TILBURG UNIVERSITY

Sport participation in Europe

The extent of contextual effects

Master Thesis Sociology

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To what extent is sport participation determined by contextual effects. The sport participation level of individuals is analyzed as compared to the governmental expenditure on sports, Olympic success, number of sport federations in a country, density of sport clubs, communist background and Gross National Income per capita controlled for composition effects.

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Sport participation in Europe. The extent of contextual effects

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Abstract

During the past few decades sport participation has been rapidly growing. The growth in sport participation is mainly due to the changing interest in sport by the people and the governments. Sport is nowadays used as a tool to achieve goals, for instance, reducing obesity and improving social cohesion. The state ensures through public policies that all citizens are guaranteed a certain level of physical well-being, economic security and participation in cultural life. Often this is about many different elements such as education, health, labor and culture, but this also includes sport. Since participating in sport touches many of the functions which can be assigned to public policy, such as integration policy, youth policy, health policy, educational policy, political policy and economic policy, this research answers the question to what extent have contextual factors an impact on sport participation. Based on data derived from the Eurobarometer 62.0 the effects of governmental expenditure on sports and recreational services, Olympic success, the sport infrastructure, communism and Gross National Income per capita are tested by an ordered logistic regression. To start off with the analyses, it was shown that 4.1% of the explained variance was due to the country dummies and 5.4% was explained by individual determinants. Further analyses tried to explain this variance of countries by contextual effects, governmental expenditure on sports and recreational services, Olympic success, sport infrastructure, communism and Gross National Income per capita. As the analyses were conducted only half of the explained variance was due to the added context variables. In the end only GNI proved to be significant regardless which other contextual variables were added. This significant effect was expected since household income or personal income are major determinants of sport participation on the individual level. GNI is together with gender, educational level and age the main predictor of sport participation in Europe.

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1. Introduction

During the past few decades sport participation has been rapidly growing regardless of the way sport is organized and where it can be practiced (e.g. school/university, public club or fitness/health club). For instance, since 1975, the average time spent on sport doubled to 1.5 hours per week per capita in the Netherlands. In 1995, 55% of the Dutch population participated in sports with some regularity (Van den Heuvel en Van der Werff, 1998). The growth in sport participation is mainly due to the changing interest in sport by the people and the governments. Sport is nowadays mostly used as a tool to achieve goals, for instance, reducing obesity and improving social cohesion. Secondly, there is more demand for new kinds of sport with a lower intensity and more lifestyle aspects (e.g. surfing, skating and snowboarding). In the third place, participating in sports became more of a normative behavior. Since the beginning of the 20th century, people started acknowledging sport as healthy and character and personality building. Sport was offered at most public schools and foundations financed the private schools who could not afford it. Thanks to the changed view on sport, clubs and federations arose everywhere and together with sport at school sport became a part of daily life (Tiessen-Raaphorst, 2010: 3 as cited in Rapportage Sport, 2010). Nevertheless, there are several life course stages in which sport participation decreases. In the first place, sport participation is decreasing as soon as there are young children present in the family. Remarkable is the increase of sport participation when children become older. In the second place, sport participation is decreasing when the labor market position of people change from being employed to retired, however they have more free time the sport participation frequency goes down. According to De Haan (2010) there is less available leisure time to spent on sports when having children and a job (De Haan, 2010: 2 as cited in Rapportage Sport, 2010). The decrease in sport participation when being retired might be caused by the effect of age.

People participate in sports for several reasons, to improve health, to have fun, to relax, to be with friends, meet new acquaintances, develop physical performances, develop new skills, improve self-esteem, to achieve objectives, to stimulate the spirit of competition or to help them integrate. Several of these reasons serve the state as well as the individual. Because of those reasons sport can be used as a tool by the government to achieve goals which transcend the individual benefits. However, of these reasons only health and integration are obviously linked towards the goals of public policy and even integration is doubtful since the debate whether sport has a dividing or bridging function in society between classes,

income groups, and ethnic groups is still going on. Since engaging in sport touches many of the functions which can be assigned to public policy, such as integration policy, youth policy, health policy, educational policy, political policy and economic policy it is likely that the state supports sport participation, otherwise the state would have to provide comparable organized activities in another way. Public policies are a product of the welfare state in a country and in this research several parts of the welfare state in the form of public policies will be used to compare with sport. A common description of the welfare state is provided by Esping-Andersen (1990) as the state its responsibility for securing some basic modicum of welfare for its citizens. More recently the goal of the welfare state has been defined by Heinemann (2005) as the equal accessibility and equity of resources among the citizens. To a large extent this is about the state-regulated re-distribution of life chances. The state ensures through public policies that all citizens are guaranteed a certain level of physical well-being, economic security and participation in cultural life. Often this is about many different elements such as education, health, labor and culture, but this also includes sport. This research will not be about contextual effects of the classical welfare state model as provided by Esping-Andersen, but will aim on contextual effects of public policy and organization of sport in a country.

Furthermore, besides the public policies sport is used for various political purposes. For instance, the black power protest at the 1968 Mexican Olympic Games to draw attention to the living conditions of black people (Jarvie, 2006) was used as a political protest and the Rugby World Cup in 1995 in South Africa which Mandela used to permanently end the racial segregation (Carlin, 2009). In the years leading up to the 1995 Rugby World Cup Nelson Mandela used rugby as a tool to bring white South-Africans and black South-Africans together. For years Rugby was associated with the whites and symbolized the brute force of the whites holding the blacks down. Led by Mandela, the leader of the blacks, the black South-Africans supported the national team during the world cup and moved by Mandela, the players of the national team visited Robben Island. From that moment on the national rugby team noticed they were doing more than just playing a game. Everybody was cheering for one team and with the slogan “one team, one country” the once broken country became one country at last. Of course, the fact that South-Africa won the world cup that year contributed to a large extent to the ultimate goal of peace and equality. As these examples show, political statements can be made through sport by supporting or boycotting certain teams and events. In addition to political statements, sports events alone are profitable for a country as well. Hosting a major sports event is seen as a privilege by many countries. Hosting a major sports

event is seen as a contribution to the economic development of a country and could facilitate the overall development of a country. With the world watching, a country will be the center of attention for a certain time. Hosting a major sports event often results in development of the infrastructure, a growth in tourism and increase of the public spirit (Robinson, 2005). As these examples illustrate sport has far-reaching extensions into societies and politics next to the individual benefits of sport.

Although sports, politics and the welfare state are linked to each other, not much research has been done on this particular subject. This research will add new information to the literature since empirical evidence only exists on the individual level (e.g. Corti, 2002; Crespo, 2000; Fromel, 2008; Kahma, 2010; Kamphuis, 2008; Popham, 2007; Scheerder, 2005; Raudsepp, 2006; Wagner, 2003) and on the neighborhood level (Estabrooks, Lee & Gyurcsik, 2003). Comparative research on the connection between the welfare state and sport participation is done by Heinemann (2005), who described the interconnection between the welfare state and sport participation on the aggregated level. This research adds empirical evidence for contextual effects, while controlling for compositional effects. When holding all individual variables constant in every country (e.g. age, gender, income and educational level) the extent of contextual effects is tested (e.g. Gross National Income, Social expenditure). This research will answer the question to what extent contextual factors have an impact on sport participation. The information gathered from this research will inform countries as to which are important determinants of sport participation. The data will provide information about the main determinants on the individual level and on the country level. It is not providing a best way for organizing the state, because each country has a historical and cultural background which makes the country unique.

2. Theory & hypotheses

This chapter provides the theoretical frameworks and mechanisms that are used to explain the association between sport participation and gender, age, educational level, ethnic origin, labor market position, household composition, governmental expenditure on sports, Gross National Income, Olympic success, the sport infrastructure and communism. First of all, an overview of the mechanisms behind the individual variables is given followed by the theoretical framework of contextual factors. Since this research is focused on the macro level determinants of sport participation all of the individual variables are added as control variables. Nonetheless, some hypotheses on the individual level are formulated.

2.1 Micro level

So far, research on this particular subject has been limited to empirical research on the individual level. The existing knowledge dates back to the late 1800´s with Veblen and Bourdieu, who published research on the process of class distinction through leisure time spending and sports. Veblen (1899) provided insight in the effects of social and cultural changes in society and their effects on leisure time spending. He concluded that people tried to acquire status and to impress others by conspicuous consumption in which leisure time spending was a tool to show that one was wealthy enough to practice sports instead of working. Bourdieu (1979) elaborated on the relationship between classes in the way of leisure time spending and cultural preference. He concluded that someone's cultural preference and leisure time spending is not simply a matter of personal interest, but in many cases an expression of the group to which one belongs. According to Bourdieu (1979) and his theory of class distinction, social classes distinguish themselves through lifestyle and cultural taste. As well as for music, literature and art this distinction is made through sport. In this discussion sport is a tool that could be used in both ways. With the financial support of the government the less wealthy are more likely to participate in sport, but without the support it is more likely that sport is drifting classes apart. Participating in sport is not any more solely depending on the financial resources one have since there are many governmental programs that support the less wealthy. We can see the classes shifting through sports or sports being passed on to different groups. In the early years, membership of a soccer club was exclusively for high classes. After a while the lower classes started their own league and suddenly soccer was not an elite sport anymore. More recently we can see this change with golf, which used to be for the high class only since you needed to be introduced to the board of the golf club by a member and only if the board approved you were able to play golf at the course. Nowadays

there are a lot of open golf courses where everybody is allowed to play even if you are not qualified or have the skills.

2.1.1 Gender

The degree of participation in sport differs between social groups such as gender and age. Like many areas, sport recognizes differences between men and women. According to Jarvie (2006), the gender differences are not merely because of different perceptions and experiences of sport by men or women, but gender and sport participation will go beyond boundaries of culture and region. Therefore, gender in relation to sport participation has to be approached carefully. As long as sport exist it is used by men to separate themselves from women in games and contests and show their strength and athleticism (Dufur, 2006). Sport is a reflection of society and has the same separated gender roles as in business life and the household. Sport is also a symbol for masculinity, since spectacular sporting events turn into masculine symbols. Nowadays, there are less differences between men and women in sport, but there are still less women participating. Only nowadays it is not because of exclusion by men, but it has different unclear reasons. If sport is a symbol for masculinity, women might participate more in order to gain the same power, status and respect as men, since women are more emancipated and equal to men in daily life. Nevertheless, gender differences have not disappeared yet.

Hypothesis 1: Men participate more in sports compared to women, controlled for educational level, age, ethnic origin, labor market position and household composition

2.1.2 Age

Just as for gender, the difference in sport participation can be found between age groups as well. The main reason for the decreasing sport participation when becoming older is the human body that becomes less athletic when getting older. Besides the ability of the body to participate in sports Inglehart (1997) states that sport participation is also depending on the time in which people grew up, nowadays sport participation is a part of daily life. Inglehart assumes that younger people grew up in a time of safety and social and economic security and have more post-materialistic beliefs. Therefor they have the ability to focus on things in life not concerning the basic needs of life. Personal development, freedom and quality of life became more important which gave them the opportunity to participate in sport more than older people.

Hypothesis 2: Sport participation will be lower for older respondents, controlled for educational level, gender, ethnic origin, labor market position and household composition.

2.1.3 Household composition

Nevertheless, there could also be an effect of the life course stage on sport participation. At a certain age other things besides sports demand more attention. The expression 'time is money' is the starting point of the theory initiated by Szalai (1986). Time is volatile and can be saved, spent or wasted just as money. The comparison between time and money is made since we got paid for the amount of time we worked in the factories. Time is scarce and can be used only once and it is a person's responsibility to divide his time. At a young age there are only a few choices to be made when it comes to spending time, but at an older age time has to be divided between more things. For instance, studying, having a job, being married and having children are factors that will take away time that was available for sport before. The Netherlands Institute for Social Research found evidence that mainly parents with children living at their home spent less time on sports.

Hypothesis 3a: Sport participation will be dependent on household composition, controlled for educational level, gender, ethnic origin, labor market position and age.

Hypothesis 3b: Sport participation will be lower when someone is employed or self-employed compared to non-active (on the labor market) people, controlled for educational level, gender, ethnic origin, household composition and age.

2.1.4 Educational level

Income and education influence the socio-economic status which is an important determinant in sport-participation (e.g. Corti, 2002; Crespo, 2000; Fromel, 2008; Kahma, 2010; Kamphuis, 2008; Popham, 2007; Scheerder, 2005; Raudsepp, 2006; Wagner, 2003). With more money to spent one is able to afford membership and necessary materials to participate in sport. High classes are generally higher educated and being higher educated makes people more aware in which way they can maintain a healthy lifestyle. Participating in physical activity is a way to keep the body healthy and the differences between social classes can be seen in the degree of healthy behavior. Therefore it can be expected that high educated participate more in physical activity. Also the higher educated group generally has more money to spent on a healthy lifestyle. They can buy healthy food and pay the fees and the

materials that come with participating in physical activities and the benefits of sport might be more focused on improving health or to relax.

Hypothesis 4: Sport participation will increase when the educational level is higher, controlled for household composition, gender, ethnic origin, labor market position and age.

2.1.5 Ethnic origin

With cultural globalization the growth and the exchange of cultural practices increased between people and nations. New technologies such as the internet and forms of mass communication have supported this trend. Societies became more differentiated and this is visible in sports as well, since sport is viewed as a cultural product. Caused by the globalization, societies were exposed to different meanings, beliefs and values. But, sport is like a universal language with the same rules for a sport all over the world. Despite cultural background, everybody can participate in sports, therefore it is likely that non-natives as well as natives participate in sports. Both Bourdieu (1979) and Putnam (2000) came up with theories on the function of sport regarding to class. They both start their theories with the expectation that all classes are able to participate in sport. Where Bourdieu emphasizes on the important role of sports on homogeneous contact, Putnam emphasizes on the opportunity on a large scale on heterogeneous contact. However, Putnam and Bourdieu measured class by income level and not the ethnic origin both income classes and ethnic classes are different groups which might be affected by the bridging or dividing function of sport. In addition to Putnam and Bourdieu, Jarvie (2006) states that it is not a question whether groups or classes participate in sport, but that different social groups share different identities through sport. Social divisions outside sport will transfer into sports and sports clubs. These social divisions in- and outside sport vary between regions, countries and cultures. The different social identities as well as educational levels will have different values and benefits of sports. Non-natives might participate in sports to acquire new acquaintances, make friends, tolerance, solidarity and meet people from other cultures while natives probably have different benefits of sport. Nevertheless, it is likely that both groups equally participate in sport regardless of homogeneous or heterogeneous contact.

Hypothesis 5: Ethnic origin has no influence on sport participation level, controlled for household composition, gender, educational level, labor market position and age.

2.2 Macro level

After Veblen and Bourdieu, much research on class differences in leisure time spending would follow, and more specific research in the field of sports appeared. In the last decade the importance of government policies and politics received a growing attention in the literature on sport participation.

2.2.1 Governmental expenditure on sports and recreational services

Heinemann (2005), Bergsgard & Rommetvedt (2006), Riordan (2007), Lim et al. (2011) and Dennis & Grix (2012) all researched the interconnection between public policies and sports. They acknowledge that sport participation is considered as a way to achieve certain goals of public policy in the field of integration, health and education. Over the last few decades the European governments have expanded their concerns with health and social security into leisure and cultural life, including sport. In other words, sport has become more affected by and involved with public policymaking. Bergsgard & Rommetvedt (2006) presented their research about the politics and sport in Norway. Although this article does not have a direct connection with sport participation or the encouraging of participation, it gives an overview of the interconnection of sport politics and politics in general. They compared both politics based on the importance of five dimensions: pluralization, parliamentarization, lobbyism and coalition building and whether sport policy imitates political trends. A significant comparison of both policies was concluded with the modernization theory as their theoretical basis. This case study particularly for Norway was based on the politics behind sport instead of sport participation, but since the policies behind sport influence sport participation it is an interesting addition to the literature of sport and politics. There is a pluralized and heterogeneous organization of sports in Norway, which was in accordance to the general societal trends and therefor a mirror image of the modernization process in society at large. Heinemann (2005) analyzed the interconnection between welfare states and sports systems in six European countries. This article provides a starting point for further analysis since Heinemann concludes that the institutional composition and the organization of the welfare society and the sport system both are based on four pillars: the state, the associations/clubs, the market and the informal sector. It is a descriptive study with a broad overview of the ideological basis of the welfare state and the connection with sport. The article describes the development of sport policy since the acknowledgement of the sport-for-all program in 1976 by the European Conference of Sport. The sport-for-all program states that countries should guarantee equal opportunities to engage in sport, regardless of gender, age, social class and ethnic origin. After this acknowledgement, sport became important for

the governments since the benefits of sport contributes to the goals of the public policies, as without the existence of sport the government would have to provide such organized activities in alternative ways to gain the same benefits. It contains an overview of the public support of sport activities in dollars in the countries, but no further analysis is done with those facts.

According to Green (2004), the government of the United Kingdom used a variety of sport and physical activity programs to realize social welfare and policy goals in education, health, integration, drug abuse and community safety. With their programs all citizens were enabled to participate in sports regardless of skills and social background. Besides governmental programs there are also foundations to support sport participation. For instance, in the Netherlands there is a foundation, Stichting Jeugdsportfonds, especially to support children up to eighteen years old to participate in sports. The foundation raises money which is redistributed among families without the financial resources to pay the fees and required attributes. According to Steele & Caperchione (2005), the role of the local government was to provide the sport infrastructure and facilities. By investing a significant amount of money in the sport infrastructure and facilities the government arranges more possibilities to participate in sports. Without the actual promotion of sport the government is still a major actor and contributes to the diminishing of separation by class in sports.

In short, governmental expenditure is expected to increase sport participation in two ways. First of all, governmental expenditure can be beneficial for individuals by financial support to pay for material and membership fees. This kind of support enables the less wealthy to participate in sports and reduces the restrictions. In the second place, governmental expenditure is beneficial at the community level and neighborhoods through financial support. With the help of government money public facilities are built which are available for everybody. On the other hand, governmental expenditure might only be helpful for the less wealthy people, because wealthy people are less depending on the financial support of the government. In countries with a higher GNI per capita it is likely that the citizens have more money available to spend on things other than the basic needs such as sport. Keeping that in mind it can be expected that the impact of governmental expenditure on sport participation depends on GNI.

Hypothesis 6a: With a higher governmental expenditure on sports the sport participation in a country is higher, controlled for compositional differences.

Hypothesis 6b: There will be a negative interaction effect between governmental expenditure and GNI per capita on sport participation, controlled for compositional differences.

2.2.2 Sport infrastructure

Besides governmental expenditure on sports and GNI the way sport is organized in a country is also determining the sport participation in a country. The organizational context of sports provide the possibilities to participate in sports. According to Steele & Caperchione (2005), the role of the local government is to provide the sports infrastructure and facilities and a part of the infrastructure are the sport clubs and federations. Lim et al. (2011) acknowledge that the sport delivery system influenced sport and structural as well as individual factors have an impact on sport experiences, patterns and motives. Sport delivery systems influence sport participation by its accessibility for citizens. With their research Lim et al. tried to identify factors that differentiated the sport participation level. According to Lim et al. there are three distinctive sport delivery systems, the school-based American sport system, the club-based Dutch sport system and the integrated Korean sport system. The school-based American sport system is the system similar to the American system, where almost all sports, practices and competitions are provided by schools. The club-based Dutch sport system stands for the organization of sports through sports clubs. A sports club is a public or private organization for athletes and sports enthusiasts and for the purpose of playing sports. Sports clubs are local organizations where members can develop and test their skills in a certain sport. The budgets of sports clubs are made up of rental payments for the use of facilities and member fees. On the amateur level sports clubs mostly are organized around volunteers throughout Europe. Volunteers allow sport clubs to provide sport without financial barriers for its participants. Sport clubs are mainly on the municipal level and dedicated to a single sport. The more sport clubs in a municipality the more accessible sports become in that area. The integrated Korean sport system is a combination of sports based in schools, private institutes and sport clubs. In all three countries is sport participation valued, but a different system is used to provide sport. Although they focus on sport delivery systems they acknowledge several barriers towards sport participation including time, money and family obligations. When comparing the United States, the Netherlands and the Republic of Korea they note the tendency for sport to become more of a government responsibility and the role of the government in breaking down barriers. Lim et al. conclude that sport delivery systems which are more readily accessible or predictable and sport delivery systems that

create social opportunities may be keys to increasing sport participation. The Dutch system seems to be the most readily and accessible for youth and adults. It provides a predictable and consistent infrastructure of available sport participation options. The presence of sports clubs throughout the country creates a familiar and safe environment for those who played sport before or somewhere else. The predictability of the presence of sport clubs throughout the country creates a church like community building function of sports clubs. With the secularization in the past decades other community building and social groups are desirable and sports clubs could increase the sense of community. In conclusion it is clear that sport covers more aspects in the form of social opportunities which contributes to the statement of Heinemann (2005) about the importance of the existence of sport for a government.

The sport delivery system in a country determines the accessibility of sports for its citizens. The more accessible a sport delivery system is, the higher the chances are that people participate in sports. An accessible sport delivery system is the club-based Dutch sport system. Regardless of level everybody is able to join a club in contrast to the school-based American sport system. In the school-based system only the best athletes are able to join since they represent their school in competition. Within this system organized sports are not much offered to other students or people and clubs hardly exist. Therefore, it is likely that the sport clubs increase sport participation in a country and the more sport clubs a country has per square kilometer will lead to a higher sport participation rate.

Hypothesis 7: The higher the density of sport clubs in a country, the higher the sport participation rate is in a country, controlled for governmental expenditure on sport, economic affluence of a country and compositional differences.

Furthermore, sports federations are a major resource for many sports associations and clubs. The sports federations are national non-governmental organizations administering one or more sports at world level, while conserving their independence and autonomy in the administration of their sport. The sports federations have the responsibility and duty to manage and to monitor the everyday running of the world's various sports disciplines (“International Sports Federations”, 2013). Sport clubs are affiliated with the federation of their sport discipline and pay contribution to that federation. In return federations will act according to the benefits of the clubs and associations in the sense of sport promotion, organization and development. Often sport federations are the link between the national and

international organized sports. The sport federations fulfill the needs of the recreational as well as the competitive athletes in their way of organizing sport.

At the recreational level sports federation have an important role when it comes to membership expansion. However, individuals are members of clubs and associations the federations benefit from more members in their discipline. The sport federations benefit since they receive membership fees from the clubs for every member. In return sport is promoted at the individual level by the federations and it is expectable that a larger federation has more money to spend on promotion of sports and thus leads to more sport participation.

Sport federations organize and promote a certain sport. The federations are an overarching organization that helps the clubs attract new members and excite spectators about the sport by publicity, financial support, competition and policy advice. Many clubs benefit from the efforts of sport federations and it is likely that a well-promoted sport attracts more people. If every sports federation stimulates and promotes their sport it is likely that more federations will lead to more people participating in sports.

Hypothesis 8: A higher number of sport federations will lead to more sport participation, controlled for governmental expenditure on sport, economic affluence of a country and compositional differences.

2.2.3 Communism

Dennis & Grix (2012) present evidence of the use of sport for political purposes contrasting to Bergsgard & Rommetvedt and Riordan. During the dictatorship of Hitler (1933-1945) Germany hosted the Olympics games in 1936. These Olympics are recognized as the first use of sport for political purposes. These purposes were not a result of modernization, but a result of propaganda by Hitler's ministers Riefenstahl and Goebbels. The 1936 Olympics were a way for the German government to show the physically perfect athletes of the Third Reich and link these to the ancient Greek origins of the Olympic Games. According to Dennis & Grix; "Sport lends itself to the simplistic narratives of dictatorships, for example, the batch of binary opposites in sport's arena assist in drawing comparisons"…"Furthermore, modern sport, with its emphasis on measuring performance dovetails with the crass racial distinctions made by the Nazis." Besides racial profiling as Germany did, there are more political purposes to promote successful athletes.

Riordan (2007) found corresponding evidence in communist countries to the findings of Bergsgard & Rommetvedt. Communist countries drew attention because of their success at

Olympic Games, summer and winter. According to Riordan sport in most communist states had the revolutionary role of being an agent of social change. Since communist countries in theory do not have different social classes, sport could not be used to promote a certain class/group of the communist society. In communism sport is seen as a social good which are provided by the country to its citizens. Social goods are allocated on the basis of the needs and ability of citizens. Sports, culture, education, health and justice are goods that are provided without exclusion and without a set quantity and thus available for everyone (Screpanti, 2004). Sport is not a good that operated on the basis of supply and demand. In communist societies sport is a tool to justify the meritocratic beliefs and sport enables the government to use the success in sports as a result of the communist ideology. When an athlete is successful, than the government is successful as well, because they created the athlete by giving him the opportunity to be successful (Westerbeek, 2007). With sport success as a major promoter of the communist beliefs it is likely that there were many opportunities to participate in sports. In communist countries success in sport was used to gain international prestige and prove the rest of the world the success of their ideology. For instance, East-Germany went from the 15th place to the 2nd on the medal rankings between the summer Olympics of 1956 and 1976. Besides other motives to participate in sport government support was important, because successful athletes were rewarded with prestige, jobs and housing. According to Lowi (1974) sport is also used as a socialization tool. Sport can transfer values as fair play, equality and abiding the rules to the society and it makes participants and spectators to share common feelings of pride, identity and patriotism with each other. During the communist regime sport played an important role, but nowadays former communist countries transitioned into capitalist countries and this transition was at the expense of sport. Many other policy areas drew the attention in the transition and sport might transitioned to the private sector as well. Therefor is it expectable that nowadays former communist countries do not have a higher sport participation rate than other countries.

Hypothesis 9: Former communist countries do not have higher sport participation, controlled for governmental expenditure on sport, economic affluence of a country and compositional differences.

2.2.4 Olympic success

A meta-analysis published on the impact of the sports role models on participation in physical activity by Payne et al. (2002) showed the positive effect of successful athletes on sport participation. Successful sports people have been promoted to increase the sport

participation rates. Successful athletes encourage, promote and inspire people to engage in sports. Theories supporting this effect are the social cognitive theory; people learn new behaviors by replication of the successful actions of others, and the self-efficacy theory, similarity between role model and learner increases motivation. A high sport participation rate could be expected when a country has many successful athletes. For instance, Britain's Olympic success in the 2012 Olympics has led to an increase of 750,000 adults that play sport at least once a week. With many successful female athletes in the 2012 Olympics the growth in sport participation was even stronger for women in Britain. This increase of female participation closed a major part of the gap between men and women that still exists (The Guardian (UK), 06-12-12).

Hypothesis 10: Countries with more successful athletes have a higher sport participation rate, controlled for compositional differences.

2.3 Conceptual model

The hypotheses that are derived from the theory are presented in a conceptual model, which is presented in Figure 1.

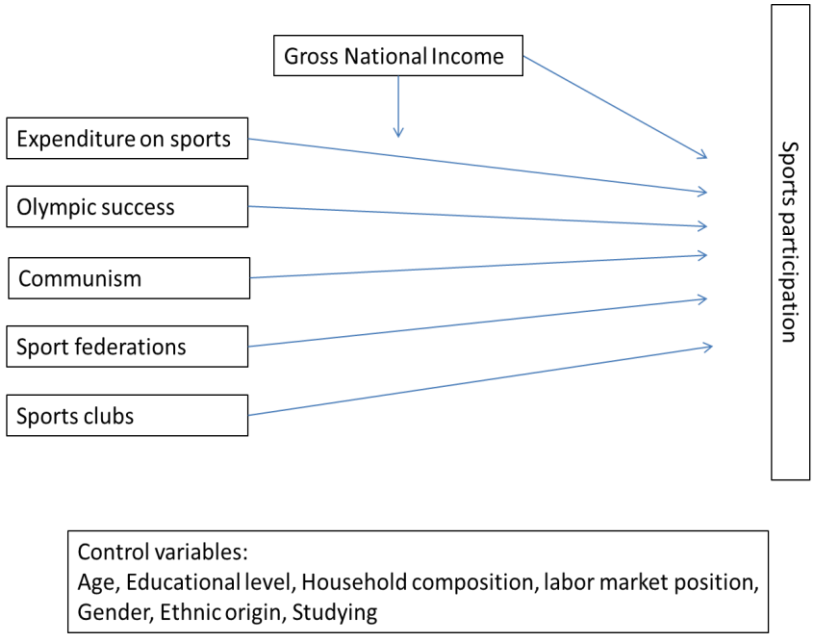

Figure 1. Conceptual model

3. Research design

The research design of this research consists of descriptive tables and figures and an ordered logistic regression. Initially, several descriptive tables and figures will be presented, which provide an overview of the patterns in the data before doing further analyses. An ordered logistic regression model for multiple categorical responses with macro level predictors will be used to assess contextual effects. The model allows us to test the effect of context controlling for composition effects. In the context of this research there are two levels of observation, the first level of observation are the individuals included in the Eurobarometer 62.0 and the second level of observation are the countries. The units of analysis are individuals.

3.1 Methods of data collection

To answer the research question the data of the Eurobarometer 62.0, Eurostat, European commission and the International Olympic Committee (IOC) are used. The Eurobarometer is an existing survey on the individual level. Eurostat provides governmental financial statistics at the country level and the IOC will provide information about the Olympic medal count and the number of sport federations in country. The data from the European commission contains information about the number of sport clubs and federations in a country. All the governmental financial statistics, sport clubs and the Olympic medal count will be corrected for a country's population size.

Eurobarometer 62.0: Standard European Trend Questions and Sport, 2004

This round of Eurobarometer surveys has been conducted in 2004 and contains face-to-face interviews of 29,334 respondents in 29 countries. The samples have been achieved by multistage national probability samples. The survey is mainly composed of trend questions, queried respondents on the standard Eurobarometer measures, such as how satisfied they were with their present lives, whether they attempted to persuade others close to them to share their views on subjects they held strong opinions about, whether they discussed political matters, what their respective country's goals should be, and how they viewed the need for societal change. Additional questions focused on the respondents' knowledge of and opinions on the European Union (EU). Another major focus of the survey was the subject of sport. Respondents were asked about frequency of participation, motivation to participate, benefits received and values promoted, what role the EU should play in regulating sport in Europe, and about negative issues associated with sporting activities. Background information collected includes respondents' age, gender, nationality, marital status, left-right political self-

placement, occupation, age at completion of education, type and size of locality, and region of residence.

The unit of observation of this survey is individual and citizens of the EU aged 15 and over residing in the EU member states of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom, plus the citizens of the four EU candidate countries: Bulgaria, Croatia, Romania, and Turkey had the chance to be included.

3.2 Strategy for analysis

First of all, the research will start with a descriptive analysis of the variables on sport. Differences in values, benefits, locations, gender, educational level, income, ethnic origin and frequency of sport will be presented by country. Further, in this research is the impact of contextual effects assessed by looking at logistic regression coefficients. An ordered logistic regression is used since the dependent variable has more than two categories and the values of each category have an order where a value is higher than the previous one.

In order to extract contextual effects the standard errors are adjusted for clusters in the country variable. Since two respondents selected at random from the same country are expected to respond more similarly than two respondents randomly selected from different countries this method of correcting the standard errors is used to account for the intraclass correlation. In that way the similarities for respondents within countries do not violate the assumption of independent observations. Without adjusting for clusters it is assumed that each observation of a respondent within a country is independent of another respondent in the same country. Although an ordered logistic regression adjusted for clusters is a slightly weaker method it is very similar to a multi-level model.

The statistical programs Stata and SPSS were used in order to analyze the data. The ordered logistic regression is applied using Stata and SPSS is used for the preparation and description of the data. Both programs were necessary since SPSS is not able to establish logistic models for ordinal dependent variables. The ordered logistic regression model provides the ordered log-odds estimate for one unit increase in an independent variable score. Basically, a positive coefficient indicates an increased chance to be observed in a higher category of sport participation when all other variables are held constant and on the other

hand a negative coefficient indicates an increased chance to be observed in a lower category of sport participation.

The ordered logistic regression assumes that the relationship between each pair of outcome group of the dependent variable is the same. In other words, the regression assumes that the coefficients that describe the relationship between the lowest sport participation level versus the higher categories are the same as the coefficients that describe the next lowest sport participation level versus higher sport participation levels. In short, the ordered logistic regression assumes an equal regression coefficient for each dependent variable category which only differs on the intercept. This proportional odds assumption is tested with a Wald test by Brant. The Brant test provides both a global test of whether any variable violates the proportional odds assumption, as well as tests of the assumption for each variable separately.

3.3 Operationalization

The impact of contextual effects will be measured according to the general governmental expenditure on recreational and sporting services per capita, Olympic success, communist background, number of sport federations, sports clubs per square kilometer and Gross National Income per capita (GNI).

Sport participation. The dependent variable sport participation will be derived from the Eurobarometer. The Eurobarometer includes the question "How often do you exercise or play sport?" This will give an indication on the individual level of sport participation. This variable ranges from one to five and the categories are; never (1); less often (2); 1 to 3 times a month (3); 1 to 2 times a week (4); 3 times a week or more (5).

Governmental expenditure on sports. The general governmental expenditure on sports and recreational services variable varies between countries and is an indicator which correspondents to the governmental expenditure on sport and shows the priority of sport by the government between European countries. To fairly compare countries of different sizes, the general governmental expenditure on recreational and sporting services will be divided by the number of citizens in a country. In that way it is fair to compare countries of different sizes. The governmental expenditure is derived from Eurostat, which is the statistical office of the European Union situated in Luxembourg. Its task is to provide the European Union with statistics at European level that enable comparisons between countries and regions. The statistic that is used from the Eurostat database is the General Government Expenditure on Recreational and Sporting services. This variable is available for 24 countries in Europe in

2004. This variable is included because it gives the most accurate information for expenditure on sport for this many countries. Although there is more recent data, the statistics of 2004 are included as a variable since the Eurobarometer which provides the individual variables is conducted in 2004. Population is also derived from Eurostat and it contains the inhabitants of a given area on 1 January of 2004. The population is based on data from the most recent census adjusted by the components of population change produced since the last census, or based on population registers.

Olympic success. The effect of successful role models will be measured by success at the Olympic Games. The Olympic Games are the world's most prestigious sporting events and success at those events gets a lot of attention. Therefor the number of medals won at the Olympic Games will provide the success rate of sports in a country. The medal count will be divided by the number of citizens in a country, because a large population means a large pool of potential successful athletes. Although one athlete can win multiple medals or one medal is won by a team it is still an indicator for the success of athletes and the sport program in a country.

Communism. Communism will be added as dummy variable. Communism will divide countries with a former communist background and those without a communist background. In this way the effect of former communist countries on sport participation can be assessed.

Sport infrastructure. The sport infrastructure in countries will be measured by the number of federations and sports clubs in a country. The federations and clubs are based on findings of the European Commission in a research on volunteering. The sport clubs are divided by the surface of a country to make them comparable with each other on the accessibility of sports clubs. In this way the density of sport clubs per country can be compared.

Gross National Income. GNI per capita is the gross national income per capita, converted to single U.S. dollar units. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. GNI, calculated in national currency, is usually converted to U.S. dollars at official exchange rates for comparisons across economies (The World Bank, 2013).

Countries. In total 24 countries are included with a 23,621 respondents. Included countries are France, Belgium, The Netherlands, Germany, Italy, Luxembourg, Denmark,

Ireland, Great Britain, Greece, Spain, Portugal, Finland, Sweden, Austria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia. Excluded countries are Norway, Bulgaria, Romania, Turkey and Croatia, because there was not enough data available for these countries. East and West Germany were merged into Germany, because relevant macro data was only available for Germany. The same is done with Northern Ireland and Ireland. Finally, Belgium is excluded from the analyses because they are a major outlier on the governmental expenditure on sports and recreational services. This is mainly because the expenditure of Belgium is derived from a different source than all other countries. Therefor it is questionable whether Belgium's expenditure on sports is based on the same criteria as the criteria of Eurostat and it is decided to exclude Belgium.

Educational level. The educational level is added as a continuous variable which is an indicator derived from the age when education was completed. The assumption is made that the higher the age of a respondent when education is completed, the higher the educational level is. There is a possibility that someone took an extra year before completing education, but that will be a small group of respondents and is there for negligible. The variable will range from 0 to 9, were 0 indicates no full education, 1 indicates up to 14 years of education and 9 indicates 22 or more years of education. Each of the categories in between add one year of education to the previous category.

Studying. The variable studying indicates whether someone is still studying or already stopped or completed a full time education. The variable is added since the group of students otherwise would have been deleted from the data and it is an addition to the analyses. With this information the difference between sport participation of students and non-students can be assessed. It is a dichotomous variable that ranges from 0 to 1, students are assigned to 1 and non-students to 0.

Labor market position. The variable labor market position is derived from the question about the occupation of the respondent. The distinction is made between non-active (1), employed (2) and self-employed (3). This classification is used because it is the most accurate measurement of labor market position and between these groups is the assumed hours spend on work different. Self-employed are expected to work longer hours than employed and non-active.

Household composition. The variable household composition represents the home situation of a respondent. Whether a respondent is a couple with a partner, has a younger or older child or no children at all. In total there are eight different categories to represent every possible household composition. In this classification are 'young children' aged 15 and younger. The group 'old children' are aged 15 and over. The categories are; alone (1); separated, but young children (2); couple (3); couple with young children (4); separated, but old children (5); separated, but young and old children (6); couple with old children (7); couple with young and old children (8). This classification is used because the different compositions have different effects on the leisure time to be spent by the respondent.

Ethnic origin. Ethnic origin is based on the origin of the respondent. When a respondent is born in the country where the interview is conducted than the respondent is labeled as a native (1). If the respondent is not born in the country where the interview is conducted than the respondent is labeled as non-native (0).

Gender. The variable is used as it is available in the Eurobarometer. Men and women are separated to check for gender differences in sport participation within the EU. It is a dichotomous variable that ranges from 0 to 1 where men are assigned to 1 and women to 0.

Age. Age is used as a continuous variable. It ranges from 15 to 97 years old.

3.4 Descriptive statistics

The descriptive statistics of the used variables are presented in the tables on the next two pages. In Table 1 the distribution of the categorical individual variables is presented. Table 2 shows the continuous individual variables and Table 3 presents the descriptive statistics of the contextual variables.

Table 1. Descriptive statistics categorical variables

Descriptive statistics categorical variables		Frequency	Percentages
Sports participation frequency	Never (1)	9620	41%
	Less often (2)	3501	15%
	1 to 3 times a month (3)	1765	7%
	1 to 3 times a week (4)	4648	20%
	3 times a week or more (5)	4174	18%
Household composition	Alone (1)	5831	25%
	Not living together, young children (2)	727	3%
	Living together, no children (3)	6305	27%
	Living together, young children (4)	3665	15%
	Not living together, old children (5)	1868	8%
	Not living together, young and old children (6)	804	3%
	Living together, old children (7)	2697	11%
	Living together, young and old children (8)	1748	8%
Labor market position	Non-active (1)	12154	51%
	Employed (2)	9796	41%
	Self-employed (3)	1669	7%
Gender	Female (0)	13385	56%
	Male (1)	10321	44%
Studying	Not studying (0)	21678	91%
	Studying (1)	2030	9%
Ethnic origin	Non-native (0)	1199	5%
	Native (1)	22473	95%
Communism	Not communist (0)		59%
	Former communist (1)		41%
Valid N		23621	

Source: Eurobarometer 62.0

Table 2. Descriptive statistics continuous variables

Descriptive Statistics continuous variables	N	Minimum	Maximum	Mean	Std. Deviation
age	23657	15,00	97,00	47,217	18,214
Educational level	23708	0,00	9,00	4,486	3,029
Valid N (listwise)	23657				

Source: Eurobarometer 62.0

Table 3. Descriptive statistics context variables

Descriptive statistics context variables	FR	NL	DE	IT	LU	DK	IE	GB	GR	SP	PT	FI	SW	AT	CY	CZ	ES	HU	LV	LT	MT	PL	SK	SI
Governmental expenditure on sports (per capita, in millions of euros)	8396	2961	6790	4644	115,6	936,4	321,9	6218,1	351	2973	590	710	1105,5	699,8	53,9	358,1	41,8	217,8	83,1	27,3	4,5	499	442	71,1
GNI (per capita)	30420	35430	30750	26980	58610	41560	35720	34570	18470	21590	15850	33980	37190	32520	18410	9750	7570	8540	5460	5870	12940	6270	8800	15400
Federations	120	73	97	45	61	60	33	34	29	64	64	76	50	59	48	95	63	78	15	35	44	38	39	94
Clubs (per square kilometer)	271,82	650,6	263,31	232,33	596,15	237,75	36,91	435,48	21,21	186,98	108,58	35,49	48,86	290,44	64,52	117,11	50,88	57,9	15,98	26,38	3166,67	14,92	183,67	354,68
Success	765	352	763	655	4	180	28	802	110	133	23	458	612	287	1	59	40	482	22	21	0	285	28	26
Communism	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	1

Source: Eurostat, 2004; The World Bank, 2013; GHK, 2010; IOC, 2013

4. Results

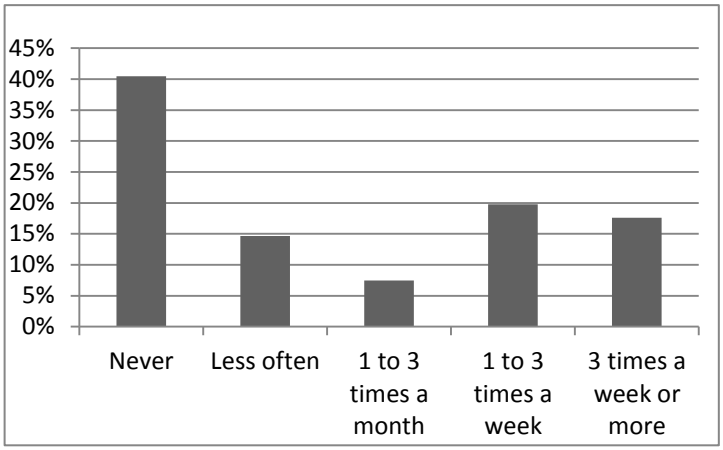

Figure 2. Mean sport participation rate of all included European countries. Source: Eurobarometer 62.0

According to the Eurobarometer 62.0, 59.5% of the inhabitants of the included countries participated in sports. It varies from 3 times a week or more to less than once a month, but they at least participate in sports. In 2004, 37.4% participated intensively in sports since they practiced sports at least once a week as Figure 2 shows. On the other hand 40.5% is never participating in sports at all, mainly because they do not have time (35.6%) or they do not like sports (21.5%). Of all the people who participate in sports they mainly participate to improve one's health. Besides health, people participate to relax and develop physical performance and almost nobody is participating to meet people from other cultures. Discipline and team spirit are the most important values of sport according to the respondents of the Eurobarometer 62.0.

Figure 3 presents the differentiation in sport participation between countries. In Finland the most people are participating in sports as well as the most frequently and in Hungary and Portugal sport participation is the lowest and least frequent of all included countries. A geographical structure in the frequency of sport participation can be derived from this figure. The Scandinavian countries have the highest levels of sport participation and the lowest levels can be found in the southern and eastern European countries with exception of Malta and Lithuania which have levels of participation above the European average.

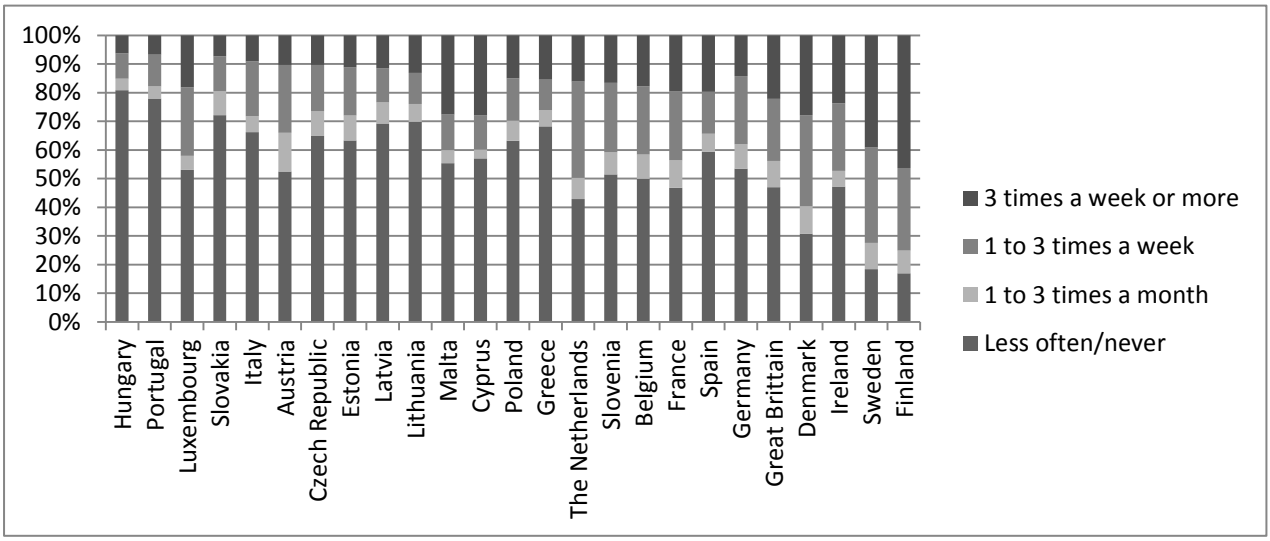

Figure 3. Sport participation rate divided by country and level of participation. Source: Eurobarometer 62.0

Figure 4 shows the variety between countries of places where sport is practiced. On average most of the sports are practiced at clubs or fitness centers and the least practiced at schools and universities. Of all people who participate in sport, 15% practiced sport at a sport club, 14% did so in a fitness center and only 6.4% played sport at a school or university. In many eastern European countries, Latvia, Lithuania, Hungary, Poland, Slovenia and Estonia, sport is mainly practiced at schools or universities, while in western European countries, France, Luxembourg, Belgium, Denmark, Finland and The Netherlands, sport is mainly practiced at a sport club. This indicates different sport infrastructures between the eastern and western countries in Europe.

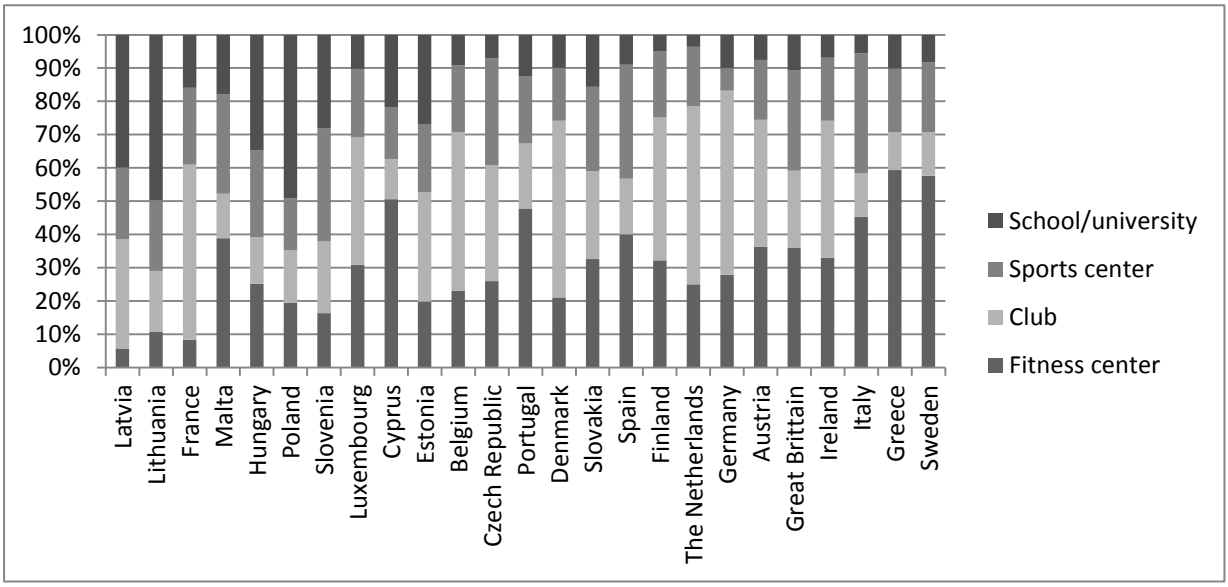

Figure 4. Places where sports are practiced by country. Source: Eurobarometer 62.0, 2004.

The social differentiation of sport in Europe is presented in Table 4. Within all the countries men and women are almost equally participating at least once a month in sports. Of all the men 49% participates in sport and 51% does not participate at all. Of all the women 42% participates in sport and 58% does not participate at all. According to these percentages there is not a large difference in sport participation between men and women anymore. It seems that the gender differences are diminishing but have not disappeared yet. In Malta,

Table 4. Social differentiation of sport participation in Europe. Source Eurobarometer 62.0, 2004

		Sport	Never sport	Total
Gender	Men	49%	51%	100%
	Women	42%	58%	100%
Occupation	Non-active	39%	61%	100%
	Self-employed	46%	54%	100%
	Employed	52%	48%	100%
Studying	Not studying	57%	43%	100%
	Still studying	84%	16%	100%

Estonia and Lithuania almost 60% of the people who participate in sport at least once a month is female, but in most of the countries the difference between men and women is as the average in Europe. Of those who are still studying 84% participates in sport and only 16% never participates. The 84% that participates in sport of the people who are still studying is large if compared to the people who are not studying anymore. Of the people who are not studying only 57% participate in sport and 43% does not participate in sport at all.

In the last place, there is a large difference between being self-employed or employed and non-active. Only 39% of the non-active participates regularly in sport, while of the self-employed and employed respectively 46% and 52% regularly in sport participates. Even though the non-actives are expected to have more available time they do not participate more in sport.

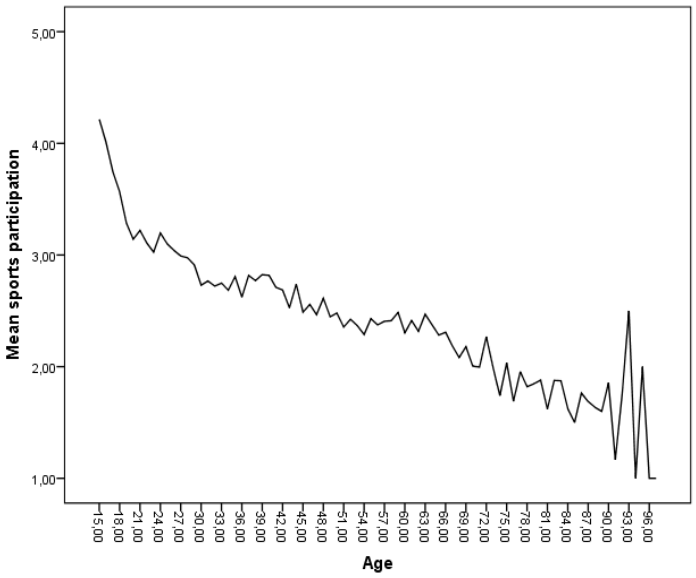

Figure 5. Mean sport participation rate by age. Source: Eurobarometer 62.0, 2004.

In Figure 5 the sport participation rate is set against the age of the respondents. The figure shows a steadily decreasing participation in sport with a slight lift around the age of 90. This slight lift is likely caused by the fact that there are only a few respondents of that age so the sport participation of one person has much more influence and can raise the mean score easily. Overall the older someone becomes the less he will participate in physical activity. Nevertheless, people participate in sports until the age of 80. They do not participate often or intensively, but they are still physically active.

After assessing the social differentiation of sport participation the differentiation at the country level are assessed. In Figure 6 the difference in sport participation is set against the governmental expenditure on sports and recreational services per capita. As the scatterplot shows there is an outlier, Belgium, on the expenditure on sports. On the other hand there are two extreme values in the mean sport participation in Finland and Sweden, respectively averaging 4 and 3,86 on mean sport participation. The relationship between sport participation and governmental expenditure on sports, Olympic success, federation and club density was

investigated using Pearson correlation coefficient. There is a small, positive correlation between sport participation and governmental expenditure, r=.22, n=23621, p= < .05, with higher levels of expenditure associated with higher levels of sport participation. There is also a small, positive correlation between mean sport participation and Olympic success, r = .11, n = 23621, p = < .05, with higher levels of Olympic success associated with higher levels of sport participation. The correlation between sport participation and the number of clubs and federations in a country is negligible. On the other hand, the correlation between Gross National Income and Governmental expenditure is large (r=.866, N=23621, p=<.001).

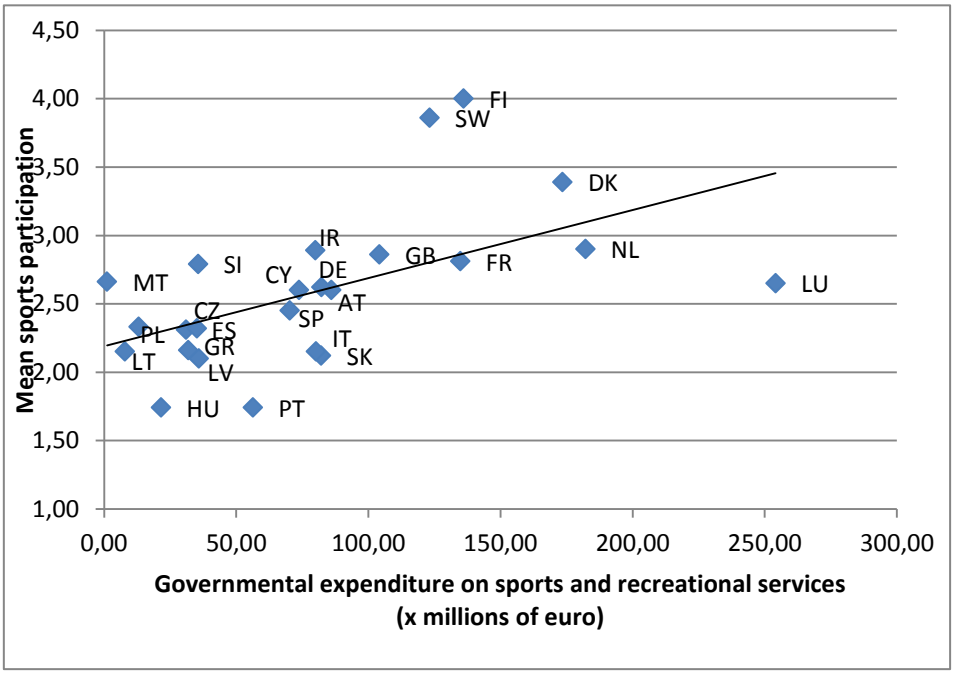

Figure 6. Mean sport participation by governmental expenditure on sports. Source: Eurobarometer 62.0, 2004.

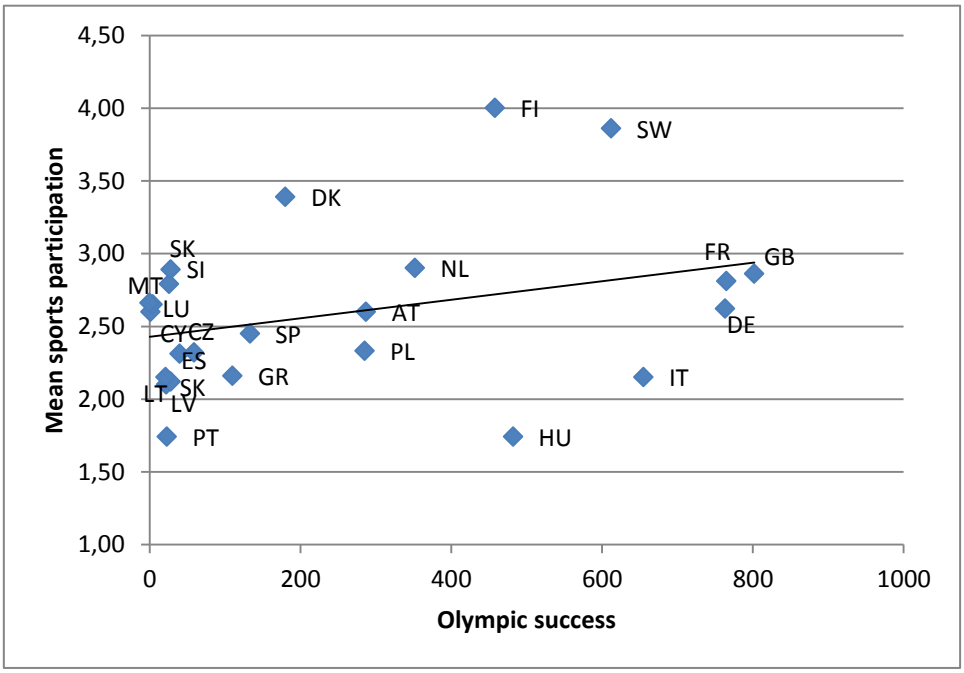

Figure 7. Mean sport participation by Olympic success. Source: Eurobarometer 62.0, 2004.

Table 5. The ordered logistic regression models 1: Sport participation level explained by country dummies

	Model 1	
	Coef.	S.E.
France	-0,077***	0,013
NL	0,044**	0,015
Germany	-0,077***	0,012
Italy	-0,983***	0,031
Luxembourg	-0,213***	0,016
Denmark	0,520***	0,031
Ireland	0,282***	0,018
Brittain	0,227***	0,020
Greece	-1,014***	0,032
Spain	-0,318***	0,023
Portugal	-1,364***	0,037
Finland	1,509***	0,047
Sweden	1,040***	0,039
Austria	-0,146***	0,011
Cyprus	-0,182***	0,015
Czech	-0,428***	0,019
Estonia	-0,604***	0,018
Hungary	-1,211***	0,030
Latvia	-0,961***	0,026
Lithuania	-0,855***	0,027
Malta	0,140***	0,035
Poland	-0,702***	0,020
Slovakia	-0,680***	0,024
Slovenia	(omitted)	(omitted)
Female (ref)	ref.	
Male	0,227***	0,056
Non-native (ref)	ref.	
Native	0,0791068	0,062
Age	-0,024***	0,003
Non-active (ref)	ref.	
Employed	0,064	0,045
Self-employed	0,062	0,073
Educational level	0,144***	0,013
Completed study (ref)	ref.	
Still Studying	1,390***	0,194
Alone (ref)	ref.	
Seperated, Young children	0,025	0,082
Couples	0,068*	0,029
Couples with young children	-0,086	0,052
Seperated, Old children	0,187*	0,080
Seperated, Young & old children	0,271***	0,085
Couples with old children	0,177***	0,046
Couples with young & old childrer	-0,053	0,053
Intercept (never)	-0,820	0,176
Intercept (less often)	-0,053	0,176
Intercept (monthly)	0,333	0,176
Intercept (weekly)	1,529	0,178
N	23621	
Pseudo R2	0,095	
log likelihood	-31.363,467	

Source: Eurobarometer 62.0

Note: Standard Errors are controlled for clusters within countries

* p<0,05, **P<0,01, ***p<0,001

Table 6: The ordered logistic regression models 2, 3, 4 and 5: Sport participation level explained by governmental expenditure on sports, GNI, Communism and Olympic success

	Model 2		Model 3		Model 4		Model 5	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Female (ref)	ref.		ref.		ref.		ref.	
Male	0,233***	0,058	0,224***	0,058	0,222***	0,057	0,251***	0,053
Non-native (ref)	ref.		ref.		ref.		ref.	
Native	0,122	0,109	0,184**	0,108	0,195*	0,097	0,030	0,107
Age	-0,022***	0,004	-0,022***	0,004	-0,022***	0,004	-0,020***	0,004
Non-active (ref)	ref.		ref.		ref.		ref.	
Employed	0,095	0,057	0,076	0,054	0,077	0,053	0,127*	0,063
Self-employed	0,004	0,079	-0,050	0,076	-0,039	0,078	0,012	0,091
Educational level	0,156***	0,015	0,167***	0,013	0,165***	0,013	0,172***	0,016
Completed study (ref)	ref.		ref.		ref.		ref.	
Still Studying	1,44***	0,226	1,476***	0,216	1,478***	0,213	1,557***	0,231
Alone (ref)	ref.		ref.		ref.		ref.	
Seperated, Young children	0,020	0,081	0,028	0,085	0,030	0,085	0,049	0,078
Couples	0,083*	0,034	0,075*	0,032	0,074*	0,032	0,084*	0,036
Couples with young children	-0,100	0,064	-0,091	0,063	-0,088	0,062	-0,063	0,066
Seperated, Old children	0,112	0,081	0,121	0,083	0,126	0,086	0,077	0,086
Seperated, Young & old children	0,246**	0,085	0,287***	0,082	0,288***	0,083	0,247**	0,088
Couples with old children	0,081	0,086	0,104	0,079	0,106	0,081	0,041	0,095
Couples with young & old childrer	-0,126	0,078	-0,072	0,070	-0,070	0,071	-0,130	0,080
Governmental expenditure	0,007**	0,002	-0,001	0,003	-0,001	0,003		
GNI			0,00003***	0,00001	0,00004***	0,00001		
Non-communist past (ref)					ref.			
Communist past					0,120	0,270		
Olympic succes							0,001	0,0004
Sports club density								
Federations								
GNI*Governmental Expenditure								
Intercept (never)	0,183	0,276	0,516	0,265	0,650	0,344	-0,037	0,257
Intercept (less often)	0,903	0,279	1,245	0,261	1,380	0,344	0,669	0,261
Intercept (monthly)	1,267	0,282	1,615	0,262	1,749	0,346	1,024	0,265
Intercept (weekly)	2,400	0,275	2,759	0,259	2,893	0,351	2,135	0,258
N	23621		23621		23621		23621	
Pseudo R2	0,067		0,072		0,072		0,058	
log liklihood	-32.347,331		-32.170,769		-32.165,070		-32.651,547	

Source: Eurobarometer 62.0 * p<0,05, **P<0,01, ***p<0,001

Note: Standard Errors are controlled for clusters within countries

Table 7: The ordered logistic regression models 6, 7, 8 and 9: Sport participation level explained by governmental expenditure on sports, GNI, Olympic success, Federations and Clubs.

	Model 6		Model 7		Model 8		Model 9	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Female (ref)	ref.		ref.		ref.		ref.	
Male	0,228***	0,058	0,225***	0,059	0,223***	0,058	0,222***	0,059
Non-native (ref)	ref.		ref.		ref.		ref.	
Native	0,126	0,107	0,191	0,105	0,185	0,108	0,143	0,081
Age	-0,022***	0,004	-0,022***	0,004	-0,022***	0,004	-0,022***	0,004
Non-active (ref)	ref.		ref.		ref.		ref.	
Employed	0,093	0,056	0,079	0,053	0,075	0,054	0,062	0,057
Self-employed	0,004	0,078	-0,045	0,075	-0,047	0,076	-0,070	0,080
Educational level	0,157***	0,015	0,168***	0,013	0,167***	0,013	0,169***	0,014
Completed study (ref)	ref.		ref.		ref.		ref.	
Still Studying	1,451***	0,224	1,491***	0,211	1,477***	0,217	1,492***	0,220
Alone (ref)	ref.		ref.		ref.		ref.	
Seperated, Young children	0,021	0,081	0,030	0,086	0,031	0,084	0,031	0,088
Couples	0,082*	0,034	0,074*	0,032	0,073*	0,033	0,074*	0,031
Couples with young children	-0,090	0,060	-0,096	0,062	-0,089	0,063	-0,084	0,062
Seperated, Old children	0,135	0,075	0,115	0,083	0,125	0,081	0,121	0,080
Seperated, Young & old children	0,265***	0,079	0,280***	0,084	0,292***	0,081	0,289***	0,080
Couples with old children	0,098	0,076	0,096	0,074	0,108	0,076	0,113	0,075
Couples with young & old children	-0,101	0,063	-0,076	0,070	-0,066	0,068	-0,069	0,066
Governmental expenditure	0,006**	0,002	-0,0004	0,003	-0,001	0,003	0,005	0,004
GNI			0,00003***	0,00001	0,00004***	0,00001	0,00004***	0,00001
Non-communist past (ref)								
Communist past								
Olympic succes	0,0003	0,0004						
Sports club density			0,0001	0,0002				
Federations					0,001	0,002		
GNI*Governmental Expenditure							-0,00000014	0,0000001
Intercept (never)	0,263	0,290	0,547	0,247	0,575	0,296	0,7264964	0,345
Intercept (less often)	0,985	0,296	1,276	0,242	1,305	0,290	1,457917	0,345
Intercept (monthly)	1,350	0,300	1,646	0,241	1,674	0,288	1,8277	0,345
Intercept (weekly)	2,484	0,297	2,790	0,232	2,818	0,279	2,972911	0,343
N	23621		32621		32621		32621	
Pseudo R2	0,067		0,072		0,072		0,073	
log liklihood	-32.321,578		-32.163,654		-32.168,351		-32.168,351	

Source: Eurobarometer 62.0 * p<0,05, **P<0,01, ***p<0,001

Note: Standard Errors are controlled for clusters within countries

First of all, a model is created as presented in Table 5 with the countries dummies and the individual variables added as independent variables to compare the explained variance in Model 1 to the models with contextual effects. The explained variance of this model is 9.5% (n=23621, -2LL= -31363.467). When taking the countries out of the model the explained variance of the control variables is 5.4% (n=23621, -2LL=-32773.814). There is a difference in the R^2 of 4.1% which might be explained by contextual effects.

Table 6 presents the results from the ordered logistic regression with the macro variables included. Throughout all the models there are several individual independent variables consistently significant. Gender, age, educational level and the 'still studying' variable are highly significant determinants of sport participation. With a coefficient around .22 men have an increased change they will be observed in a higher category than women. Regardless of the added context variables this coefficient and effect is maintained.

Age is again proven to be a negative determinant of sport participation. With the increase of age the chance to be observed in a lower sport participation category increases as well. Although the coefficient is .022 it is still a large effect since the variable age ranges from 15 to 97 with a standard deviation of 18.214.

In addition to the effect of gender and age there is also a significant effect of educational level on sport participation. When educational level increases people have an increased chance to be observed in a higher sport participation category. With a coefficient around 0.16 the effect of educational level remains consistent significant in all the models. Only when governmental expenditure is added in Model 2 and 6 the effect of education decreases to .15. As soon as other contextual effects are added the coefficient of education increases again.

Although the educational level of the students is still undetermined, students have a higher chance to be observed in a higher category than non-students,. There even is a chance that they will end up as low educated it is clear that while studying the sport participation level is higher than when you are not studying.

With regard to the household composition there is not a clear pattern distinguishable. Compared to those who live alone, only people who live together or divorced with young and old children have an increased chance to be observed in a higher category. The coefficient of

separated but with young and old children increases with .02 as soon as GNI is added to the model. GNI appears to suppress the effect of the separated with young and old children.

In Model 2 governmental expenditure on sports and recreational services is added to the regression. The effect of governmental expenditure, .007, is small, but significantly positive. The higher the governmental expenditure on sports and recreational services in a country the higher the chance individuals in that country are observed in a higher category of sport participation. Adding this variable to the model leads to a slight change in R^2. Although there is not much influence of this effect the R^2 increases to 6,7% after adding governmental expenditure on sports and recreational services.

In the second Model GNI is added to the regression. Although the effect of GNI is significant it appears to be very small, .0003. However, GNI is measured in single dollars and the effect, .0003, is the effect of a single dollar. The higher the Gross National Income per capita in a country the higher the chance to be observed in a higher sport participation category. GNI has also an effect on governmental expenditure. Adding GNI reverses the effect of governmental expenditure, but it is highly insignificant. With GNI in the model the explained variance increases to 7.2%.

In Model 4 the effect of communism is assessed while controlling for compositional effects, economic affluence and governmental expenditure. There is no significant effect of communism, but when it is added the effect of GNI increases to .0004.

In Model 5 the Olympic success variable is added, but has no significant influence on sport participation. The R^2 is 5.8% which is only 0.4% above the model without any contextual effects. Also when controlling for governmental expenditure in Model 6 (Table 7) the effect of Olympic success remains insignificant. The R^2 increases to 6.7% as it was in the first model as well with only the governmental expenditure variable added as a contextual indicator.

In the seventh and eight model the effect of sport infrastructure on sport participation is analyzed by the number of federations and clubs per square kilometer. While controlling for governmental expenditure and economic affluence there is no significant effect of sport infrastructure on sport participation. The explained variance is 7.2% as in Model 3 and Model 4 where GNI was added to the regression.

In the last model, Model 9, is the interaction effect between Gross National Income and Governmental expenditure added to the regression. This effect tests whether the impact of governmental expenditure on sport participation depends on GNI. The negative coefficient, -.000000142, of this interaction variable implies that an increase in governmental expenditure has a smaller effect on sport participation when the GNI is higher, but the coefficient is not significant.

In Table 8 the probabilities for the sport participation level are presented for men and women and it shows that there is a difference between men and women to participate in sports weekly or more than once a week of 6% when all other variables are held constant. On the other hand women have a 6% higher change to be observed in the category 'never' compared to men when all other variables are held constant.

As the coefficients already indicated, students have a chance of participating in sports at least once a week of 68%, while they have a chance of participating less than once a month of 25% when all other variables are held constant. It is clear that students are more active sports participants since not studying only has a 31% probability to sport at least once a week.

Table 8. Predicted probabilities of sport participation level for gender and studying

Predicted probabilities	Sport participation level				
	Never	less than once a month	Monthly	Weekly	more than once a week
Men	37%	17%	9%	21%	17%
Women	43%	17%	8%	18%	13%
Still studying	14%	11%	7%	27%	41%
Not studying	44%	17%	8%	18%	13%

5. Conclusion & discussion

During the past few decades sport participation has been rapidly growing regardless of the way sport is organized and where it can be practiced (e.g. school/university, public club or fitness/health club). The growth in sport participation is mainly due to the changing interest in sport by the people and the governments. Sport is nowadays mostly used as a tool to achieve goals, for instance, reducing obesity and improving social cohesion. Secondly, there is more demand for new kind of sports with a lower intensity and more lifestyle aspects (e.g. surfing, skating and snowboarding). In the third place, participating in sport became more of a normative behavior. Since engaging in sport touches many of the functions which can be assigned to public policy, such as integration policy, youth policy, health policy, educational policy, political policy and economic policy it is likely that the state supports sport participation, otherwise the state would have to provide such organized activities in another way. This research answers the question to what extent has the contextual factors an impact on sport participation? The following hypotheses were used to answer the research question:

1) Men participate more in sports compared to women, controlled for educational level, age, ethnic origin, labor market position and household composition.
2) Sport participation will be lower for older respondents, controlled for educational level, gender, ethnic origin, labor market position and household composition.
3)
    a. Sport participation will be dependent on household composition, controlled for educational level, gender, ethnic origin, labor market position and age.
    b. Sport participation will be lower when someone is employed or self-employed compared to non-active (on the labor market) people, controlled for educational level, gender, ethnic origin, household composition and age.
4) Sport participation will increase when the educational level is higher, controlled for household composition, gender, ethnic origin, labor market position and age.
5) Ethnic origin has no influence on sport participation level, controlled for household composition, gender, educational level, labor market position and age.
6)
    a. With a higher governmental expenditure on sports the sport participation in a country is higher, controlled for compositional differences.
    b. There will be a negative interaction effect between governmental expenditure and GNI per capita on sport participation, controlled for compositional differences.
7) The higher the density of sport clubs in a country, the higher the sport participation rate is in a country, controlled for governmental expenditure on sport, economic affluence of a country and compositional differences.

8) A higher number of sport federations will lead to more sport participation, controlled for governmental expenditure on sport, economic affluence of a country and compositional differences
9) Former communist countries do not have higher sport participation, controlled for governmental expenditure on sport, economic affluence of a country and compositional differences.
10) Countries with more successful athletes have a higher sport participation rate, controlled for compositional differences.

Data from the Eurobarometer 62.0 shows that men still participate in sport more frequently. The descriptive Table 2 showed that the difference between the number of men and women who participate in sports only was 7% in favor of the men. In addition, the difference between men and women was tested significant as well. Therefor the first hypothesis is accepted.

Further, the results show that age has a significant influence on the frequency of sport participation. Although sport is becoming more accessible for older people the frequency significantly decreases when someone becomes older. Hypothesis 2 is accepted. However, the frequency of sport participation decreases when becoming older it has to be noted that people still participate in sport at the age of 85. They do not participate often, but even for them sport is a part of life. It hints that sport is no longer something for the young and fit, but sport serves other purposes as well.

The effect of household composition on sport participation does not show a clear pattern. Compared to the people who live alone there are only two categories significantly differing. When living together with a partner people significantly participate in sport more frequently. On the other hand people who are divorced and have children younger and older than 15 years participate also more frequent in sport. These results are contradicting to the expected direction of the effect. Not only because a negative effect was expected, but the effect becomes bigger when someone has children. There might be a different explanation behind this effect, other than the time budget explanation. It is clear that participating in sports when having children or living together has nothing to do with available leisure time since in the categories as mentioned before the frequency goes up. The third hypothesis is neither accepted nor rejected since the effects are not found for all the household compositions.

Evidence for the fourth hypothesis is found in the analysis. Higher educated participate more frequent in sport. Educational level has a positive impact on sport participation. In addition, students participate even more in sport than high educated even

though their educational level is still undetermined and they can eventually end up as lower educated. The positive effect of still studying might have different explanations. There could be an effect of cohort involved in this effect. Perhaps the people who are still studying are belonging to a younger cohort which grew up and came more in contact with sport and see physical activity as a habit. Actually, to further test this idea of a cohort effect a longitudinal study should be done on this subject. Another explanation might be found in the fact that the educational systems are changing. With the European society becoming higher educated the craft schools start to disappear and there is less physical activity in the education. The longer someone studies the less physical activity is offered by the schools or universities. Students therefor have to participate in sports more to compensate sitting behind a desk, computer or book every day.

The fifth hypothesis is confirmed by the analysis. Regardless of ethnic origin everybody participates in sport. There is no significant difference found between natives and non-natives. This hints to an integration function of sport. However, it is unclear what kind of sport is practiced by the natives and non-natives and if there is contact between them. Nevertheless, sport is open, available and accessible to everybody.

After the individual variables are added to the model the first contextual factor is added. Governmental expenditure has a positive correlation with sport participation and in the first model of the ordered logistic regression the causal direction is shown. Although the effect is small, there is positive significant effect of governmental expenditure on sport participation. This is as Hypothesis 6a assumed and therefor is Hypothesis 6a confirmed. However, when we add Gross National Income to the regression the effect of governmental expenditure becomes insignificant and negative. Regardless of the governmental expenditure on sports the Gross National Income level in a country is more determining when it comes to sport participation. Both variables might explain the same since the correlation between GNI and governmental expenditure is demonstrated with a r of .866. The variables both explain that money has an effect on sport participation and the variables might be depending on each other. The high correlation between GNI and the governmental expenditure on sports and recreational services hints towards a dependence between those two, since governmental expenditure on sports and recreational services is not likely to influence the GNI it is more likely that with a higher GNI in a country there is more money available by the government to spent on sports and recreational services and people have more money to spent on sports if the income is higher. The government receives more money through taxes which are paid by the

citizens and individuals have more money to spent since there income is generally higher in a country with a higher GNI. It has to be mentioned that there is not controlled for income on the individual level, because income was not included in the Eurobarometer 62.0.

As hypothesis 6b assumed, there could be an interaction effect between GNI and governmental expenditure. The impact of governmental expenditure on the sport participation level might be depending on the Gross National Income per capita. As the negative coefficient implies the governmental expenditure has a smaller effect on sport participation when the GNI is higher, but the coefficient is not significant. Hypothesis 6b is not accepted since the effect is not significant.

The effect of the sport infrastructure, measured by the number of federations and clubs, on sport participation is tested in the analysis as well. First of all, there was a bivariate correlation executed. There was no correlation to begin with and that is proven by the insignificance of the effects in the regression model. The more federations and clubs do not lead to an increase in sport participation as suggested by the theory. The measurement of the sport infrastructure might be changed to get a better perception of the infrastructure. In this operationalization of sports clubs it is assumed that the clubs are equally spread across the country, but there might be a difference between rural and urban areas for instance. Unfortunately there is very few information available for all the European countries.

Communism as a contextual indicator has no significant influence. The ideological background of a country is not determining sport participation. Also, the effect of role models in a country does not contribute to the contextual explanation of sport participation. Hypothesis 9 and 10 are rejected.

In the early analysis it was shown that 4.1% of the explained variance was explained by the country dummies and 5.4% was due to individual determinants. In further analysis it was tried to explain this variance of countries by contextual effects, governmental expenditure on sports, Olympic success, sport infrastructure, communism and Gross National Income per capita. As the analyses were conducted only half of the explained variance was explained by the added contextual variables. In the end, only GNI proved to be significant regardless which other contextual variables are added. The significant effect of GNI was expected since household income or personal income are major determinants of sport participation on the individual level. The effect of GNI might be mediated if the household income is added to the

regression and the effect of governmental expenditure might change. Unfortunately, the household income is not included in the Eurobarometer 62.0.

The attempt to capture the contextual effects seems to be shortcoming and the context variables did not cover the contextual effects. There remains a major part unexplained by these independent variables what has to be explored with new predictors. Although, it has to be mentioned that most of the contextual effects were tested significant before adjusting the standard errors for clusters. There might as well be an effect on a lower level than the country, for instance, in the neighborhood, city or state. On the other hand it is possible that the European countries are too much the same and have too little differentiation in sport infrastructure, governmental expenditure and Olympic success. Perhaps, when analyzing a sample including countries from all over the world the contextual variables will explain a part of the difference.

6. Literature

Agresti, A. (2007). *An introduction to categorical data analysis*. Hoboken, NJ: Wiley-Interscience.

Allison, L., (1998). Sport and civil society. *Political Studies, 46*, 709-726.

Atkinson, A.B. (1999). Income inequality in the UK. *Health economics, 8*, 283-288.

Bergsgard, N. A., & Rommetvedt, H. (2006). Sport and Politics: The Case of Norway. *International Review for the Sociology of Sport, 41*(1), 7-27. doi: 10.1177/1012690206073146

Bottenburg, M. ., Rijnen, B., & Sterkenburg, J. (2005). *Sport participation in the European Union: Trends and differences*. 's-Hertogenbosch: W.J.H. Mulier Institute.

Collins, M. (2004). Sport, physical activity and social exclusion. [Review]. *J Sports Sci, 22*(8), 727-740. doi: 10.1080/02640410410001712430

Carlin, J. (2008). Playing the enemy: Nelson Mandela and the game that made a nation. London: Atlantic.

Crespo, C.J. (2000). Race/Ethnicity, Social Class and Their Relation to Physical Inactivity During Leisure Time: Results from the Third National Health and Nutrition Examination Survey, 1988–1994. *American Journal of Preventive Medicine, 18*(1), 46-53.

Dufur, M. (1999). Gender and Sport. In J. Saltzman (ed.), Handbook of the sociology of gender. New York, United States: Kluwer Academic

Eime, R. M., & Payne, W. R. (2009). Linking participants in school-based sport programs to community clubs. [Research Support, Non-U.S. Gov't]. *J Sci Med Sport, 12*(2), 293-299. doi: 10.1016/j.jsams.2007.11.003

Esping-Andersen, G. (1990) The Three Worlds of Welfare Capitalism. Oxford: Polity Press.

Estabrooks, P.A., Lee, R.E., & Gyurcsik, N.C. (2003). Resources for physical activity participation: Does availability and accessibility differ by neighnorhood socioeconomic status? *Ann Behav Med, 25*(2), 100-104.

Fromel, K., Mitas, J., & Kerr, J. (2009). The associations between active lifestyle, the size of a community and SES of the adult population in the Czech Republic. [Research Support, Non-U.S. Gov't]. *Health Place, 15*(2), 447-454. doi: 10.1016/j.healthplace.2008.08.003

Gibson, O. (2012, December 6). Britain's Olympic success leads to record boost in sport participation. *The Guardian.* Retrieved from http://www.guardian.co.uk/

Giles-Corti, B. (2002). Socioeconomic Status Differences in Recreational Physical Activity Levels and Real and Perceived Access to a Supportive Physical Environment. *Preventive Medicine, 35*(6), 601-611. doi: 10.1006/pmed.2002.1115

Green, M. (2006). From 'Sport for All' to Not About 'Sport' at All?: Interrogating Sport Policy Interventions in the United Kingdom. *European Sport Management Quarterly, 6*(3), 217-238. doi: 10.1080/16184740601094936

Hastie, P. A., de Ojeda, D. M., & Luquin, A. C. (2011). A review of research on Sport Education: 2004 to the present. *Physical Education & Sport Pedagogy, 16*(2), 103-132. doi: 10.1080/17408989.2010.535202

Heuvel, J., en Werff, J. (1998). Trendanalyse sport. Ontwikkelingen in sportdeelname en organisatiegraad van de sport in de periode 1975-1995. Tilburg, Nederland: Katholieke Universiteit Brabant.

Heinemann, K. (2005). Sport and the welfare state in Europe1 This article is based on an intercultural comparative project on "Sport and Welfare Policies" including six European countries (Denmark, Germany, France, Great Britain, Italy and Spain), financed by the Club of Cologne (Heinemann, 1999). *European Journal of Sport Science, 5*(4), 181-188. doi: 10.1080/17461390500344347

Inglehart, R.F. (2008). Changing values among western publics from 1970 to 2006. West European Politics, 31, 130-146.

Inglehart, R. (1997). Modernization and Postmodernization: cultural, economic and political changes in 43 societies. West Sussex, England: Princeton University Press.

Inglehart, R., & Baker, W.E. (2000). Modernization, cultural change and the persistence of traditional values. American Sociological Review, 65 (1), 19-51.

International Sports Federations. (2013). Retrieved from http://www.olympic.org/content/the-ioc/governance/international-federations/

Jarvie, G. (2006). *Sport, culture and society: An introductio*n. London, England: Routledge.

Kahma, N. (2010). Sport and social class: The case of Finland. *International Review for the Sociology of Sport, 47*(1), 113-130. doi: 10.1177/1012690210388456

Kamphuis, C. B., Van Lenthe, F. J., Giskes, K., Huisman, M., Brug, J., & Mackenbach, J. P. (2008). Socioeconomic status, environmental and individual factors, and sport participation. [Research Support, Non-U.S. Gov't]. *Med Sci Sports Exerc, 40*(1), 71-81. doi: 10.1249/mss.0b013e318158e467

Jaccard, J. (2001). Interaction effects in logistic regression. Thousand Oaks, CA [etc.: Sage Publications.

Lim, S. Y., Warner, S., Dixon, M., Berg, B., Kim, C., & Newhouse-Bailey, M. (2011). Sport Participation Across National Contexts: A Multilevel Investigation of Individual and Systemic Influences on Adult Sport Participation. *European Sport Management Quarterly, 11*(3), 197-224. doi: 10.1080/16184742.2011.579993

Long, J. S., & Freese, J. (2006). *Regression models for categorical dependent variables using Stata*. College Station, Tex: Stata Press.

Loy, J. W., Kenyon, G. S., & McPherson, B. D. (1981). *Sport, culture, and society: A reader on the sociology of sport*. Philadelphia: Lea & Febiger.

Moens, M., & Scheerder, J. (2005). Social determinants of sport participation revisited; The role of socialization and symbolic trajectories. *European Journal for Sport and Society, 1*(1), 35-49.

Overbeek, R. (2005) Gemeenten grootste geldschieters cultuur, sport en recreatie. Voorburg/Heerlen, Nederland: Centraal Bureau voor de Statistiek.

Payne, W., Reynolds, M., Brown, S., & Fleming, A. (n.a.) Sports role models and their impact on participation in physical activity: a literature review. *VicHealth.*

Petry, K., Steinbach, D., & Tokarski, W. (2004). Sport systems in the countries of the European Union: similarities and differences. *European Journal for Sport and Society, 1*(1), 15-21.

Popham, F., & Mitchell, R. (2007). Relation of employment status to socioeconomic position and physical activity types. [Research Support, Non-U.S. Gov't]. *Prev Med, 45*(2-3), 182-188. doi: 10.1016/j.ypmed.2007.06.012

Raudsepp, L. (2006). The relationship between socio-economic status, parental support and adolescent physical activity. *Acta Paediatr, 95*(1), 93-98. doi: 10.1080/08035250500323772

Richter, M., Rathman, K., Nic Gabhainn, S., Zambon, A., Boyce, W., & Hurrelmann, K. (2012). Welfare state regimes, health and health inequalities in adolescence: a multilevel study in 32 countries. *Sociol Health Illn, 34*(6), 858-879. doi: 10.1111/j.1467-9566.2011.01433.x

Robinson, J.A. (2005). White elephants. Journal of Public Economics, 89, 197-210. doi: http://dx.doi.org/10.1016/j.jpubeco.2004.05.004.

Saunders, E. D. (1982). Sport and culture: elitism or pluralism? *Leisure Studies, 1*(2), 123-137. doi: 10.1080/02614368200390111

Scheerder, J. (2005). Stratification Patterns of Active Sport Involvement Among Adults: Social Change and Persistence. *International Review for the Sociology of Sport, 40*(2), 139-162. doi: 10.1177/1012690205057191

Scheerder, J. (2005). Social stratification patterns in adolescents' active sport participation behaviour: a time trend analysis 1969-1999. *European Physical Education Review, 11*(1), 5-27. doi: 10.1177/1356336x05049822

Screpanti, E. (2004). Freedom and social goods: rethinking Marx's Theory of Communism. *Rethinking Marxism, 16*(2), 185-206. doi: 10.1080/0893569041000167623O

Steele, R., & Caperchione, C. (2005). The role of local government in physical activity: employee perceptions. *Health Promot Pract, 6*(2), 214-218. doi: 10.1177/1524839903260690

Stempel, C. (2005). Adult Participation Sports as Cultural Capital: A Test of Bourdieu's Theory of the Field of Sports. *International Review for the Sociology of Sport, 40*(4), 411-432. doi: 10.1177/1012690206066170

Szalai, A. (1986). Trends in comparative time-budget research. *The American behavorial scientist, 9.*

Tiessen-Raaphorst, A., Verbeek, D., de Haan, J., & Breedveld, K. (2010). Sport: een leven lang. Rapportage sport 2010. Den Haag/s'Hertogenbosch, Nederland: Sociaal en Cultureel Planbureau/W.J.H. Mulier Instituur.

Wagner, A., Simon, C., Evans, A., Ducimetiere, P., Bongard, V., Montaye, M., & Arveiler, D. (2003). Physical activity patterns in 50-59 year men in France and Northern Ireland. Associations with socio-economic status and health behavior. *European Journal of Epidemiology 18*, 321-329.

Wallhead, T., & O'Sullivan, M. (2005). Sport Education: physical education for the new millennium? *Physical Education & Sport Pedagogy, 10*(2), 181-210. doi: 10.1080/17408980500105098

Westerbeek, H. (2007). *Sportbeleid in internationaal vergelijkend perspectief*. Nieuwegein: Arko Sports media.

Williams, R. (2006). Generalized ordered logit/partial proportional odds models for ordinal dependent variables. *The Stata Journal, 6*(1), 58-82.

7. Appendix

7.1 SPSS Syntax

```
Get file 'C:\Users\Freek\Dropbox\Master\Thesis\ICPSR_04289\DS0001\04289-0001-Data.sav'.
Get file 'M:\04289-0001-Data.sav'.
set printback=on.
set ovars both onumbers both tvar both tnumbers both.

*Inspect variables.
DESCRIPTIVES V6 V362 V429 V427 V432 V443 V428.
FREQUENCIES V6 V362 V429 V427 V432 V443 V428.

*Select countries where questions about sport are asked.
FREQUENCIES v362.
Select if (v362 lt 6).
FREQUENCIES v6 v362.

*Delete belgium since it is an outlier and unreliable.
select if (countries ne 2).

*Merge east and west germany.
Recode V6 (1=1) (2=2) (3=3) (4 14=4) (5=5) (8 10=8) (else=COPY) into countries.
VALUE LABELS countries
1 'France'
2 'Belgium'
3 'The Netherlands'
4 'Germany'
5 'Italy'
6 'Luxembourg'
7 'Denmark'
8 'Ireland'
9 'Great Brittain'
11 'Greece'
12 'Spain'
13 'Portugal'
16 'Finland'
17 'Sweden'
18 'Austria'
19 'Cyprus'
20 'Czech Republic'
21 'Estonia'
22 'Hungary'
23 'Latvia'
24 'Lithuania'
25 'Malta'
26 'Poland'
27 'Slovakia'
28 'Slovenia'.
FREQUENCIES countries.

*Delete belgium since it is an outlier and unreliable.
```

```
select if (countries ne 2).

Recode countries (1=1) (else=0) into France.
Recode countries (3=1) (else=0) into NL.
Recode countries (4=1) (else=0) into Germany.
Recode countries (5=1) (else=0) into Italy.
Recode countries (6=1) (else=0) into Luxembourg.
Recode countries (7=1) (else=0) into Denmark.
Recode countries (8=1) (else=0) into Ireland.
Recode countries (9=1) (else=0) into Brittain.
Recode countries (11=1) (else=0) into Greece.
Recode countries (12=1) (else=0) into Spain.
Recode countries (13=1) (else=0) into Portugal.
Recode countries (16=1) (else=0) into Finland.
Recode countries (17=1) (else=0) into Sweden.
Recode countries (18=1) (else=0) into Austria.
Recode countries (19=1) (else=0) into Cyprus.
Recode countries (20=1) (else=0) into Czech.
Recode countries (21=1) (else=0) into Estonia.
Recode countries (22=1) (else=0) into Hungary.
Recode countries (23=1) (else=0) into Latvia.
Recode countries (24=1) (else=0) into Lithuania.
Recode countries (25=1) (else=0) into Malta.
Recode countries (26=1) (else=0) into Poland.
Recode countries (27=1) (else=0) into Slovakia.
Recode countries (28=1) (else=0) into Slovenia.
FREQUENCIES france NL Germany Italy Luxembourg Denmark Ireland Brittain greece Spain Portugal
Finland Sweden Austria Cyprus Czech Estonia Hungary Latvia Lithuania Malta Poland Slovakia
Slovenia.

*Recode variables.
* Labor market position.
FREQUENCIES V432.
DESCRIPTIVES V432.
Recode V432 (1 2 3 4=1) (5 6 7 8 9=3) (10 11 12 13 14 15 16 17 18=2) (97 = SYSMIS) into Occupation.
VALUE LABELS Occupation 1 "Non-active" 2 "Employed" 3 "Self-employed".
FREQUENCIES Occupation.

Recode occupation (1=1) (else=0) into Nonactive.
Recode occupation (2=1) (else=0) into employed.
Recode occupation (3=1) (else=0) into selfemployed.
FREQUENCIES nonactive employed selfemployed.

*age.
FREQUENCIES v429.
Compute age=v429.
FREQUENCIES age.

*gender.
FREQUENCIES v428.
Recode v428 (1=1) (2=0) into male.
VALUE LABELS male 1 'male' 0 'female'.
```

```
FREQUENCIES male.

*Sport participation.
FREQUENCIES v362.
Recode V362 (1=5) (2=4) (3=3) (4=2) (5=1) (6 9 = SYSMIS) into sport.
VALUE LABELS sport 1 'never' 2 'less often' 3 '1 to 3 times a month' 4 '1 to 3 times a week' 5 '3 times
a week or more'.
FREQUENCIES sport.

*Ethnicity.
FREQUENCIES V443.
Recode V443 (1=1) (2 3 4 5=0) (6 = SYSMIS) into Native.
VALUE LABELS native 1 'native' 0 'non-native'.
FREQUENCIES native.

*educational level.
FREQUENCIES v427.
Compute studying =0.
if (v427 = 10) studying = 1.
FREQUENCIES studying.

Recode v427 (1=1) (2=2) (3=3) (4=4) (5=5) (6=6) (7=7) (8=8) (9=9) (0 10 11=0) into edulvl.
FREQUENCIES edulvl.

*living together.
FREQUENCIES V425.
Recode V425 (1 2 3=10) (4 5 6 7 8 9=0) (10=SYSMIS) into living.
VALUE LABELS living 10 'living together' 0 'not living together'.
FREQUENCIES living.

*children >15.
FREQUENCIES v436.
Recode v436 (1 2=0) (3 4=20) into OldC.
VALUE LABELS OldC 20 'yes' 0 'no'.
FREQUENCIES OldC.

*Children <14.
FREQUENCIES v438 v440.
Compute YoungC = v438+v440.
FREQUENCIES YoungC.

*household composition.
FREQUENCIES living oldc youngc.
Compute household = living+oldc+youngc.
frequencies household.

Recode household (0 = 1) (1 2 3 4 5 6 =2) (10=3) (11 12 13 14 15 16 17 =4) (20=5) (21 22 23 24 25 26
27 28 =6) (30=7) (31 32 33 34 35 36 37=8) into composition.
VALUE LABELS composition 1 'Alone'
2 'not living together, young children'
3 'living together, no children'
4 'living together, young children'
```

```
5 'not living together, old children'
6 'not living together, young and old children'
7 'living together, old children'
8 'living together, young and old children'.
FREQUENCIES composition.

Recode composition (1=1) (else=0) into alone.
Recode composition (2=1) (else=0) into NLTYC.
Recode composition (3=1) (else=0) into LTNC.
Recode composition (4=1) (else=0) into LTYC.
Recode composition (5=1) (else=0) into NLTOC.
Recode composition (6=1) (else=0) into NLTYOC.
Recode composition (7=1) (else=0) into LTOC.
Recode composition (8=1) (else=0) into LTYOC.
FREQUENCIES alone NLTYC LTNC LTYC NLTOC NLTYC LTOC LTYOC.

*GNI per capita.
Compute GNI=-1.
if (Countries=1) GNI=30420.
if (Countries=2) GNI=32040.
if (Countries=3) GNI=35430.
if (countries=4) GNI=30750.
if (Countries=5) GNI=26980.
if (Countries=6) GNI=58610.
if (Countries=7) GNI=41560.
if (Countries=8) GNI=35720.
if (Countries=9) GNI=34570.
if (Countries=11) GNI=18470.
if (Countries=12) GNI=21590.
if (Countries=13) GNI=15850.
if (Countries=16) GNI=33980.
if (Countries=17) GNI=37190.
if (Countries=18) GNI=32520.
if (Countries=19) GNI=18410.
if (Countries=20) GNI=9750.
if (Countries=21) GNI=7570.
if (Countries=22) GNI=8540.
if (Countries=23) GNI=5460.
if (Countries=24) GNI=5870.
if (Countries=25) GNI=12940.
if (Countries=26) GNI=6270.
if (Countries=27) GNI=8800.
if (Countries=28) GNI=15400.
FREQUENCIES GNI.

*Communism.
Compute comm=0.
VALUE LABELS comm 1 'Former communist' 0 'not communist'.
FREQUENCIES comm.
If (Countries=4) comm=1.
If (Countries=20) comm=1.
If (Countries=21) comm=1.
```

```
If (Countries=22) comm=1.
If (Countries=23) comm=1.
If (Countries=24) comm=1.
If (Countries=26) comm=1.
If (Countries=27) comm=1.
If (Countries=28) comm=1.
FREQUENCIES comm.
graph /bar(simple)=Mean(comm) by Countries.

*governmental expenditure.
Compute expenditure=-1.
VALUE LABELS expenditure -1 'missing'.
if (Countries=1) expenditure=8396000000.
If (Countries=2) expenditure=5134000000.
if (Countries=3) expenditure=2961000000.
if (Countries=4) expenditure=6790000000.
if (Countries=5) expenditure=4644000000.
if (Countries=6) expenditure=115600000.
if (Countries=7) expenditure=936400000.
if (Countries=8) expenditure=321900000.
if (Countries=9) expenditure=6218100000.
if (Countries=11) expenditure=351000000.
if (Countries=12) expenditure=2973000000.
if (Countries=13) expenditure=590000000.
if (Countries=16) expenditure=710000000.
if (Countries=17) expenditure=1105500000.
if (Countries=18) expenditure=699800000.
if (Countries=19) expenditure=53900000.
if (Countries=20) expenditure=358100000.
if (Countries=21) expenditure=41800000.
if (Countries=22) expenditure=217800000.
if (Countries=23) expenditure=83100000.
if (Countries=24) expenditure=27300000.
if (Countries=25) expenditure=4500000.
if (Countries=26) expenditure=499000000.
if (Countries=27) expenditure=442000000.
if (Countries=28) expenditure=71100000.
FREQUENCIES expenditure.

*sport federations.
Compute federations=-1.
if (Countries=1) federations=120.
if (Countries=2) federations=146.
if (Countries=3) federations=73.
if (Countries=4) federations=97.
if (Countries=5) federations=45.
if (Countries=6) federations=61.
if (Countries=7) federations=60.
if (Countries=8) federations=33.
if (Countries=9) federations=34.
if (Countries=11) federations=29.
if (Countries=12) federations=64.
```

```
if (Countries=13) federations=64.
if (Countries=16) federations=76.
if (Countries=17) federations=50.
if (Countries=18) federations=59.
if (Countries=19) federations=48.
if (Countries=20) federations=95.
if (Countries=21) federations=63.
if (Countries=22) federations=78.
if (Countries=23) federations=15.
if (Countries=24) federations=35.
if (Countries=25) federations=44.
if (Countries=26) federations=38.
if (Countries=27) federations=39.
if (Countries=28) federations=50.
FREQUENCIES federations.

*sport clubs.
Compute Clubs=-1.
if (Countries=1) clubs=175000.
if (Countries=2) clubs=19000.
if (Countries=3) clubs=27000.
if (Countries=4) clubs=94000.
if (Countries=5) clubs=70000.
if (Countries=6) clubs=1550.
if (Countries=7) clubs=10580.
if (Countries=8) clubs=2595.
if (Countries=9) clubs=106432.
if (Countries=11) clubs=2800.
if (Countries=12) clubs=94500.
if (Countries=13) clubs=10000.
if (Countries=16) clubs=12000.
if (Countries=17) clubs=22000.
if (Countries=18) clubs=24368.
if (Countries=19) clubs=600.
if (Countries=20) clubs=9240.
if (Countries=21) clubs=2300.
if (Countries=22) clubs=5385.
if (Countries=23) clubs=1032.
if (Countries=24) clubs=1715.
if (Countries=25) clubs=950.
if (Countries=26) clubs=4666.
if (Countries=27) clubs=9000.
if (Countries=28) clubs=7200.
FREQUENCIES clubs.

*olympic succes.
*winter.
Compute Winter=-1.
if (Countries=1) Winter=94.
if (Countries=2) Winter=5.
if (Countries=3) Winter=86.
if (Countries=4) Winter=190.
```

```
if (Countries=5) Winter=106.
if (Countries=6) Winter=2.
if (Countries=7) Winter=1.
if (Countries=8) Winter=0.
if (Countries=9) Winter=22.
if (Countries=11) Winter=0.
if (Countries=12) Winter=2.
if (Countries=13) Winter=0.
if (Countries=16) Winter=156.
if (Countries=17) Winter=129.
if (Countries=18) Winter=201.
if (Countries=19) Winter=0.
if (Countries=20) Winter=16.
if (Countries=21) Winter=7.
if (Countries=22) Winter=6.
if (Countries=23) Winter=3.
if (Countries=24) Winter=0.
if (Countries=25) Winter=0.
if (Countries=26) Winter=14.
if (Countries=27) Winter=4.
if (Countries=28) Winter=7.
FREQUENCIES Winter.

*Summer.
Compute Summer=-1.
if (Countries=1) Summer=671.
if (Countries=2) Summer=142.
if (Countries=3) Summer=266.
if (Countries=4) Summer=573.
if (Countries=5) Summer=549.
if (Countries=6) Summer=2.
if (Countries=7) Summer=179.
if (Countries=8) Summer=28.
if (Countries=9) Summer=780.
if (Countries=11) Summer=110.
if (Countries=12) Summer=131.
if (Countries=13) Summer=23.
if (Countries=16) Summer=302.
if (Countries=17) Summer=483.
if (Countries=18) Summer=86.
if (Countries=19) Summer=1.
if (Countries=20) Summer=43.
if (Countries=21) Summer=33.
if (Countries=22) Summer=476.
if (Countries=23) Summer=19.
if (Countries=24) Summer=21.
if (Countries=25) Summer=0.
if (Countries=26) Summer=271.
if (Countries=27) Summer=24.
if (Countries=28) Summer=19.
FREQUENCIES Summer.
```

```
Compute Succes=Winter+Summer.
FREQUENCIES Succes.

*country surface.
Compute surface=-1.
if (Countries=1) surface=643.8.
if (Countries=2) surface=30.5.
if (Countries=3) surface=41.5.
if (Countries=4) surface=357.0.
if (Countries=5) surface=301.3.
if (Countries=6) surface=2.6.
if (Countries=7) surface=44.5.
if (Countries=8) surface=70.3.
if (Countries=9) surface=244.4.
if (Countries=11) surface=132.
if (Countries=12) surface=505.4.
if (Countries=13) surface=92.1.
if (Countries=16) surface=338.1.
if (Countries=17) surface=450.3.
if (Countries=18) surface=83.9.
if (Countries=19) surface=9.3.
if (Countries=20) surface=78.9.
if (Countries=21) surface=45.2.
if (Countries=22) surface=93.0.
if (Countries=23) surface=64.6.
if (Countries=24) surface=65.0.
if (Countries=25) surface=.3.
if (Countries=26) surface=312.7.
if (Countries=27) surface=49.0.
if (Countries=28) surface=20.3.
FREQUENCIES surface.

*population.
Compute population=-1.
if (Countries=1) population=62292241.
if (Countries=2) population=10396421.
if (Countries=3) population=16258032.
if (Countries=4) population=82531671.
if (Countries=5) population=57888245.
if (Countries=6) population=454960.
if (Countries=7) population=5397640.
if (Countries=8) population=4028851.
if (Countries=9) population=59697037.
if (Countries=11) population=11040650.
if (Countries=12) population=42345342.
if (Countries=13) population=10474685.
if (Countries=16) population=5219732.
if (Countries=17) population=8975670.
if (Countries=18) population=8142573.
if (Countries=19) population=730367.
if (Countries=20) population=10211455.
if (Countries=21) population=1351069.
```

```
if (Countries=22) population=10116742.
if (Countries=23) population=2319203.
if (Countries=24) population=3445857.
if (Countries=25) population=3995867.
if (Countries=26) population=38190608.
if (Countries=27) population=5380053.
if (Countries=28) population=1996433.
FREQUENCIES population.

*Club density per country.
FREQUENCIES clubs surface.
Compute density =clubs/surface.
FREQUENCIES density.
DESCRIPTIVES density.

*Expenditure by population.
FREQUENCIES expenditure population.
Compute expenditure_n=expenditure/population.
FREQUENCIES expenditure_n.

*create interaction variable GNI with Gov.Exp.
FREQUENCIES GNI expenditure_n.
Compute GNI_gov= GNI * expenditure_n.
FREQUENCIES GNI_gov.

*Compute mean sport participation by country.
AGGREGATE /OUTFILE =* mode=ADDVARIABLES /break=Countries /msport=mean(sport).
FREQUENCIES msport.
Means msport by Countries.
Means msport by Countries by expenditure_n.

*.....................................................................................................
*Check for outliers.
EXAMINE VARIABLES=expenditure_n /id=id /plot boxplot histogram npplot /compare group
/STATISTICS DESCRIPTIVES extreme /cinterval 95 /MISSING pairwise/NOTOTAL.

*descriptive statistics.
DESCRIPTIVES male age composition edulvl studying sport native occupation countries density
federations expenditure_n comm GNI succes.

FREQUENCIES composition occupation male studying native comm sport.
FREQUENCIES sport V363 V364.
CROSSTABS sport by studying.

*descriptive graphs.
GRAPH /HISTOGRAM=sport /panel colvar=male colop=cross.
GRAPH /SCATTERPLOT(bivar)=expenditure_n with msport by countries.
GRAPH /BAR(simple)=mean(sport) by countries.
GRAPH /BAR(grouped)=mean(sport) by countries by expenditure_n.
Graph /BAR (simple)=v364 by countries.

CROSSTABS v365 to v379 by countries.
```

```
CROSSTABS v3 0 to v394 by countries.
CROSSTABS sport by countries.
CROSSTABS countries by sport.
CROSSTABS countries by V364.
CROSSTABS countries by V363.
Crosstabs male edulvl occupation native by sport.
CROSSTABS edulvl by sport.
CROSSTABS occupation by sport.
CROSSTABS male by sport by countries.

GRAPH /BAR(grouped)=mean(sport) by male by countries.
GRAPH /BAR(grouped)=mean(sport) by countries by edulvl.
GRAPH /BAR(grouped)=mean(sport) by countries by occupation.
GRAPH /BAR(grouped)=mean(sport) by countries by composition.
GRAPH /BAR(grouped)=mean(sport) by countries by native.
GRAPH /LINE(simple)=mean(sport) by age.

GRAPH /bar(simple) mean(sport) by Countries.
GRAPH /bar(simple) mean(sport) by expenditure_n.
GRAPH /bar(simple) mean(sport) by federations.
GRAPH /bar(grouped) mean(sport) by density by countries.
GRAPH /bar(simple) mean(sport) by comm.
GRAPH /bar(simple) mean(sport) by succes.

CROSSTABS msport by countries.
CROSSTABS expenditure_n by countries.
CROSSTABS countries by federations.
CROSSTABS density by countries.
CROSSTABS  expenditure_n GNI federations density succes by countries.

GRAPH /SCATTERPLOT(bivar)=expenditure_n with msport by countries.
CORRELATIONS sport expenditure_n.
select if (countries ne 2).
CORRELATIONS sport expenditure_n.
CORRELATIONS sport succes.
CORRELATIONS sport federations.
CORRELATIONS sport density.
CORRELATIONS federations density comm succes expenditure_n sport.
CORRELATIONS expenditure_n GNI.

GRAPH /bar(simple) mean(federations) by Countries.
GRAPH /bar(simple) mean(expenditure) by msport.
GRAPH /bar(simple) mean(expenditure_n) by msport.
GRAPH /bar(simple) mean(federations) by msport.
GRAPH /bar(simple) mean(GNI) by msport.
GRAPH /bar(simple) mean(sport) by Countries by comm.
```

7.2 Stata commands

```
import excel "M:\datastata5.xlsx", sheet("Sheet1") firstrow
ologit sport France NL Germany Italy Luxembourg Denmark Ireland Brittain Greece Spain Portugal Finland Sweden Austria Cyprus Czech Estonia Hungary Latvia Lithuania Malta Poland Slovakia Slovenia age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC NLTYOC LTOC LTYOC, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC NLTYOC LTOC LTYOC expenditure_n Succes comm federations density GNI, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC NLTYOC LTOC LTYOC expenditure_n comm GNI, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC NLTYOC LTOC LTYOC expenditure_n comm, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC NLTYOC LTOC LTYOC expenditure_n comm Succes, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC NLTYOC LTOC LTYOC expenditure_n, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC NLTYOC LTOC LTYOC expenditure_n GNI, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC NLTYOC LTOC LTYOC expenditure_n GNI comm, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC NLTYOC LTOC LTYOC Succes, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC NLTYOC LTOC LTYOC Succes expenditure_n, cluster(countries)
Brant, detail
```

```
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC
NLTYOC LTOC LTYOC expenditure_n GNI density, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC
NLTYOC LTOC LTYOC expenditure_n GNI federations, cluster(countries)
Brant, detail
ologit sport age male employed selfemployed Native studying edulvl NLTYC LTNC LTYC NLTOC
NLTYOC LTOC LTYOC expenditure_n GNI GNI_gov, cluster(countries)
Brant, detail
```