good and it overcomes the European sport activity average.

Nevertheless, the difference with Finland is enormous.

3°. United Kingdom is almost equal to Belgium. People who practice sport weekly do it in the same way than in Belgium. However there are more passive cases than in Belgium (36%).

4°. Spain goes down. Only 37% practice sport weekly and the percentage of passive people rises to 43% (the most worrying issue).

The results are concerned, similarly with other Mediterranean countries (Portugal, Italy...).

5°. Czech Republic achieves the lowest participation rate of the study. Despite of having less passive portion than Spain, Czech Republic only has 25% of proper sport active population (weekly participants).

A 40% do not do sport and 26% do it less often.

Thereby, 3 out of 4 Czechs do not have sport habits (practice it weekly), only 8% do it certainly (3 or more times a week) and the 40% never do it.

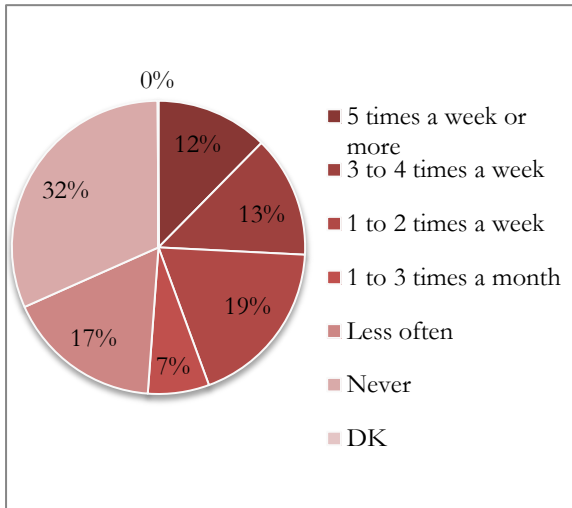
If the Spanish case was negative, the Czech is even worst.

Nevertheless, data shows some changes focusing on physical activity frequency. Physical activity rates show bigger proportion than sport participation. Obviously, it happens in all places because, apart from sport, physical activity involves more actions: walking, strolling, cleaning the house up, going work...

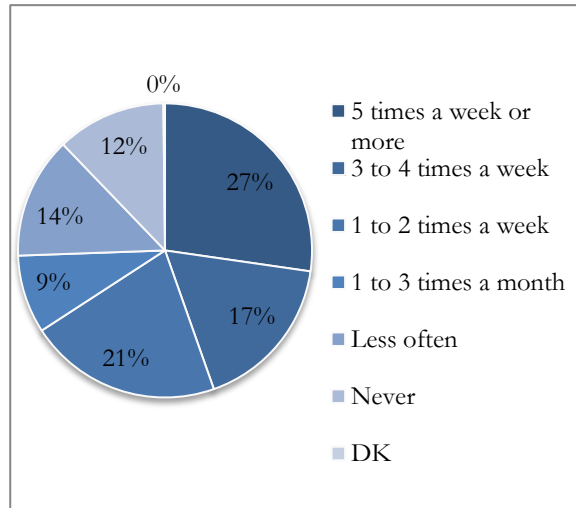
Thereby, the differences are clearly appreciably in our study:

On average (taking into account the survey data of the five countries), just the 44% of people do sport at least ones a week while the 65% of the same respondents do any kind of physical activity weekly. (Graph.1 and Graph.2).

Graph 1. Sport frequency.



Graph 2. Physical Activity Frequency.



These two graphs show the importance of walking and other types of physical activity. Will be a big error considering this variable a type of sport participation because almost all people walk (way to work, school, university...). It is something necessary to us, but practice sport is optional. That is why there are many less people doing it.

Although physical activity achieves higher rates than sport activity in all countries looking at chart 2 (pag.18), we can see these “gains” are significantly different between each nation.

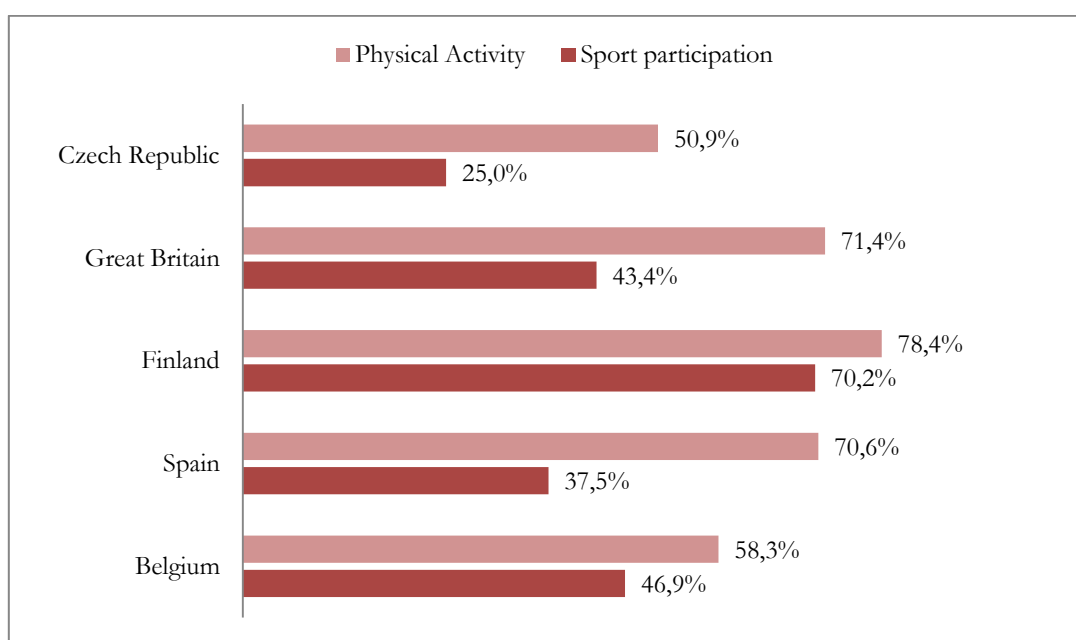
Taking into consideration “being physical active” to those respondents who do it weekly (three first options of the frequency) the order between countries swaps comparing with sport participation. Finland keeps being the most active nation, but it only gains 8% from sport participation. England and surprisingly Spain overcomes Belgium. Although sport is not very spread in the Mediterranean country, the descriptive analysis shows it does not mean Spaniards are passive. Physical activity double (from 35% to 70%) sport participation in the southern nation. Belgium showed the lowest gain and, although Czech Republic achieves a higher growth, it still being the fewest country.

Graph 3 (pag.18) summarizes the sport and physical activity proportion in the five countries.

Chart 2. Sport participation and Physical activity frequencies (%) from the 5 countries

	5th countries	Belgium	Spain	Finland	Great Britain	Czech Republic
	Percentage	Percentage	Percentage	Percentage	Percentage	Percentage
<i>Sport participation (yes/no)</i>						
Yes	44,4%	46,9%	37,5%	70,2%	43,4%	25,0%
No	55,6%	53,0%	62,5%	29,8%	56,6%	75,0%
<i>Sport activity frequency</i>						
5 times a week or more	12,4%	14,1%	12,2%	17,6%	13,9%	4,5%
3 to 4 times a week	13,4%	10,0%	14,2%	26,9%	13,2%	3,3%
1 to 2 times a week	18,6%	22,9%	11,2%	25,7%	16,3%	17,2%
1 to 3 times a month	6,8%	6,6%	4,1%	7,7%	6,0%	9,3%
Less often	17,2%	16,4%	15,8%	13,5%	14,4%	25,5%
Never	31,6%	30,0%	42,7%	8,7%	36,2%	39,9%
DK	0,1%	0,1%	0,0%	0,0%	0,0%	0,4%
<i>Physical Activity Frequency</i>						
5 times a week or more	27,3%	21,6%	32,3%	29,4%	35,7%	17,5%
3 to 4 times a week	17,3%	14,2%	21,8%	23,4%	14,6%	12,9%
1 to 2 times a week	21,2%	22,6%	16,5%	25,6%	21,1%	20,5%
1 to 3 times a month	8,6%	9,8%	6,7%	7,8%	6,7%	12,0%
Less often	13,4%	13,4%	12,1%	9,4%	8,9%	22,8%
Never	12,0%	18,3%	10,6%	4,4%	13,0%	13,8%
DK	0,2%	0,2%	0,1%	0,0%	0,1%	0,5%
Size	N=5136	N=1001	N=1003	N=1017	N=1049	N=1066

Graph 3. Sport participation and Physical activity in the five target countries



4.3 Socio-demographic variables:

Charts 3 and 4 show the respondent's socio-demographic characteristics (pages 21-22).

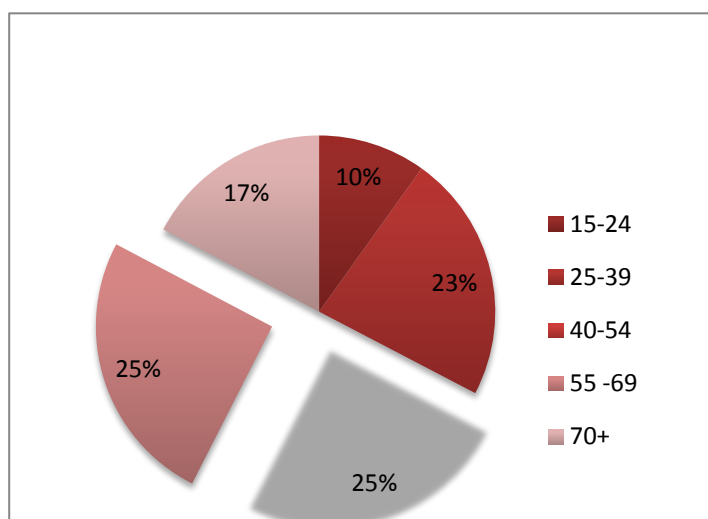
1. Gender: on this data base, there are a few more women than men. On average, 55, 2% of respondents are females and 44, 8% are men. There is almost no spread between the countries. All have more females around the percentages mentioned before.

The sample accords with statistics from EU population, which describes a sex proportion of 0, 96 males/female. (Central Intelligence Agency).

2. Age: this variable has been split into five age categories/levels from 15 to more than 70 years old. The ageing of the five countries going in the same direction.

Most part, (50%) of the respondents are between 40 and 69 years old while only 10% are 15-24.

Graph 4. Age categories in the five target countries



Despite of the clear divergence, the graph explains the nowadays aging European society.

A low number of birds and the aging population from the “Baby-Boom” makes most people living in Europe are middle-high aged. (Maoz, Doepke, & Hazan, 2008).

European governments should take this into account in order to promote sport activities for a short run old population.

Policies should try to convert the “problem” of ageing in a way of push sport participation up focusing policies to the old sector.

Offers in order to get adults involve into sport activities looks efficient, considering the health benefits of being active (Breuer & Wicker, 2008).

3. Education: some studies reveal a positive direct relation between studies and sport participation. (Breuer and Wicker 2008), (Moens & Scheerder, 2004).

Nevertheless, this evidence is not conclusive with the frequency and time length in sports. (Downward & Riordan, 2007), (Humphreys & Ruseski, 2007).

On this project, education levels can be very subjective inasmuch as education standards vary in each country. It makes educational measurement more controversy than other more objective variables (sex, age, occupation...). In order to overcome it, education has been measure by years studying into four groups:

- 15-: range of population who finished their studies at the age of 15 or younger. There are the people with fewer studies, just with the compulsory schooling years or even less.
- 16-19: mainly people who finished their secondary school but did not turn up to university or higher education.
- 20+: overall composed by graduates.
- Still studying: people who are still on their forming process. This variable does not distinguish between upper or lower studies.

Finland accounts the most proportion, 50,4% of citizens with more than 20 years studying (university graduates). Much more than in Spain and C. Republic, where these “high education” levels do not pass the 20% and 15% respectively.

Although Czech shows the lowest university students rate, the East country accounts the lowest “school failure” because just 5, 7% stopped studying at the age of 15 while the average of those countries arrives to 20%.

Spain is the only case with very high “school failure” level. A 42, 2% left their studies with young ages. The past history promotes it. Most Spaniards respondents, as said before, are between 40 and 70 years old. Looking at the past, Spain suffered the darkest period in his history during the post-civil war. Although most countries suffered war conflicts in the last century (IIWW), studies revealed Spaniards took much more time to bounce back because of wrong policies and Franco’s dictatorship. This isolation and divergence respect Europe can be the source of many education failures and unbalances. Spaniards had to study until the age of 14. Then, most of them left to work in the fields. Since young ages, kids had to help in the family economy and most of them could not keep studying for being poor. Besides, there was a huge demand of labour force caused by the loss of human capital during the war. (Carreras & Tafunell, 2012).

Something similar happened in Czech Republic during the communism. Soviet Educational System ensured public, universal and free school access, one of the biggest achievements of the socialism. It is why “15 desertion” level looks so low. Nevertheless, most of them had to left their educational period (72,5% in C. Republic) when they became adults. The precarious socialism system could not afford many university students and labour force was very demanded in this countries. (Moses, 2007).

4. Degree of urbanization: urban distribution seems to be quite balance between the countries. This variable distinguishes three groups of community: rural area, town, big town. Point up mainly Spaniards and Belgians have more rural population than the average.
5. Finally, there is not consistent gap between counties talking about occupation, social class (divided into three social status/levels: low, medium and high) and size of household (small families, with less than 3 members and large families, 3 members or more). Frequencies are quite balanced and homogeneous.

Chart. 3Percentage of respondents by socio-demographic characteristics

	5th countries	Belgium	Spain	Finland	Great Britain	Czech Republic
	Percentage	Percentage	Percentage	Percentage	Percentage	Percentage
Gender						
Male	44,80%	45,80%	44,20%	43,30%	44,20%	46,40%
Female	55,20%	54,20%	55,80%	56,70%	55,80%	53,60%
Age						
15-24	9,90%	10,40%	11,70%	8,60%	10,40%	8,50%
25-39	22,80%	23,80%	24,80%	17,20%	21,90%	26,00%
40-54	24,80%	27,70%	24,00%	22,60%	22,30%	27,60%
55 -69	25,20%	23,20%	22,10%	30,40%	22,50%	27,90%
70+	17,30%	15,00%	17,30%	21,20%	22,90%	10,00%
Education						
15-	19,90%	13,90%	42,20%	11,00%	27,50%	5,70%
16-19	43,90%	43,50%	29,60%	26,60%	45,80%	72,50%
20+	27,90%	35,80%	18,30%	50,40%	20,70%	14,90%
Still Studying	5,80%	5,70%	7,00%	7,00%	4,70%	4,60%
DK/No studies ^a	3,00%	1,20%	3,00%	4,90%	1,40%	2,30%
Occupational status						
Self-employed	6,52%	6,79%	4,69%	5,70%	6,10%	9,19%
Manual workers	20,42%	23,48%	25,02%	17,70%	17,92%	18,29%
Non-working	46,83%	47,25%	49,45%	50,34%	51,00%	36,49%
Students	5,76%	5,69%	6,98%	6,98%	4,67%	4,60%
Professionals	20,46%	16,78%	13,86%	19,27%	20,31%	31,43%
Size	N=5136	N=1001	N=1003	N=1017	N=1049	N=1066

Chart 4. Percentage of respondents by socio-demographic characteristics

	5th countries	Belgium	Spain	Finland	Great Britain	Czech Republic
	Percentage	Percentage	Percentage	Percentage	Percentage	Percentage
Social Class						
Low social class	8,61%	7,29%	4,59%	6,49%	10,96%	13,32%
Medium Social class	80,51%	83,02%	91,23%	74,24%	76,84%	77,67%
High Social class	10,88%	9,69%	4,19%	19,27%	12,20%	9,01%
Degree of urbanization						
Rural area or village	36,25%	41,46%	48,26%	28,02%	26,41%	37,62%
Small or middle sized town	38,79%	39,16%	28,81%	51,62%	39,28%	35,08%
Large town	24,88%	19,38%	22,83%	20,35%	34,03%	27,30%
Size of household						
Small family	58,45%	57,14%	47,66%	68,83%	66,06%	52,44%
Large family	41,55%	42,86%	52,34%	31,17%	33,94%	47,56%
Size	N=5136	N=1001	N=1003	N=1017	N=1049	N=1066

After knowing better the data set, is time to fix the analysis explained before and study the sport participation according with the socio-demographic determinants. Tables 5 and 6 represent the percentage participation rates (yes/no) associated with each independent variable. (Pages: X).

- Gender: commonly Males (46,2%) participate few more than Female (43%). Finland is the only country where woman account more sport participation (73, 5% and 65, 9%). This fact agrees with most theories mentioned in the literature review: (Breuer & Wicker, 2008), (Kokolakakis, Lera-López, & Panagouleas, 2011), (Fairclough, Boddy, Hackett, & Stratton, 2011)... Finland represents the unique country where women seems to do more sport than men (73,5% and 65,9% respectively).
- Ageing: in all cases, by approximately 30% points, sport goes down as we move from the youngest to the oldest age category, according with most theories mentioned before. However, the way and the weight of change differ a lot. England and Belgium shows almost the same results during the first years. Nevertheless, Spain older ages declines much more than the other (13,8% while the mean is 32%).
- Education: table also shows a possible positive relationship between education and sport. Participation rates increases as we move from low education (-15) to higher

ones (+20). Besides, “Still Studying” accounts the highest rates, meaning students are the most active target people (as happens also in “Occupational Status” co-variable).

- Occupation is where data differs more from one nation to other. Students are the most active ones in all countries. Nevertheless, UK students are the most passive ones and they do not account the high difference respect to others as happen in most countries. Retired people behave differently. Belgians (60, 5%) and Finnish (65,6%) participate much more than Spaniards (26,3%); British (31,7%) and Czech (15,2%) retired. It fits exactly with the data showed in Age category. These three countries should do extra effort in order to spread sport activity for aging citizens. Managers achieves higher rates than other occupational status in all nations and semi-professional and manual workers percentages seems to be really similar, with few differences between the countries; Belgians and Finnish manual workers participate a few more than semi professionals.
- The general data shows a weak positive relation between social class and sport participation. As we move from lower levels to upper ones, sport participation rises in similar proportion in all countries. clear relation between social class level and participation. As we move from low society level to upper ones, sport participation rates rises. But this increase is too weak, from 30% average of the three lowest levels to 50% average of the top ones. Oddly, top one level (10) rate breaks this “process”, having lower rates than its next levels in all countries. This phenomenon could be associated with the leisure time theory. Highest society level is formed by richest groups. People who probably work a lot do not have much free time for spending on sports as mentioned before. (Cushman, Veal, & Zuzanek, 2005), (Lechner & Downward, 2013)..
- Town’s citizens also achieve few higher rates than rural ones, except in UK where percentages are balanced and Belgium where rural citizens achieve higher participation rates.
- Finally, size of household shows an homogeneous result in all countries. Lookin at the data from chart 5, it looks here is a weak trend of higher participation rates in household with more members (large families).

Chart 5. Percentage of active sport participants by socio-demographic characteristics

	5th countries	Belgium	Spain	Finland	Great Britain	Czech Republic
	Percentage	Percentage	Percentage	Percentage	Percentage	Percentage
Gender						
Male	46,20%	52,20%	42,70%	65,90%	47,60%	24,80%
Female	43,00%	42,50%	33,40%	73,50%	40,00%	25,00%
Age						
15-24	65,40%	63,50%	67,50%	83,90%	56,00%	58,20%
25-39	49,30%	54,20%	42,20%	73,70%	53,00%	32,90%
40-54	43,30%	43,70%	40,20%	70,90%	45,30%	22,40%
55 -69	41,40%	44,40%	32,00%	70,20%	44,10%	13,80%
70+	32,00%	34,00%	13,80%	61,10%	25,80%	14,00%
Education						
15-	29,70%	30,90%	27,00%	55,40%	26,40%	14,80%
16-19	38,90%	44,80%	38,40%	66,10%	47,10%	21,20%
20+	58,10%	51,10%	48,90%	74,10%	56,20%	35,80%
Still Studying	72,60%	78,90%	75,70%	83,10%	55,10%	63,30%
DK/No studies ^a	18,50%	33,30%	18,50%	6,80%	20,00%	21,70%
Occupational status						
Self-employed	46,00%	52,90%	38,30%	69,00%	57,80%	23,50%
Managers	63,80%	54,50%	59,30%	81,70%	62,50%	41,50%
Other white collars	43,10%	46,80%	41,20%	65,70%	62,40%	28,90%
Manual workers	43,60%	52,30%	35,90%	68,90%	44,10%	19,00%
House person	34,40%	31,60%	27,70%	78,30%	41,20%	35,30%
Unemployed	41,30%	42,70%	43,00%	71,40%	25,40%	22,60%
Retired	38,60%	60,50%	26,30%	65,60%	31,70%	15,20%
Students	72,60%	78,90%	75,70%	83,10%	55,10%	63,30%
Social Class						
Low social class	31,7%	39,7%	43,5%	50%	28,7%	17,6%
Medium Social class	44,6%	47,2%	36,5%	71,40%	45,4%	25,7%
High Social class	53,1%	50,5%	52,4%	72,4%	43,8%	29,2%
Degree of urbanization						
Rural area	40,7%	49,42%	30,10%	70,9%	43,6%	20,9%
Town/city area	46,5%	45,2%	44,40%	69,9%	43,3%	27,4%
Size of household						
Small family	41,7%	41,3%	32%	68,1%	40,8%	18,4%
Large family	48,2%	54,5%	42,5%	74,8%	48,3%	32,1%
Size	N=5136	N=1001	N=1003	N=1017	N=1049	N=1066

5. SPORT PARTICIPATION MODEL

Descriptive analysis explained before based on Charts 1,2,3,4 and 5 allowed for the presentation of some interesting “facts”, but it is not appropriate to capture and interpret the effects of the variables examined. Rendering should be done through econometric analysis, examine the variables as a whole.

In this case, the main issue of the analysis is to find and interpret how socio-demographic variables influence on sport participation in the target countries.

Sport participation is, in this case, qualitative response variable. It is divided in sport participation frequencies. Qualitative regression model has to be used.

Nevertheless, non-linear regression model (as the one we will use) requires binary dependent variable. (Y=“Sport participation”) can only accept two values:

- 1. If the person do sport; (1 = “Yes”).
- 0. If the person do not; (0 = “NO”).

Sport Activity Frequency is divided in 7 sections with different sport participation frequencies. Analysis requires grouping the sections in two possible answers (YES/NO) in order to get the binary variable:

- | | | |
|---------------------------|---|-----------|
| 1. 5 times a week or more | } | 1= “YES”. |
| 2. 3-4 times a week. | | |
| 3. 1-2 times a week. | | |
| 4. 1-3 times a month. | } | 0= “NO”. |
| 5. Less often. | | |
| 6. Never. | | |
| 7. DK (Don’t know). | | |

Only weekly sport activities (1-3) will be considered as positive sport participation (“YES”). The rest (4-7) will not be included as sport participation (“NO”).

(WHO) Sport and Physical Activity theory has been taken into account in order to encode the answer variable. As it says, only weekly physical activities have a positive effect on health’s participants. (World Health Organization (WHO), 2014).

5.1 Qualitative model vs Lineal Regression Model:

- In the Lineal Regression Model where Y is quantitative, the analysis tries to estimate the expected value of “Y” depending on the independent variable (co variables). Thereby, $E(Y_i/X1_i, X2_i, X3_i...Xk_i)$. Independent variables Xi can be either qualitative or quantitative.

Lineal Regression Model has no sense for this project. Response variable (Sport participation) is encoded in qualitative answers, not quantitative.

Thereby, if independent variable Y= 3, means this person practices sport 1 or 2 times a week. It does not mean the respondent do sport twice, as lineal regression model would require.

- In the model with quantitative independent variable (“Y”= Sport participation), the analysis tries to find the probability of the event (“Y”) happens (Do Sport).

It is why, sometimes these kind of analysis are called: “Probabilistic models”.

These models overcome the “issue” of the dependent variable (qualitative instead of quantitative). Furthermore, as the goal of the analysis is to determine how socio-demographic characteristics (co variables) affect on do sport, probability results are more suitable than count ones.

This nonlinear logistic model does not make the unrealistic “constant return” assumption embodied in linear regression ones.

(Gujarati, 2003).

5.2 Logit:

Regression Model will be calculated using Binary Logistic Regression (Logit) by SPSS.

Logit formula is expressed as: $P_i = \frac{e^z}{1+e^z}$

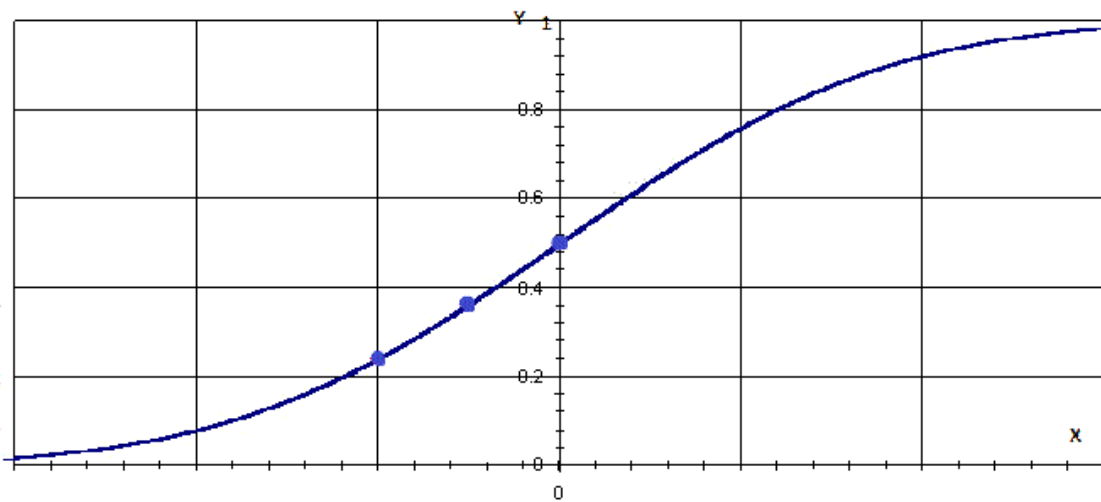
Where $z = \beta_0 + \beta_1X_{i1} + \beta_2X_{i2} \dots \beta_kX_{ik}$ estimated by BLR..

The model respects the two main characteristics of non-linear regression models:

1. According as Xi rises, $P_i = E(Y/ X=1)$ rises but does not go out of the range 0-1 (percentage).
2. The relation between Pi and Xi is not lineal: Pi gets close to 0 with slower rates as Xi goes down; Pi gets close to 1 with slower rates as Xi goes up.

(Gujarati, 2003).

Graph 5. Non-Linear regression



(Wooldridge, 2006).

In the logistic model, Z_i assumes values between $-\infty$ and $+\infty$ whereas P_i is between 0 and 1 (probability). Thereby, P_i has not linear relationship with Z_i , respecting both issues mentioned before.

$$P_i = \frac{e^z}{1 + e^z}$$

P_i is the probability of participation and z represent the vectors of the variables, including the constant.

$$z = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} \dots \beta_k x_{ik}$$

All explanatory variables of the model are binary capturing the socio-demographic determinants explained before: gender, age, education, occupation, social class, household size and degree of urbanization community.

In the constructed logistic model, the base category corresponds to the following socio-demographic profile: (1) female, (2) education: high education, (3) occupation: professional/semi-professional (high occupation scale); (4) level in society: high level; (5) degree of urbanization community: rural area; (6) household size: small household composition.

Age appears as the only quantitative variable in the regression model.

All explanatory variables of the model are binary too, capturing the factors: gender, education, occupation, level in society, type of community and household composition.

5.3 Regression results:

Chart 6. Regression Model of Sport Participation

	B	E.T.	Sig.	Exp(B)
SEX	,137	,059	,021	1,146
AGE	-,014	,002	,000	,986
Social Class			,000	
Low Level	-,703	,140	,000	,495
Medium Level	-,173	,095	,068	,841
Family composition			,370	
Large Family	-,061	,068		,941
Degree of urbanization				
Town	,147	,061	,017	1,158
EDUCATION			,000	
Low education	-,954	,094	,000	,385
Medium education	-,734	,070	,000	,480
Non education	-,539	,191	,005	,583
Still Studying	,274	,158	,082	1,315
OCCUPATION			,276	
Self employed	-,117	,130	,369	,890
Manual worker	-,152	,091	,094	,859
Not working	-,011	,088	,899	,989
CONSTANT	1,068	,169	,000	2,908
R2=0,077 (Cox & Snell)				

The program estimates the β values of each variable and the constant (β_0).

Note category variables mentioned before have been used for computing the constant (1,068).

Nevertheless, some factors are not significant for the regression model. "Occupation" (0,276) and "Household" (0,370) shows non proper significance levels, which should be between 0,00 and 0,05 for a 95% CI.

Using the tool "non lineal regression model by steps", SPSS computes a new model excluding those non-significant variables for the "Sport participation analysis" at 5% significant level.

Chart 7. Final/Reduced Regression Model for Sport Participation

Variables included:				
	B	E.T.	Sig.	Exp(B)
SEX (MALE)	,126	,059	,033	1,134
AGE	-,012	,002	,000	,988
Social class			,000	
Low Level	-,684	,139	,000	,505
Medium Level	-,168	,094	,075	,846
Degree of urbanization				
Town	,158	,061	,010	1,171
EDUCATION			,000	
Low education	-,963	,092	,000	,382
Medium education	-,743	,070	,000	,476
Non education	-,549	,190	,004	,577
Still Studying	,354	,151	,019	1,425
COSNTANT	,896	,142	,000	2,449
R2=0,076 (Cox and Snell)				

Notes: all variables showed are significant at $\alpha=0,05$ level of significance.

Insignificant variables: "Occupation" and "Household composition".

Thereby, the first conclusion we found by this modelling is that occupation and household composition have less importance and weight than the other socio-demographic characteristics.

That does not mean those variables do not affect on sport participation. However, their weight in the dependent behaves are fewer than the other, being less important than: sex, age, social level, education and type of community.

Remember, this model has been computed with data from the fifth countries. Therefore, it represents the “common” or “mean” regression model. Determinants relationship with sport participation can vary in each country.

The odd ratios represent the expected participation levels of respondents who belong to category profile. Remanding, being: *female*, (2) education: *high education*, (3) occupation: *professional/semi-professional* (high occupation scale); (4) level in society: *high level*; (5) Degree of urbanization community: *rural area*; (6) size of household: *small household composition*.

Nevertheless do not forget the odd data does not represent the sport participation probability. Now, it is time to implement the Logit model to compute a probability of participating on sport. Regression model β results combined with the Logit model shows the main probability a respondents has to participate achieving the category profile. Thereby, considering our profile is 29 years old (remind this quantitative variable have not been included in the category profile):

$$Pi(Y = 1) = \frac{e^{0,896-0,012*29}}{1 + e^{0,896-0,012*29}}$$

$$Pi(Y = 1) = 0,6336$$

Category profile has a 63, 36% of participate in sport.

The high probability is due profile achieves most of socio-demographic determinants with positive influence on sport participation (according with analysis and literature review written before).

Statistical results fits with most theories mentioned before:

- Gender: $\beta = 0,126$ (positive) means males have more probability of do sport than women.
- Age: $\beta = -0,012$ represents sport participation declines with aging.
- Social class: comparing the β s from low and medium society level (-0,684 and 0,168), we see both levels reduces sport participation probability. Both β are negative because as low as medium social class levels reduce the model result comparing with the category chosen variable “high level”.
The society level result fits with the positive relationship theories between social level and sport participation.
- Degree of urbanization: town has, as male, has more positive effects on Y. Citizens who live in towns are more likely to practice than rural-villages habitants. Data from Chart 5 showed before proves this relationship. Only Belgium achieved higher participation in rural areas.
- Finally, education results show clear evidence of the relationship sport and education. The more we study, the more we practice. Only “still studying” achieves better results than high education. But, this fact reinforces the positive relation.

Curiously, non educated data seems to have less negative effect than low and medium education.

Statistical logistical regression results reinforce the theories read before. Being male, high education, high occupational and social status and living in towns are the main facts which contribute to sport participation. Female and aging reduces the probability of the event happens.

Besides, the study revealed household composition and occupation are less significant.

For example; the significance of Education contributes towards the lower sport participation rates in Spain and Czech Republic. "Non-education" and "lower education" degrees reduce sport participating, affecting specially to those nations where high education level (the most positive one) is less common than in the rest (18,3% and 14,9% comparing with the average 27,9%).

Hopefully, education importance due sport participation gives Spaniards and Czech a future opportunity. "Still studying" proportion is, nowadays, quite balance with the rest.

Next generations seems to change the way because they have more opportunities than some years ago. Taking into account the positive relation between "still studying" and sports, participation rates will get higher and higher with the pass of time, overall in Spain.

Fifth common regression model could be useful to have a general idea about the factors which affect on sport participation and, then, contributes to the nations 'differences.

Nevertheless, analyzing themselves separately would be also positive to find the source of the gaps between them.

5.3.1 Individualized models of sport participation:

Chart.8												CZECH REPUBLIC		
BELGIUM			SPAIN			FINLAND			UNITED KINGDON					
N=1001			N=1003			N=1017			N=1049			N=1066		
Variables	B	Sig.	Variables	B	Sig.	Variables	B	Sig.	Variables	B	Sig.	Variables	B	Sig.
SEX	,403	,002	SEX	,433	,002	SEX	-,388	,006	EDUCATION		,000	AGE	-,035	,000
AGE	-,012	,004	AGE	-,033	,000				Low education	-,918	,000	EDUCATION		,000
EDUCATION		,002	TYPE COMMUNITY			AGE	-,017	,000	Medium education	-,246	,147	Low education	-,635	,124
Low education	-,626	,005	Town	,532	,000				Non education	-	,092	Medium education	-,762	,000
Medium education	-,213	,142	OCCUPATION		,005	SOCIETY LEVEL		,001	OCCUPATION		,000	Non education	-,704	,198
Non education	-,665	,289	Self employed	-,350	,326	Low Level	-,974	,001	Self employed	-,059	,840	Still Studying	,168	,651
Still Studying	,958	,008	Manual workers	-,591	,008	Medium Level	-,040	,824	Manual workers	-,613	,003	TYPE COMMUNITY		
			Non working	-,197	,367				Non working	-,931	,000	Town	,313	,048
			Students	,458	,186				Students	-,495	,141			
CONSTANT	,420	,069	CONSTANT	,784	,004	CONSTANT	2,034	,000	CONSTANT	,700	,000	CONSTANT	,868	,007
R2 = 0,059			R2=0,124			R2=0,037			R2=0,082			R2 = 0,091		

Analyzing countries separately, SPSS develops models with diverse significant variables for each country. This means socio-demographic determinants do not behave and affect homogeneously around EU (at least around these target countries). Results fit in general way with most statistical research. Nevertheless, the model reveals some curious outcomes.

Using SPSS again, computation of each regression model reveals evident differences between the nations. In fact, introduced socio-demographic patterns vary from one country to other. This significant dispute and variation makes countries do not behave together towards social variables, creating the geographical stratification cited by many authors: Rodgers (1977), (Van Tuckyom & Scheerder, 2010).

- Age is the most common significant variable. It affects in four of the five studied countries. Just UK model reject it. It also impacts negatively in all the nations, concluding with the adverse aging theories. , (Breur, Hallmann, Wicker, & Feiler, 2010).
- Sex is the second more relevant socio-demographic characteristic. It is included in Belgian, Spaniard and Finnish models. Surprisingly, in Finland, β is negative, meaning being male reduces the probability of sport participation in the Nordic nation. Descriptive analysis showed higher proportion of women due participation. Nevertheless, it could be due the higher number of female respondents. Statistical results reveal something almost unthinkable. It is true being male is still over females at sport participation. (Breuer & Wicker, 2008), (Kokolakakis, Lera-López, & Panagouleas, 2011), (Fairclough, Boddy, Hackett, & Stratton, 2011) Nevertheless, Finland, shows it does not happen everywhere. The sport participation leader (in EU) could be also a great example of how gender differences can be cut down in sport and many other scenarios.
- Education seems to be in the third place. It is significant in the models from Belgium, UK and Czech Republic. Non-educated affect negatively homogeneously in all nations. Generally, model's coefficients respect the common believe about higher education increases participation. (Breuer & Wicker, 2008), (Downward & Riordan, 2007), (Lechner, 2009). In fact, low and medium education declines the constant (in which high education is included). Just "still studying" achieves highest positive effect on sport (in Spain too because it appears on Occupation status). Alarmingly, "still studying" has negative effect for England, differing with the rest, being the exception. High educated British participate more than nowadays students. Taking into account high educated levels (+20 years studying) is mostly formed by middle-high age population (59% between 40-70 or more), future English participation is worrying.

Studies and sport is getting connected by the States in order to achieve higher active population for the future. Getting sport habits during scholarship and higher studies reinforce the future sport participation.

- Degree of urbanization, although is included in the general model, does not look so significant for Belgium, Finland and England. It only affects in Spain and Czech Republic where living in towns implies more probabilities to do sport than in rural areas. Interestingly, town and rural areas affect on sport just in the less participating countries. Rural areas and villages seem to offer less sport opportunities for the habitants in the two countries rather the ones who live in bigger communities as towns. Should be developed policies and strategies offering sport activities, associations, clubs... in order to spread participation over villages and reducing the distance with bigger cities.
- Even though occupation was rejected by SPSS in the general model, it is significant for Spain and UK.

The way of influence is mostly equal. Nevertheless, in Spain, student achieves the biggest positive relation while professional occupations are the best considered in the English model. Studies made before comparing both countries revealed similar results. (Kokolakakis, Lera-López, & Panagouleas, 2011).

- Curiously, although social class has been included by SPSS in the general model, it is only significant for the Finnish individual logistic regression model. Comparison between both models shows a fewer switches by status between Finland and the five average countries together (common model). Odds from “medium social class” and “low social class” are negative, reducing sport participation comparing with “high social class”. It agrees exactly with the results showed in chart 5, where sport participation rises softly as we move from lower to upper social classes. Although these gains are not very notorious, it is true there is a high gap of sport participation between low class and medium class in Finland (50% and 70, 4% respectively). Lower classes are really “outcaste” compared with medium and high classes (which show similar results) on sport participation in Finland. Policies performed in the Nordic country should focus on this group of people.

Geographical stratification can be understood looking at the coefficients. Remember, although there are five nations, we distinguish three groups according with their participation levels: (1) Finland (2) Belgium and England; (3) Spain and Czech Republic.

Aging has more negative effect in all states unless England where it seems to be less significant. Studies about participation spread of aging population in England matches with the data. (Stamatakis & Chaudhury 2008).

On the other hand, “sex”, apart from Finland, achieves the same effect in all the countries. Being male increases probability of do sport. This exception (Finland) contributes with its large advantage over the rest. High “women” participation rates in the Nordic country make itself positioning as European leader, among other things.

Finally, “type of community” also contributes with these demographic differences in the case of Spain. As regression model proved, living in towns contributes to participate. 48,3% Spaniards live in “rural areas” while the average is just 36,3%. That means 12% more proportion of Spanish population live in places where, it is demonstrated it reduces the sport participation

6. CONCLUSIONS and IMPLICATIONS

External analysis done before and the statistical regression model develop by SPSS in this project prove socio-demographic variables affect on sport participation.

Due that, according with the five countries model, the negative profile of person through sport achieves the next characteristics: (1) being female;(2)low social level; (3) low education level; (4) living in rural places such as villages and (5)being old (aging declines participation).

Thereby, demographic stratification reflects all these social differences.

Although general regression model offers a common view of how socio-demographic variables affect on sport participation, individualized analysis is better in order to create specific strategies in each country in order to raise participation and decreases the geographical gap.

Some common policies should take in almost all places. Aging negative effect happens in all countries (England with less weight). There is no doubt being older reduces probability of participating. As said in this project, this fact is even more vital for Europe which shows an aging demographic population (bell structure). (Walker & Maltby, 1997). Thereby, homogeneous policies should be developed in all countries in order to promote sport participation to those target people: ageing citizens.

1. European Union should develop publicity campaigns showing the health benefits of being active in order to take the attention of this sector.
2. Sport centres and clubs should develop suitable sport activities for this kind of participants: low intensity.
3. Close sport to the olds adding gyms or other kind of suitable sport place to elderly residences.
4. State should reward these efforts thorough economic aids.

Gender is also a common gap. Apart from Finland, females practice less sport. This reduces sport participation result too much, taking into account women represents more than a half of European population (55,2% in this case). Reducing gender gap is more complicate than it looks at first place because social values associate sport and competition with men in most cases. It is crucial to change this belief in order.

Communication channels, news and all kind of press should have a key role- Media never talks about women´s sports. This marginalization reinforces the faith about sport is just for men. Females' competition should gain importance in order to destroy these values.

Also, sport centres should increment less competitive sport activities which, in many cases, do not attract women.

Women image concern also contributes due sport participation. Nevertheless, this should not take as a strategy to promote sport because excess physical preoccupation is more common in women and it could create mental and physical disorders and negative effects for the person.

Then, some policies should be implemented in specific countries due socio-demographic significant differences:

- Curiously Finnish should try to promote male sport participation. Nevertheless, social class differences are more relevant. There is a huge gap between low social classes and medium ones (50% and 70% respectively).
State should try to support lower social classes offering cheaper and more economic sport activities making sport more accessible.
- Spain: state should focus on rural populations where participation is significant lower and it represent a high proportion of population (48,26%). There is evidence about future participation rise through education improvements, almost half of Spaniards live in places where sport possibilities are reduced. In order to overcome

this barrier, sport improvement should be developed sport infrastructure, tournaments, clubs, activities...in key rural areas (strategic villages with quite notorious population and transport facilities). Unfortunately the country cannot afford this kind of inversion at the moment. Social organization focus on sport could be a good idea to help rural citizens.

- Czech Republic, as in the case of Spain, should focus on rural areas.
- England: although English show best results through the most negative and controversial social determinant, aging, statistical analysis reveals a worrying fact about students. The low sportive student habits combined with the negative effect of aging on sport participation would make British participation rates fall down in the future. British government should take action to prevent next year's darkness. Sport activities in schools and education centres (even doing it compulsory at younger ages) would create sport habits and increment students participation. Report to families in order to push sons to more active life styles against other kind of leisure activities: TV, computer games...
- Belgian case seems to be quite balance. But gender gap is quite large for a country with so great participation levels.

Concluding, these projects demonstrate how socio-demographic characteristics affect on sport participation and how these differences contribute to the geographical stratification.

States should implement policies in order to reduce this gap. Unfortunately, countries with fewer participation rates, in this case Spain and Czech Republic have less economic resources to invest on sport infrastructures, policies, clubs...

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