

*Sport for All: Fact or fiction?*  
Individual and cross-national differences in sport  
participation from a European perspective

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To  
my mum  
xavier  
roos

And to  
my friends

“I can no other answer make but thanks, and thanks, and ever...thanks”  
(William Shakespeare, Sebastian, *Twelfth Night*, act 3, scene 3)

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# CHAPTER 1: THEORY AND METHODOLOGY

The present dissertation - *Sport for All? Fact or fiction: Individual and cross-national differences in sport participation from a European perspective* - is the result of several years of in-depth study into different aspects of the sport participation behavior of European adults. Parts of this research have been presented at (inter)national conferences and/or have been published in (inter)national peer-reviewed journals. This dissertation consists of a collection of ten research papers which can be found in **chapters 2 to 5**. Most of them focus on one or more of the following research questions:

- (1) To what extent does the level of sport participation differ across European Union countries?
- (2) To what extent does the level of sport participation vary according to contextual indicators at the national level?
- (3) To what extent are individual background characteristics associated with sport participation in the European Union?
- (4) To what extent does the strength of the association between individual background characteristics and sport participation differ across European Union countries?
- (5) To what extent does the strength of the association between individual background characteristics and sport participation vary according to contextual indicators at the national level?

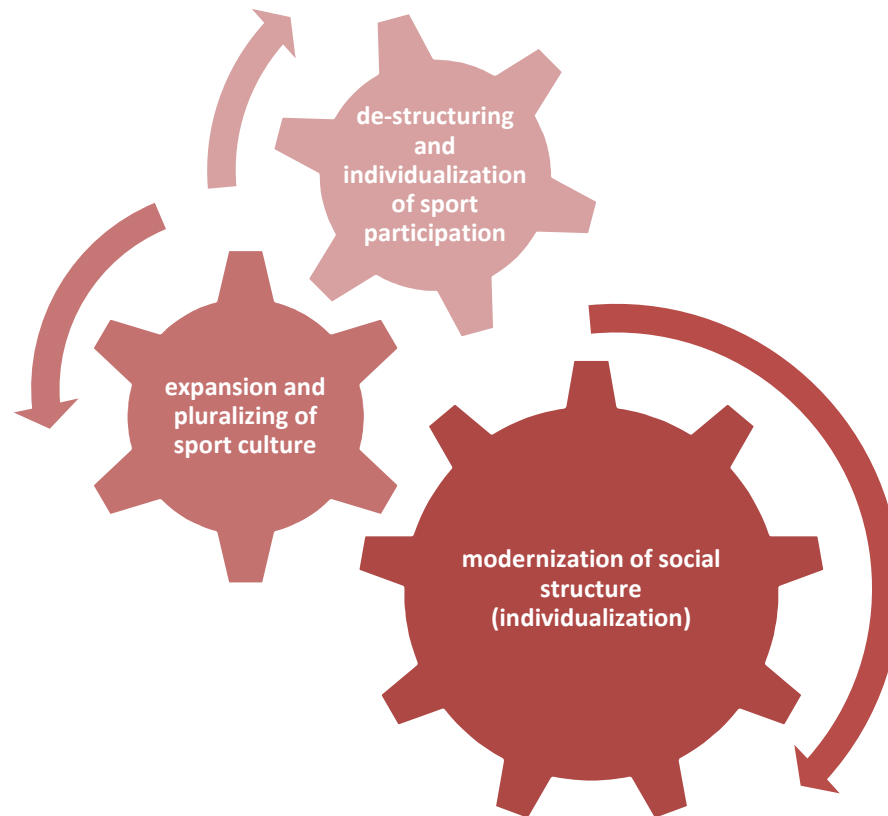
The first chapter of this dissertation (**chapter 1**) contains a general introduction to the broader theoretical and methodological framework underlying most of our empirical research. **Chapters 2 to 5** include the empirical research papers. Finally, some concluding notes can be found in **chapter 6**.

## INTRODUCTION: A GENERAL THEORETICAL FRAMEWORK

According to Nagel (2003), sport sociological research is confronted with the problem of 'double complexity'. This implies that, when dealing with sport participation in a European context, one has to take account of both the societal framework in which the sport culture is embedded as well as of the complex changes occurring within the field of sport. In the past decades, several authors (Beck 1986; Beck & Beck-Gernsheim 2002; Beck, Giddens & Lash 1994) have claimed that the modern social structure is undergoing profound changes, with fundamental consequences for the social world, life forms and social interactions, and with individualization as

one of the defining characteristics. But not only society in general, also the field of sport has changed during past decades and has developed into a mass-phenomenon. Expansion processes have led to an increase in the number of sport participants as well as to an increasing differentiation and pluralizing of sport activities, sport facilities and sport interests. Apart from traditional sports and sport providers, new ones have arisen, focusing not only on competition and performance, but also on fun, relaxation, well-being and health. This development can be summarized as the *expansion and pluralizing of sport culture*, and it seems to correspond with the complex socio-structural modernization and individualization processes that have been established on societal level. On the other hand, the traditional image of sport that was valid until the 1960s has lost plausibility and empirical significance. Sport is no longer a leisure time activity reserved for young, capable men with a higher educational or occupational status. The expansion and pluralizing of the sport culture seems to match with a *de-structuring and individualization of sport participation*, as also women, children and elderly are entering the sport field and have been acknowledged by sport providers as important customers. The question remains, however, whether and to what extent expansion and pluralizing processes really correspond to de-structuring and individualization processes in the field of sport. In other words, can we nowadays speak of de-structured or individualized sport in an individualized society?

The above issues are graphically depicted in Figure 1 and will be discussed further in this introduction. As individualization has probably been one of the most discussed concepts in the social sciences, it is hardly possible to give an overview of all publications in which individualization took a prominent place. The trend towards single households, increase in divorce rates, shifts in intersexual relations, new and extreme sports, increased demand for psychotherapy, etc. all have been connected with societal individualization processes, leading to a sometimes unclear, contradicting or wrong use of the concept. Therefore, in the *first part* of this introduction, we try to give a brief overview of the foundations of the individualization thesis as developed by Ulrich Beck (Beck & Beck-Gernsheim 1994, 2002). In the *second part*, we discuss the relationship between societal individualization processes and sport participation (inspired by Müller 1998; Nagel 2003; Schwier 2003; Van Tuyckom & Scheerder 2009).



**Figure 1:** Schematic representation of the problem of 'double complexity' in research dealing with sport participation in a European context (adapted from Baur, Koch & Telschow 1995; Nagel 2003)

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## INDIVIDUALIZATION AND ITS CONSEQUENCES

The process of individualization is seen by many authors as one of the most important socio-cultural developments of the postwar period. However, far from being a recent development, individualization was already one of the issues with which the founding fathers of social science were concerned. Emile Durkheim, Georg Simmel and Max Weber all studied the influence of the industrialization process on social cohesion and solidarity and the changes in the bond between individuals and community that took place in their era (de Beer 2007; Müller 1998). For instance, the gradual transformation from mechanical solidarity to organic solidarity, described by Durkheim in *De la division du travail social* (1893) might also be interpreted as a process of individualization. However, recently, some authors (the most important are Ulrich Beck, Anthony Giddens and Scott Lash, see Beck, Giddens & Lash 1994) have claimed that the current process of individualization differs in important aspects from the modernization process that took place a century ago. Modernity itself is undergoing profound changes, with fundamental consequences for the social world, life forms and social interactions. It ultimately prompts the transition towards a new phase of (post-industrial) modernity of which individualization is one of the defining characteristics, and which has been described by Beck (1986) as 'Risikogesellschaft' or by Schulze (1993) as 'Erlebnisgesellschaft'. Individualization is thus both the consequence and the motor of processes of change in late-capitalist societies. "*Individualization is becoming the social structure of second modern society itself*" (Beck & Beck-Gernsheim 2002: xxii). This power to self-change is

what Beck calls 'second modernity' or 'reflexive modernity', and is supposed to mean that *"a change of industrial society which occurs surreptitiously and unplanned in the wake of normal, autonomized modernization and with an unchanged, intact political and economic order implies the following: a radicalization of modernity, which breaks up the premises and contours of industrial society and opens paths to another modernity"* (Beck 1994: 3).

Although the overriding importance of individualization for the present phase of modernity has been stressed by Beck and others, it is not easy to derive a clear definition of individualization from their writings. Therefore, in the following, we try to infer some concrete elements from the discussion on individualization. Individualization should not be confused with individualism. Whereas individualism is understood as a personal attitude or preference, individualization refers to a macro-social phenomenon, which might - or might not - result in changes in the attitudes of individual persons (Beck 2007). Individualization is not a process that originates from a conscious choice or an individual preference. On the contrary, *"individualization is a social condition which is not arrived at by a free decision of individuals. [...] People are condemned to individualization"* (Beck & Beck-Gernsheim 2002: 4). Individualization is imposed on individuals by modern institutions. The development of the welfare state - with its increased standard of living, massive educational expansion, increased mobility, growing freedom and development of the tertiary sector - has replaced many traditional institutions like the family, the local community, the church and social classes as the defining collectivity of people's identity (de Beer 2007). Individualization thus refers to a process of 'detraditionalization', a gradual loss of adherence of individuals to traditional institutions. Beck & Beck-Gernsheim (2002: 30) argue that *"the post-war development of the welfare state brought with it a social impetus toward individualization of unprecedented scale and dynamism. [...] Against the backdrop of a comparatively high standard of living and social security, a break in historical continuity released people from traditional class ties and family supports and increasingly threw them onto their own resources and their individual fate in the labour market, with all its attendant risks, opportunities and contradictions"*. In today's complex consumer societies, class consciousness or ritualized status passages become barely interpretable. The actors can no longer rely on tradition, but instead have to organize individual life courses and they are self-responsible for the composition of their biography (Schwier 2003). The de-structuring of traditional institutions consequently prompts people towards a self-directed way of living. According to Müller (1992: 33), to a considerable extent, *"eine Biographisierung des Handelns und Erlebens"* is taking place, as *"für Flexibilität und Kreativität, die neuen Gütespiegel eines guten Lebens, [es gibt] noch keine Katechismen"*. Each individual is searching for identity, self-development and personal joy at his/her own risk, and appearing conflicts (e.g., an unhappy love or unemployment) are largely interpreted as personal failures. The opportunities and restrictions to the creation of a personal biography - and their associated social restrictions - thus contain certain 'riskante Freiheiten' (Beck & Beck-Gernsheim 1994).

In sum, individualization goes together with emancipation, a declining influence of social groups and institutions on individual attitudes and behavior, resulting in a greater freedom of choice (de Beer 2007). Beck

& Beck-Gernsheim (2002: 2-3) elaborate this as follows: *“Traditional guidelines often contained severe restrictions or even prohibitions on action (such as the ban on marriage, in pre-industrial societies, which prevented members of non-property-owning groups from marrying; or the travel restrictions and the recent obstructions to marriage in the Eastern bloc states, which forbade contact with the ‘class enemy’). By contrast, the institutional pressures in modern Western society tend rather to be offers of services or incentives to action - take, for example, the welfare state, with its unemployment benefit, student grants or mortgage relief. To simplify: one was born into traditional society and its preconditions (such as social estate and religion). For modern social advantages one has to do something, to make an active effort. One has to win, know how to assert one-self in the competition for limited resources - and not only once, but day after day”.*

A consequence of this is increasing heterogeneity. If people no longer appeal to traditional institutions for their conduct, and increasingly make their own choices, they will probably make different choices. *“The normal biography thus becomes the ‘elective biography’, the ‘reflexive biography’, the ‘do-it-yourself biography’”* (Beck & Beck-Gernsheim 2002: 3). *“What is heralded, ultimately, by this development is the end of fixed, predefined images of man. The human being becomes [...] a choice among possibilities, a homo optionis”* (Beck & Beck-Gernsheim 2002: 5). The chances, ambivalences and dilemmas that are associated with individualization processes can, among others, be illustrated by means of the ‘emancipated’ female way of living. Women who want to develop a career, but at the same time want to integrate motherhood and a relationship into their life design, are constantly faced with biographical decisions (Schwier 2003). However, women have no total freedom of choice, and sometimes they even have to take decisions that are forced upon them by the circumstances. As already mentioned, the process of individualization pursues biography-staging individuals, but the subjects are not completely autonomous. A de-structuring of societal control mechanisms is followed - at least partial - by new structures. Consequently, the aspired life model for, in this example, women can only be realized under considerable planning and coordination efforts, but at the same time some painful dilemmas (e.g., between a career and motherhood) or second choices (e.g., single mothers with a career or ‘double income no kids’ relationships) might arise.

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#### DE-STRUCTURED SPORT IN AN INDIVIDUALIZED SOCIETY, I.E. *SPORT FOR ALL?*

Parallel to the above sketched societal developments in the last decades, also sport seems to have lost its traditional elements and has evolved into a pluralized mass culture phenomenon (Nagel 2003). However, a century ago, mass participation in sport was still a phenomenon that was unheard of. It was only at the end of the nineteenth century that sport began to spread across the world, with Great-Britain and the United States being the most important centers for the dissemination (Van Bottenburg, Rijnen & Van Sterkenburg 2005). While until the 1960s sport participation was in large part engaged in only by young, capable and achievement-oriented white males, mostly from the middle and upper social classes (Bourdieu 1979, 1991; Gruneau 1975; Heinemann 1976; Loy 1969, 1975; Lüschen 1963, 1969), over the course of time increasingly more social groups became involved in sport. During the second half of the twentieth century, as levels of education and affluence generally grew, sport developed into a mass phenomenon. The skepticism and resistance that sport

for, for example, the working class, women, and the elderly initially encountered, gave way to a pervasive belief that, given its positive effects, sport should be promoted for all (Van Bottenburg, Rijnen & Van Sterkenburg 2005). Therefore, playing fields, sport halls and other sport facilities were constructed on a large scale and sport organizations and governments stimulated the practice of sport in different European countries. To this end, major campaigns were developed using the motto *Sport for All*<sup>1</sup> to spread their message (Hartmann-Tews 1996; Nagel 2003). As part of a broader welfare policy, North-Western-European countries took the lead in inspiring citizens and increasing the opportunities for everyone to become involved in sport and recreation. This *Sport for All* policy was successful because it corresponded with the wider economic and socio-cultural developments in society, among which the increase in leisure time and income, a shift from physically demanding factory work to inactive office work, the expansion of higher education, the leveling out of income differences, the informalisation of interpersonal relations, and the emancipation of the working class, women, youth, and the elderly (Nagel 2003; Van Bottenburg, Rijnen & Van Sterkenburg 2005). Sport evolved from an exclusive good to a generation- and gender-crossing "*Faszinosum unserer Zeit*" (Krockow 1972: 7).

One of the consequences of the societal developments is that behavior became more informal and throughout the second half of the twentieth century, sport changed considerably in character. Apart from club-based sport organizations (which still remain an important cornerstone for the practice of sport in Europe), people increasingly began to practice sport in a more informal, spontaneous and individualized fashion, with as a result that jogging, cycling or skateboarding on the streets, badminton in the parks and volleyball on the beach (later followed by fitness and aerobics at home or in the gyms) all became part of the extensive package of practiced sports available. Moreover, while it was once not perceived as appropriate for (elderly) women to take part in sport and exercise, throughout the course of the twentieth century, the behavioral norms liberalized and sporting behavior became a positively valued phenomenon, a development that was reinforced by the European *Sport for All* policy (Nagel 2003, see further). Nowadays, sport has become an integral part of our society and seems to have perpetuated all social groups. Moreover, not only did participation increase and is the provision of sport more diversified, during the 1990s sport also featured some qualitative changes in that the traditional model of sport - with victory and performance as ultimate goals - has been replaced by new motives such as pleasure, fun, wellbeing, health, etc. As mentioned above, expansion- and pluralizing processes that have been established on societal level seem to correspond to a de-structuring and individualization of sport activities on the individual level (see Table 1). During the past decades, sport has been 'upgraded' in both a social and cultural sense; sport and the body, accompanied by the commercialization of supply of sporting goods, have become the new Leitmotiv and it seems as if all sectors in society have something to do with sport (Cachay 1990; Nagel 2003; Rittner 1989). In addition, more than ever, people have the tendency to label their activities as 'sport'. Sportswear and fashion are merged and sport shoes, shirts and other things which were formerly seen only on the sport field or in the gyms are being worn in the streets as ordinary fashion, even by

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<sup>1</sup> We elaborate on the European *Sport for All* policy further on.



non-participants. As a consequence, sport nowadays encompasses a broad spectrum with at one extreme the Olympic games - the ultimate manifestation of organized competitive sport -, and at the other end, all kinds of physical activity that people (in contrast to fifty years ago) perceive as sporting behavior (Van Bottenburg, Rijnen & Van Sterkenburg 2005). In sum, contemporary sport has developed into different dimensions and functions, which has led sport scientists to speak of 'sportization of society' or 'de-sportization of sport' (Versportlichung der Gesellschaft und Entsportung des Sports) (Cachay 1990; Crum 1993; Digel 1990; Lamprecht & Stamm 1995; 1998).

**Table 1:** Quantitative and qualitative changes in the field of sport, differentiated according to societal- and individual level (adapted from Baur, Koch & Telschow 1995; Nagel 2003)

	<b>Quantitative aspect</b>	<b>Qualitative aspect</b>
<b>Societal level</b>	Expansion of sport culture	Pluralizing of sport culture
<b>Individual level</b>	De-structuring of sport participation	Individualization of sport participation

The above mentioned diversity in sport participation, with its multitude of contexts and organizational forms, and practiced for many different ends, is one of the most charming aspects of nowadays' sport world. In addition, there seems to be an apparent reduction of social inequality through increased involvement in sport by groups whose access had in the past been limited (e.g., women, individuals with lower education, elderly, etc.). In sum, the observable trend towards a melting away of class-, age- or gender-based boundaries, a de-standardization of life courses and pluralizing of lifestyles seems nowhere to be more evident than in the sport field. *"Sportkarrieren [...] für immer mehr Menschen zu einer ,lebensbegleitende Karriere' im Rahmen ihres Lebenslaufs"* (Baur & Braun 2001: 19). The seemingly unrestrained growth of mass sport, the increasing inclusion of women and elderly, the rapidly changing sport scenes, the increase in significance of a slim and healthy, individually fashioned body as well as the multitude of sport-related motives and interests are only some of the indicators which make the image of de-structured sport in an individualized society extremely plausible. The *homo optionis* in post-traditional societies is forced to create a 'do-it-yourself biography' so that he/she transforms his/her economic, cultural and social 'having' into an individual 'being'. This stimulates the massive tendency towards a field of action that is governed by bodily- and self-directed experiences. The stimulation of active self-assessment moves the attention to the body. If one is directed to oneself, he/she uses his/her body to stabilize the 'me' as an expression of knowing oneself. According to Bette (1993: 39-42), the body replaces traditional institutions: *"In einer Zeit, in der die Erfahrung des Flüchtigen, Kontingenten und Fragmentarischen das Bewußtsein vielen Menschen bestimmt, wird der Körper zu einem festen Kristallisationspunkt für Selbstverwirklichung und allgemeine Lebensbejahung... Der funktionsfähige, fit getrimmte, jugendlich gestylte und sportive Körper wird zu einem Statussymbol, zu einer Projektionswand für die Darstellung von Unvergleichlichkeit und Individualität. [...] Individualisierte Menschen streben durch den Rückgriff auf die Kompaktheit ihrer körperlichen Nahwelt eine Sicherheits- und Erlebnisgrundlage an, die entwickelte Industriegesellschaften aufgrund ihrer spezifischen Verfasstheit immer weniger überzeugend*

*bereitstellen können*“. Sport practices and the sportive thematization of the body apparently contain chances to style one’s own life, and the criteria of an individualized lifestyle (i.e. authenticity, creativity, vitality, joy, fitness, etc.) can be formed and presented within the sport field. The pluralized sport culture has a multitude of opportunities so that one can choose an activity at every moment, compatible with one’s own individual lifestyle and consistent with one’s own interests.

Although the described increase in social openness and democratization of sport seems very plausible, the growing literature on de-structuring and individualizing of sport activities lacks a firm empirical underpinning. Rather, sport sociological studies have used the individualization thesis as a confirmation of the *Sport for All* ideology (see further) or merely as theoretical background for different theses with respect to sport development. For instance, the studies on a change of values, on the sportization of society or de-sportization of sport, or on structural changes in sport clubs have all been explained by Beck’s metaphors and argumentation. As a consequence, the individualization thesis is leading its own life: *“Sie hat sich als eine einflussreiche Diagnose der gegenwärtigen Gesellschaft durchgesetzt. Das, so lehrt dieser Fall, ist offensichtlich auch ohne empirische Grundlagen, auch ohne strenge Explikation, möglich. Mehr noch: Die Individualisierungsthese wird häufig in einer Weise verwendet, als wäre sie längst empirisch bewährt, was sich dann so liest: ‚Im Zuge der steigenden Individualisierung der Gesellschaft‘. Nun wäre es verfehlt, solche Formulierungen dem Autor anzulasten. Sie zeigen aber die Neigung, eine These für empirisch gültig zu halten, wenn sie so nur oft genug wiederholt wird und - dies ist das wahre Problem - wenn sie so plausibel erscheint. Die Mitläufer der These stützen sich auf die scheinbare Plausibilität, die die These hat, vielleicht, weil sie meinen, im Alltag mehr Differenzierung und weniger normengeleitetes Verhalten zu erleben“* (Friedrichs 1998: 7). It is therefore extremely tempting to follow the route of postmodern researchers as Beck to explain the complex differentiations occurring in the context of sport. However, some theoretical and empirical pitfalls arise right away. The main theoretical problem is that an increase in possibilities to act (i.e., the expansion of sport and sporting contexts) on the one hand, and the so-called de-structuring and individualization of sport participation on the other hand cannot be analytically distinguished from each other. As a consequence, the dimensions of sport, as presented in Figure 1, cannot be viewed as a cause-effect relationship, as this is not empirically testable. Moreover, despite the so-called ‘sportization of society’, the number of non-participants remains relatively high in several European countries. The popularization of sport does not necessarily imply that participation has been fully democratized. Although sport participation is no longer solely a feature of the ‘leisure class’, as was the case in Veblen’s (1899/1953) time, certain groups in society still experience higher thresholds to participate in sport than others (see further). Moreover, it is often forgotten that the current developments in sport give rise to new opportunities for distinction. The opportunities to create a sportive biography are, among others, highly dependent upon one’s body capital. Who, except for those who are already involved in sport, are able to act as ‘sport hoppers’ (Bette 1999), or to switch between different sport providers? Individualized do-it-yourself people, who play badminton in a sport club, go jogging and surfing in the weekend, go to the fitness club for power training and go skiing in winter time have to dispose of the necessary bodily instruments. For those not possessing this body capital, the construction of an individualized

sport biography will be extremely difficult. For them, the body will hardly become *“zu einem festen Kristallisationspunkt für Selbstverwirklichung und allgemeine Lebensbejahung“* (Bette 1999: 158) and therefore only a last authority in times of *“riskanter Freiheiten“* (Beck & Beck-Gernsheim 1994). Someone who has not learned to manage his/her body in a sportive context, will not benefit much from the identity-creating function of bodily activities. Moreover, individualization is increasingly a question of money. Whereas the *“Technisierung und Technologisierung der Sport-, Spiel- und Bewegungskultur“* (Hummel & Rütten 2001: 5) used to be constrained to top-level sport, it has nowadays moved down to different kinds of mass sport activities. Sport participation has increasingly become dependent upon several expensive sport-related goods and products, partly due to technical innovations in sport material (Heinemann 2001; Heinemann & Schubert 1999; Hummel & Rütten 2001; Lamprecht & Stamm 1998). For economically disadvantaged groups, the development towards expensive sport goods might act as a barrier to participate. In addition, and related, the expansion of sport implies increasing differentiation, *“die ihrerseits möglicherweise wieder eine neue Basis für Distinktions- und Klassifikationskämpfe bietet. Die Differenzierung äußert sich im Auftauchen neuer ‘exklusiver’ Sportarten und in einer generellen Aufsplitterung des Sports in unterschiedliche Felder mit je eigenen Funktionen und Zielen“* (Lamprecht & Stamm 1995: 267). Sport performances, the experience and manipulation of one’s own body, etc. have a double meaning. On the inside, they are part of an individual’s wrestling for authenticity or identity, but on the outside actors try to show their sportiveness and their identity to others. This leads us to the work of Pierre Bourdieu (see Bourdieu 1978, 1979, 1988, 1991), who stated that the ‘sport field’ (*le champs sportif*) provides opportunities to identify oneself with certain groups as well as differentiate and distinguish oneself from others with the aim of acquiring and exercising certain forms of power (Booth & Loy 1999; Wilson 2002).

Theoretically, the work of Bourdieu can be situated within a neo-Weberian tradition in which the structure of society is interpreted as the result of a struggle between social groups for scarce goods, a *struggle between classes* (Van Tuyckom & Scheerder 2009). Bourdieu sees society as a social space within which three classes are active: the dominant class or bourgeoisie, the middle class or petit bourgeoisie, and the working class. This social space consists of several overlapping ‘fields’ such as politics, science, art and also sport (Laermans 1984). Within these fields there is a continuous - partly unconscious - struggle for power going on between all players to acquire the scarce goods that are available in that field. To acquire power and influence in a field, capital is needed. The type of available resources is dependent upon the social conditions in which one lives and the social position one occupies. Conditional upon the available resources, individuals will experience certain thresholds or incentives that influence their behavior. Moreover, for Bourdieu, the available resources are not limited to merely economic capital such as money or real estate. Apart from economic capital, he also created the term symbolic capital, which he further divided into cultural and social capital. Cultural capital encompasses the total amount of values and opinions referring to ‘highbrow culture’, among which knowledge, education, certificates, etc. (Peterson & Kern 1996). Social capital equals the social contacts one maintains with family, colleagues, friends and relatives, as well as the social networks or relationships one can appeal to. A

central position in Bourdieu's model is that the different forms of capital are convertible, i.e. economic capital can be transformed into symbolic capital, and vice versa.

In each field people unconsciously develop a certain 'habitus', which can be defined as a socially constituted system of dispositions, i.e. lasting, acquired schemes of perception, thought and action (Weininger 2005). The habitus thus exists on the one hand of schemes of action that determine one's behavior and consumption (i.e. the appropriation of goods and participation to activities), and on the other hand of schemes of appreciation that determine an individual's lifestyle. The life circumstances in which individuals grow up are, however, not equal for everyone. Therefore, individuals who grew up in the same echelons of society will have more or less similar dispositions and consequently will exhibit more or less the same (echelon- or class-bound) behaviors and taste preferences. The deeply rooted internalized habitus consequently produces specific preferences and behavior with regard to food, holidays, art and also sport. Georg, Hasenberg & Zinnecker (1996) speak in this sense of a social heritage of sport culture. Whether or not sport participation is passed on to the next generation is dependent upon the milieu of origin in which one is raised, that is, parents who value sport as a cultural good will pass it on to the next generation. Moreover, sport participation is also influenced by one's educational background. Those longer involved in school do not only have the possibilities to use low cost or free school sport facilities, but their longer socialization period also creates specific attitudes, dispositions and preferences which favor long-lasting participation in sport (Nagel 2003).

Bourdieu's work became well-known thanks to his 1979 book *La distinction: Critique sociale du jugement* in which he elaborated the way in which social classes are related to each other by studying their respective lifestyle and cultural taste. Bourdieu considers this lifestyle not only as the result of personal preferences, but also as the expression of the social group to which an individual belongs. Just as eating, drinking or dressing, taking part in sport and physical activities is part of the total range of activities denoted as 'lifestyle' (Bourdieu 1991). Through participating in sport - or by *not* participating - and particularly through the way of participating in sport (the intensity, context, frequency, preference, etc.), individuals strengthen the values and norms that are related to a specific social group. This distinguishes them from individuals who belong to other social groups, against which they - consciously or not - position themselves. Sport participation as an expression of lifestyle consequently not only serves to be permitted to (and identified with) certain societal groups, but also serves as a role of distinction against other groups. Between the different social groups, there is a so-called 'cultural mobility' of behavior (Di Maggio 1987, 1991). The downward movement or trickle-down effect (Weininger 2005) dominates: sport behavior spreads mainly from the higher to the lower echelons of society. Moreover, 'cultural mobility' seems to be greater than 'social mobility', which means that forms of participation and consumption goods are more easily adopted by other echelons, than that members of a certain echelon change their social position. Changes in social positions are consequently less common than changes in lifestyle (Van Tuyckom & Scheerder 2009). In addition, when this 'cultural mobility' is taking place, people standing higher on the social ladder will transfer their interests to other sports or sport goods (from tennis to golf, for instance, see Stokvis 1989). In sum, according to Bourdieu, sport is one of the ultimate

domains in which social differences between individuals and groups are constantly confirmed. "*Sport, like any other practice, is an object of struggles between the fractions of the dominant class and between the social classes*" (Bourdieu 1991: 361).

Also in recent sport participation research, several authors have found that the social position one occupies (based on education, occupation or income) is still of importance for the patterning of sport participation (Baur & Braun 2001; Cachay & Hartmann-Tews 1998; Heinemann 1998; Lamprecht & Stamm 1999; Ohl 2000; Roberts 1999). However, not all characteristics of active sport participation can be traced back to the influence of the social layer one belongs to. One's societal position is namely not only determined by structural factors such as education or occupation, but also by horizontal factors such as gender, age, marital status, household composition, etc. Differences in sport participation are consequently also linked to social and cultural differences between men and women, youngsters and elderly, single and married individuals, etc. - factors that can also be seen as part of the economic (property, income), cultural (education, schooling) and social (networks, relationships) capital of certain social groups (Donnelly 1996; Jarvie & Maguire 1994; Scheerder et al. 2002; Sugden & Tomlinson 2000). Sport participation is simultaneously influenced by several factors, it is *multi-social* and *multi-cultural* embedded (Laermans 1999: 19). As main determinants of sport participation, apart from one's social position, particularly gender and age have been mentioned (Breuer 2004; DaCosta & Miragaya 2002; Hartmann-Tews & Lütken 2006; Hartmann-Tews & Pfister 2003; Scheerder, Vanreusel & Taks 2005; Scheerder et al. 2002; Stamm & Lamprecht 2005; Wiley, Shaw & Havitz 2000). The lower sport participation rates of women and elderly have been explained, among others, by the fact that not only sporting opportunities, but also infrastructure and organizations are insufficiently adapted to the interests and social habitus of women and elderly. The sport club culture is still dominated by young men - who mainly value competition, performance, strength, etc. - and consequently does not appeal to many women and elderly - who associate sport more with expressive or instrumental-functional motives - (Baur & Beck 1999; Heinemann 1999). Women and elderly therefore favor 'light communities' aimed at fitness and wellbeing, demanding less commitment than 'greedy institutions' (Coser 1974) such as sport clubs (Hartmann-Tews & Pfister 2003; Heinemann & Schubert 2001). In addition, women are more often confronted with double burdens (i.e. combining family-, household- and occupational obligations) and therefore lack the time to be physically active in their (sparse) leisure time (Garhammer 1994; Kay 2000).

It thus seems that irrespective of the *Sport for All* strategy adopted by national and local governments and irrespective of societal modernization and individualization processes, socio-structural differences are still at play in the field of sport. These differences will be further elaborated on in several of the empirical papers. But before turning to the empirical studies, we will first take a closer look at *Sport for All* in a cross-national context.

## SPORT FOR ALL IN A CROSS-NATIONAL CONTEXT

In this part, we discuss several related components referring to the meaning of *Sport for All* within a European context on the one hand and to the cross-national study of sport participation on the other hand. In the introduction, we already briefly touched upon the *Sport for All* policy adopted by many European countries throughout the course of the twentieth century. In the *first section*, we elaborate on the emergence and content of this policy. In the *second section*, we discuss the diversity and cultural variability of sport in the European Union. We show that sporting universalism and globalization has definitely not wiped out national differences. In the *third section*, we bring context back into the game. In sum, we hypothesize that sport participation within the European Union is characterized by cross-national, individual as well as cross-level differences. Therefore, a multilevel framework (including individuals as well as the broader environment) is needed, which can be found in the socio-ecological model. However, since the object of cross-national research is already the result of mutual influences, one can wonder about the exact aims and methods of cross-national research. In the *fourth section*, we therefore briefly discuss the specificities and aims of cross-national research as well as the different methods of comparison. In the *fifth section*, we situate each of the empirical papers included in this dissertation.

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### EMERGENCE OF EUROPEAN *SPORT FOR ALL* POLICY

*Sport for All* was adopted in 1966 as the major long-term objective for the sport program of the Council of Europe. In 1968, a planning group had met to define the content of the idea of *Sport for All* and stated that the overall aim of *Sport for All* was “...to enable everyone - of both sexes and all age groups - to preserve the physical and mental powers necessary for survival and to protect the human species from deterioration” (Council of Europe 1980: 3). These basic principles were reformulated in less apocalyptic terms in 1975 during the conference of European ministers responsible for sport in Brussels, where the European Charter of Sport for All was defined (Council of Europe 1975). Key conceptions in this Charter are: the right to participate in sport, human and socio-cultural development, co-operation between public authorities and voluntary organizations, safeguarding sport from exploitation, accessibility of facilities and nature for the purpose of recreation, and the need for qualified personnel at all levels (for the full Charter, see Figure 2). A close reading of the articles clearly shows that *Sport for All* was in the beginning stages of the political culture of those days (the post 1968-years), when democratization, participation, inclusion and pluralism were the current expressions. *Sport for All* as a consequence of industrialization, computerization, urbanization, etc. expressed the new (educational) role of sport in a changing society<sup>2</sup>.

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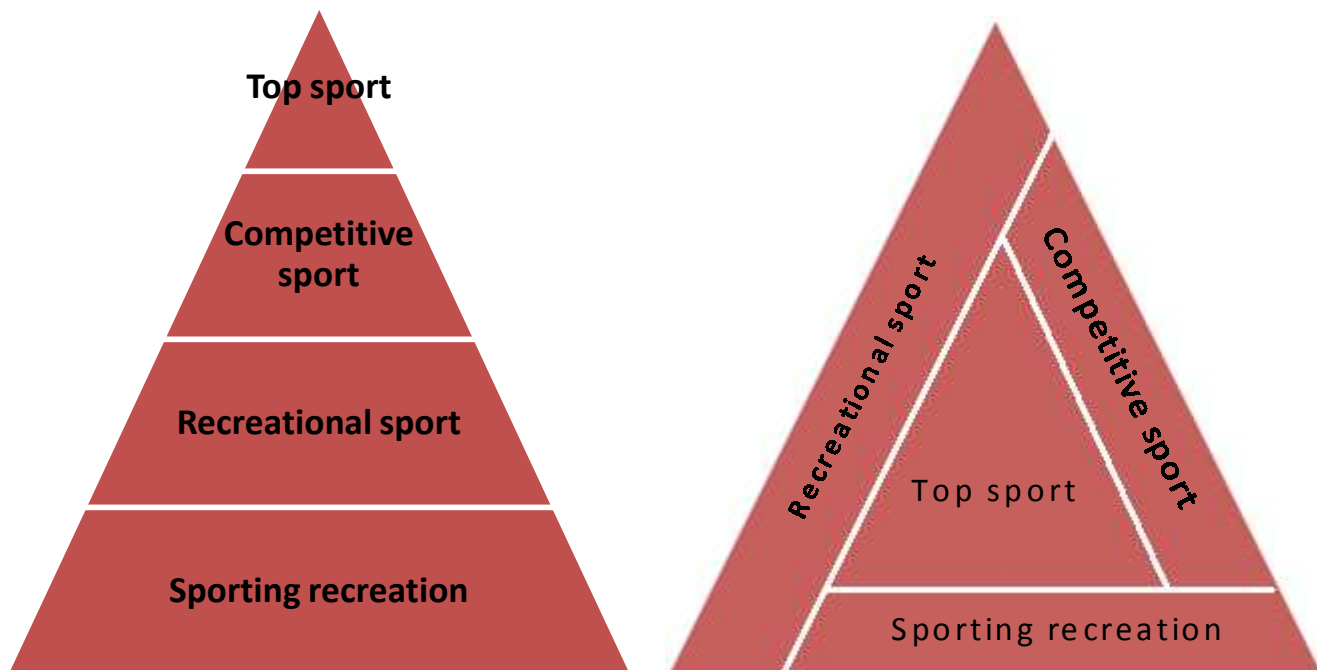
<sup>2</sup> It was, however, not the first time that governments made efforts to provide physical exercise for their citizens. In the nineteenth century, for instance, gymnastics already enjoyed governmental support in the Scandinavian countries and in Germany. In the 1920s the government of the Weimar Republic promoted sport for all German citizens, and in 1931 the USSR launched a campaign to physically train the population under the title ‘Ready for labour and defence’ (De Knop et al. 2006: 239).



**Figure 2:** European Sport for All Charter, defined by the Conference of European ministers responsible for sport in Brussels in 1975 (Council of Europe 1975)

Originally the *Sport for All* policy was elaborated to lower the threshold for sport participation and to provide a pluralist sporting landscape, consisting of top sport, competitive sport, recreational sport and sporting recreation. However, although the *Sport for All* concept was a pluralistic one, it still suffered from a pyramidal hierarchical concept of competitive sport, which saw top sport high at the top of the pyramid and sporting recreation down low at its basis (Renson 1983). Therefore, it was proposed to deconstruct the classical pyramid and to reconstruct it in a non-hierarchical way, as presented in Figure 3. Very soon, the concept of *Sport for All* was reinterpreted and was staged as an alternative to highly standardized, often commercial, competitive sport. *Sport for All* and competitive sport became two antithetical planning and decision making models within the domain of physical culture (Heinilä 1971). Both differ widely in goals and means, whereby the ideological model of *Sport for All* is opposed to the instrumental model of competitive sport. According to Heinilä (1971), the norm sources of *Sport for All* are the personal motives of sport participants, and participation is much more important than the result. The instrumental or competitive sport model, on the contrary, emphasizes external group interests as main norm sources, and competitive success and results are more important than the activity as such. In contrast to this focus on performance, sport in the European Charter is “to be understood in

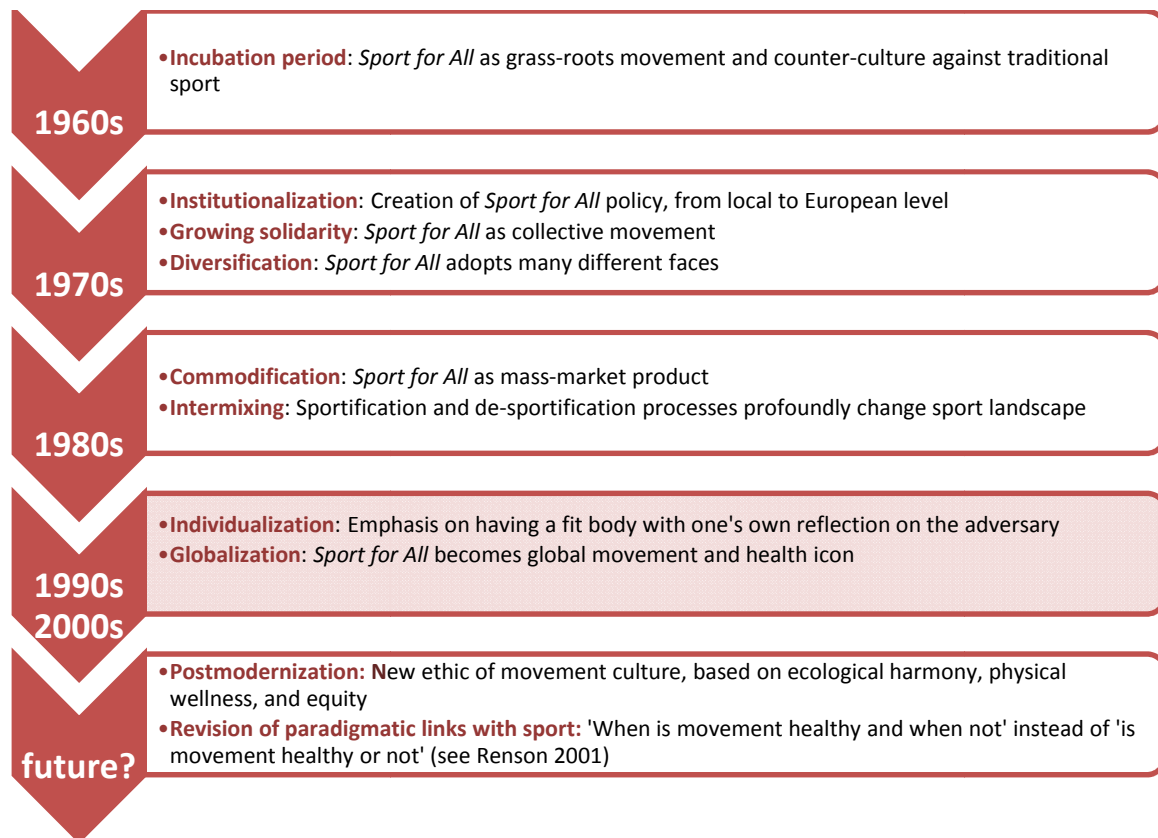
*the modern sense of free, spontaneous physical activity engaged in during leisure time; its functions [...] being recreation, amusement and relaxation. Sport in this sense includes sports proper and various other physical activities provided they demand some effort”* (Marchand in Hartmann-Tews 2006: 111). The central idea of *Sport for All* in the European Charter consequently includes not only competitive games and sport, but also multivarious forms of recreational physical activity (Hartmann-Tews 2006).



**Figure 3:** The traditional sport pyramidal model (left) versus the pluralist *Sport for All* model (right), based on Renson (1983)

The growth of the *Sport for All* movement since 1966 is, however, not characterized by a single term (De Knop et al. 2006). *Sport for All* is an adequate description of a movement that has been adopted in several different forms and has been crystallized to a governmental policy under different headings (e.g. *Trim* in Sweden, Denmark, the Netherlands and Germany; *Fitness Exercise* in Finland; *Deportes Para Todos* in Spain, *Sport pour Tous* in France; *Sport for All* in the United Kingdom; etc.). Nevertheless, in sum, *Sport for All* could be perceived as a coherent movement, addressed to leisure time physical activity for everyone. It has positioned itself, apart from top level sport, as an important development in the movement culture of the late twentieth century. However, it would be inaccurate to present the *Sport for All* movement as a straightforward homogeneous movement, well planned and managed over the former 30-40 years. On the contrary, *Sport for All* developed and drastically changed over this period of time. In Figure 4, a time trend review of *Sport for All* over the former 30-40 years is presented (mainly based on De Knop et al. 2006: 237; Vanreusel, Taks & Renson 2002: 381).





**Figure 4:** Historical development of *Sport for All* movement (mainly based on De Knop et al. 2006; Vanreusel, Taks & Renson 2002)

Although the official start of *Sport for All* is usually situated in the mid 1970s (e.g., definition of the European Charter of Sport for All in 1975), there was an ‘incubation’ period some years before. As previously mentioned, the counterculture of the 1960s has cleared the way for a democratic movement in sport, which was only recognized a decade later. In the 1970s, the *Sport for All* body grew to adult proportions with a government supported mission and policy. The *Sport for All* idea was adopted from the local community level to the European level (e.g. Comité pour le Développement du Sport, CDDS). Professional marketing and promotion campaigns raised the awareness and changed attitudes towards a sport active lifestyle. As a result, the increase of active sport involvement appeared to be the highest in the late 1970s. The 1980s further built on these structures and featured an unprecedented cultural change in the sporting landscape. Active sport involvement was discovered as a product by the market. Next to public sponsored sport services, a private sport activity market emerged on a commercial basis. A commodification of physical activities took place, particularly in the context of fitness and health. Processes of ‘sportization’ and ‘de-sportization’ resulted in a complex intertwining of sport with other segments of society. The picture of a rather narrow traditional sporting culture was enlarged to a wide scalef movement-culture of activities and programs (see Cachay 1990; Crum 1993; Digel 1990). In the 1990s and first decade of the 21<sup>st</sup> century, individualization has become the key term (as was already elaborated on in the introduction). As a consequence, *Sport for All* is more and more translated and understood as individual fitness and health. A shift of paradigm in *Sport for All* takes place, away from sport and leisure time physical activity towards the more general concept of physical activity. The notion of *Sport for*

*All* itself becomes somewhat old fashioned. Supported by overwhelming scientific evidence, daily leisure time physical activity - or better, the lack of leisure time physical activity - is recognized as a health/risk factor. As a result, leisure time physical activity in an endless variety of well-marketed versions (such as aerobics) is promoted as a health factor. Further developments will need a complete conceptual rethinking of *Sport for All*, which will probably be gradually swallowed and fragmented in the postmodern mixture of movement cultures. According to Renson (2001), the postmodern era will replace the worn out sporting values, based on the principle of progress at all costs, by a new ethic of movement culture, based on ecological harmony, physical wellness and equity and by the critical revision of some of the paradigmatic myths linked with sport, i.e. sport is healthy (see also Vanreusel & Scheerder 2000 for an overview of expectations for the future).

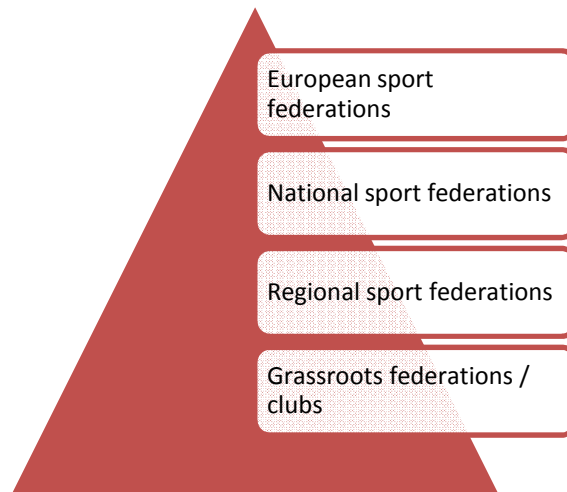
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## CULTURAL VARIABILITY OF SPORT IN THE EUROPEAN UNION

Sport in Europe is characterized by a fascinating diversity. Nevertheless, it is often used as example of a 'globalized phenomenon'. According to Heinemann & Schubert (2001), this has several reasons. First, the same sports are played all over the world according to the same rules. Second, international competitions have always been conducted on all sporting levels, making sport itself a starting point for diverse cultural encounters and a crystallization point for integration and the reciprocal adoption of cultural patterns. Third, national sporting organizations have given international organizations the task to promote cooperation and exchange between sportsmen and -women, teams and associations of different countries as well as to ease this exchange by the creation of binding rules. The result is a relatively united system of organizations, rules and competitions covering and penetrating different societies and countries<sup>3</sup>. This image of a uniform 'globalized' sport model does, however, not strike with reality and can only be encountered in the heads of influential (international) sport officials. For a long time, the European Commission, for instance, has spoken of a 'European model of sport' (European Commission 1998), in which sport clubs are members of their respective regional sport federations, which are all combined at the national level in the national umbrella sport organizations. These national sport federations are members of European sport federations (i.e. EOC's) and international organizations (i.e. IOC) (see Figure 5 for a graphical presentation). This European sport model thus consists of the keywords 'competition', 'pyramid structure', 'club structure', etc. without taking the different national organization or societal embeddedness of sport into account. It is only in 2007, with the publication of the White Paper on Sport that the European Commission acknowledged that "*in the view of diversity and complexities of European sport structures it considers [...], it is unrealistic to try to define a unified model of organization of sport in Europe*" (European Commission 2007: 12).

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<sup>3</sup> Moreover, the general forces leading to world-wide standardization also have their effect of sport. In this sense, world-wide covering of sporting events in the mass media, world-wide distribution of standardized, uniform sporting articles, international job market for professional sportsmen, etc. also lead to a global standardization of sport.



**Figure 5:** The organization of sport in Europe - the pyramid model (European Commission 1998)

Several publications covering the issue of organization of sport in Europe reveal that it is characterized by its own diversity (see Chalip, Johnson & Stachura 1996; De Knop et al. 1996; Heinemann 1999; Heinemann & Schubert 2001; Houlihan 1997; Jütting 1999; Miège 2000; Petry, Steinbach & Tokarski 2004; Tokarski & Steinbach 2001). They all emphasize variety and reveal huge differences regarding the relations between state and sport, the role and functionality of self-administration, the structure of sport clubs, etc. Tokarski & Steinbach (2001: 168) talk about an *“almost unclear variety”*, while Heinemann & Schubert (2001: 11) exclude the development of a *“one-society-model”* in the light of sport, as in this way, the diverse processes of mutual penetration taking place between societies are overlooked. Individual societies receive their individual sporting profile through the *“permeation of the internal and external conditions, in other words out of what is embedded in their own history and tradition and that which as a result of the reciprocal exchange with other cultures, usually over the course of several centuries, has been adopted and selectively fitted into their own culture”* (Heinemann 1999: 20). The historical process leading to the socialization of sport in different countries with its respective social, cultural, economic and political qualities is a perfect example of this interweaving of internal and external conditions. Only after recognizing this interweaving, it is possible to understand ‘sport’ in different societies. We therefore briefly elaborate on the origin of sport in Europe, in which both forces leading to a uniform picture of sport as well as influences which have maintained or strengthened cultural differences should be considered.

All books about the rise of modern sport point out that ‘sport’ is an English term, because the origins of sport are English (Heinemann & Schubert 2001). The term ‘sport’, and that what is meant by it, has consequently been adopted in most European languages (occasionally with a local variation such as *deporte* in Spanish). However, the fact that the word ‘sport’ is used everywhere and that, for instance, football/soccer is played everywhere does not mean that the concept of sport in Europe can be equated with that of English sport (Heinemann 1999). Indeed, modern sport was born in the United Kingdom in the middle of the nineteenth century (Elias & Dunning 1986; Guttmann 1996; Mandell 1984) and was considered the product of ‘pedagogical treatment’ of traditional, popular games. Traditional games thus became transformed into an instrument of

education within English schools. The dissemination of sport outside the United Kingdom throughout the end of the nineteenth and first half of the twentieth century was due to both the country's economic and political influence at that time and involved the formalization of structured competitions according to written, universal rules and according to a specific calendar. It affected all European countries, although at different speeds and in ways specific to each particular country. As previously mentioned, today, the term 'sport' has become a generic term designating almost the entire range of contemporary physical cultures (Camy et al. 2004). In order to adequately describe the development of sport in Europe, one has to take the main components lying at the origin of this polymorphic entity into account. This is what we do below.

The first component consists of traditional popular games, which are generally associated with festivities and the celebration of local communities' identities. These games are constituting the 'raw material' for modern sport which were constructed by applying a specific temporal, organizational and spatial format to some of these games. English sport is consequently characterized by the comparison of ability in competitions and the striving for records. The principle is: two parties compete against each other; at the beginning they are perceived as equal but at the end as unequal, as a result of victory or defeat. A related component of modern sport results from what is called 'academic arts', particularly the activities that were practiced by young aristocrats in preparation for war (e.g., fencing and riding). However, when looking at the development of modern sport, the most significant components are probably 'gymnastics', referring to two currents which have played a structural role in the physical culture of all European Union member states, i.e. German 'Turnen' and Swedish gymnastics. Unlike English sport, gymnastics are not characterized by the idea of comparing achievement through competitions. What is important in 'Turnen' is bodily health, building-up of the body, toughening up, strength and skill, presence of mind and courage in moments of danger, and intellectual and moral education (see Cachay 1988). Swedish gymnastics can best be compared with the model of a machine. It divides human movements into separate components and promotes the stereotypical repetition of these in order to train individual parts of the body and muscles. An additional component noted by Camy et al. (2004) are individual, nature-oriented outdoor activities (e.g. mountaineering) which have been emerging since the end of the nineteenth century.

The various European countries have drawn from the above sources in varying ways and formed their own respective national concept of sport. *"Just as one can mix completely different substances from the same chemical elements, so different national sporting cultures have shown up through the national adaptation of these sources of sport"* (Heinemann 1999: 21). These can be loosely organized into the following four areas (see Camy et al. 2004; for a historical overview of individual countries, see country profiles in Heinemann 1999). First, a 'Nordic physical culture', with a strong health and voluntary aspect and expressed by a strong relationship with nature, is predominantly found in Scandinavian countries. Second, a 'British national physical culture' primarily based on sport and competition in the context of associations is present throughout the European Union but particularly in the United Kingdom and the Netherlands. Third, a 'Germanic physical culture', descending from the German 'Turnen' tradition is anchored strongly within local communities and

found in almost all central European countries. Fourth, a 'Mediterranean physical culture' conserving collective ceremonies celebrating the physical body, represented in contemporary events where sport serves as entertainment is particularly found in the Mediterranean countries.

Evidently, this scheme is very rough and therefore debatable. However, it is only described to illustrate that sporting universalism or globalization has clearly not wiped out national differences. It should be clear by now that globalization does not mean the creation of a 'one-society-model', but instead "*the (further) development of independent (sporting) cultures in a mass of intersecting, complementary, and competing processes of socialization*" (Heinemann 1999: 26). The structures and developments in sport participation do not consequently occur in all countries to the same degree as the situation in each member state is the product of its own (sport) tradition, (sport) policy and (sporting) identity. This has led, on the one hand, to a fascinating diversity, but on the other hand, it has created structural differences in both the level and the social stratification of sport participation between countries. The present dissertation will elaborate on these differences, as the overview of research questions at the outset of the introduction illustrates. In general, this dissertation will show that sport participation declines when moving from north to south in Europe (Van Tuyckom & Scheerder 2008, 2010a, 2010b, 2011). Citizens from more northern locations and from Scandinavian countries exceed their continental colleagues from the Mediterranean Sea area. In addition, Eastern-Europeans generally score less well than Western-Europeans (with some exceptions such as Slovenia). Moreover, in the North-Western part of Europe, club-related sport seems to be dominant and in the Southern regions fitness centers prevail, whereas sportive action in the new(er) member states occurs more than averagely in a non-organized context (Van Bottenburg, Rijnen & Van Sterkenburg 2005; Van Tuyckom 2011b). What is more, the structures in sport practices do not occur in all countries to the same degree: the magnitude of individual differences varies cross-nationally. With respect to gender, for instance, women residing in Southern countries (Portugal, Greece, Italy) appear to have the greatest deficit with respect to sport while the levels of female participation in Scandinavian countries (Sweden, Finland, Denmark) and the Netherlands are equal or even higher than those of men (Gratton 1999; Van Tuyckom, Scheerder & Bracke 2010).

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#### BRINGING CONTEXT BACK INTO THE GAME: A SOCIO-ECOLOGICAL MODEL FOR STUDYING SPORT PARTICIPATION

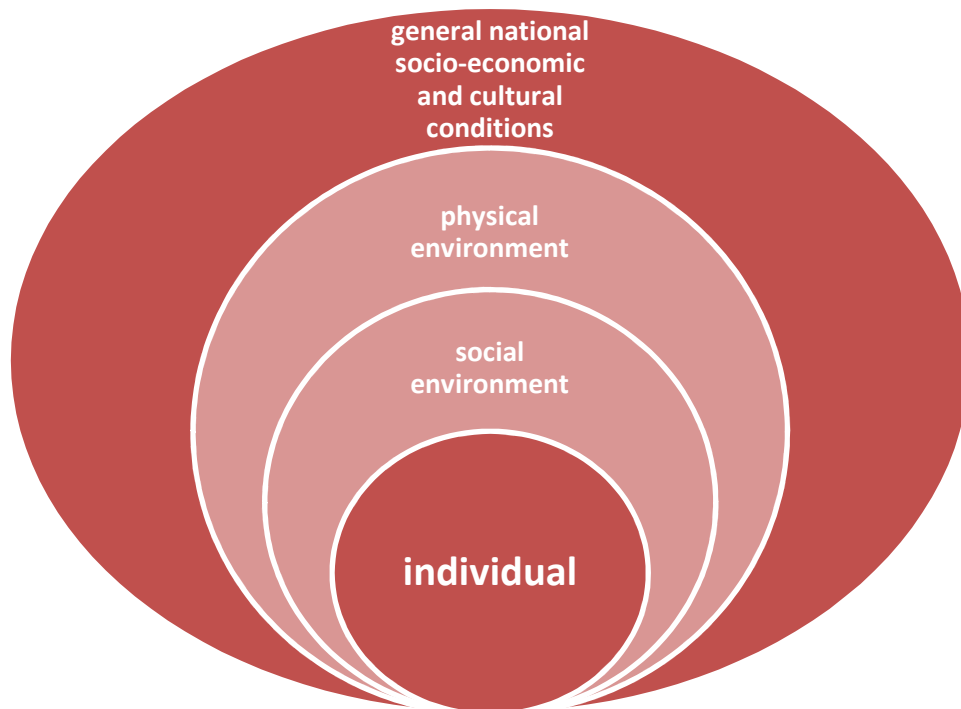
Since the research questions underlying this dissertation are situated both on the individual and the national level, a multilevel focus for studying sport participation within the European Union is needed. This can be found in the socio-ecological model, which core assumption is that multiple facets of individuals and their environment influence the sport participation behavior of people. This model is elaborated on below.

In the past, sport participation research has often been based on theoretical models on the determinants of individual behavior, such as the *Model of Planned Behavior* or the *Stages of Change Model*, which point of departure is a cognitive approach relying on the assumption that sport participation is a matter of individual choice. The individual is consequently targeted to change his or her sportive practices largely through

education, without interceding in the physical, social or cultural environment (Van Bottenburg, Rijnen & Van Sterkenburg 2005). However, these models forget to see the possibilities and impediments for sportive action as part of broader societal developments (Lamprecht & Stamm 1994, 1998) and lay the problem at the door of the individual. Nevertheless, as is described above, the opportunities to be able to take part in sport are partially determined by the broader (socio-)historical context in which one is situated. The sporting behavior of Europeans brings individual biographies, the structure of society and culture together with national and European history (Mills 1959). However, people often are not or hardly aware that their behavior is subject to cultural influences. Nevertheless, sport is always embedded in a broader cultural context, characterized by particular beliefs, norms and values determining what kind of sporting behavior is acceptable (Breuer 2004). In sum, sport is a thoroughly social phenomenon which takes place and finds its meaning within a broader social context and must consequently also be understood and approached as such. We therefore rely on the socio-ecological model (Bronfenbrenner 1979; McLeroy et al. 1988; Stokols 1992) for studying sport participation (see Figure 6). Bronfenbrenner (1979) saw influences on behavior as a series of layers, where each layer had a resulting impact on the next level. He described the layers as a series of Russian dolls, with the innermost level representing the individual, who is consequently surrounded by differing levels of environmental influences. All levels of the socio-ecological model have an impact on the behavior of the individual (Stokols 1992), which is represented by a series of overlapping circles, with each circle representing a different layer or component of the model. An individual's social environment (consisting of family, friends, workplace, etc.) is embedded within the physical environment (consisting of access to sporting facilities, community design, etc.)<sup>4</sup>, which in turn is embedded within general national socio-economic and cultural conditions. The list of examples of these conditions is endless as they might include the different forms of integration of sport and its organizations in the political constitution of a country, the way in which the parties involved in the system are co-ordinated, the complementary organization of different ways of life, the legitimacy of social relations, the general level of prosperity, the available technology, the meaning and function of the family, the position of women, the integration of religion, the forms and institutions of socialization and significance of sport, the employment and production structures, the varying provision of sporting facilities, etc. (see Camy et al. 2004; De Knop et al. 1996; Heinemann 1999, 2003; Tokarski et al. 2009, among others).

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<sup>4</sup> The social and physical environment are, however, not the focus of this book. For more information regarding the influence of the social environment, see Sallis, Hovell & Hofstetter (1992); Sternfeld, Ainsworth & Quesenberry (1999); Steptoe et al. (1997), among others. For more information regarding the influence of the physical environment, see Humpel, Owen & Leslie (2002); Rütten et al. (2000, 2001); Van Tuyckom (2009); Wicker, Breuer & Pawlowski (2009), among others.



**Figure 6:** Socio-ecological model for studying sport participation

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#### SPECIFICITIES AND AIMS OF CROSS-NATIONAL RESEARCH

Since the object of cross-national comparative research (in our case, sport participation) is already the result of mutual influences and penetration (as discussed above), one can wonder about the exact aims and methods of cross-national research. In the following, we therefore briefly discuss the specificities and aims of cross-national research as well as the different methods of comparison. Subsequently, we situate each of the empirical papers included in this dissertation.

Cross-cultural and cross-national studies are part of comparative research and shares with it a large amount of methodological and methodical problems (Kohn 1987). What all 'comparative studies' share is the comparison between different cultures, countries, groups or subgroups, but also time periods (Nowak 1989) which makes comparative sociology not fundamentally different from other sociologies in either its goals or its methods, as Grimshaw (1973) concludes. However, cross-national research comes at a price. It is costly in time and money, it is difficult to do, and it often seems to raise more interpretive problems than it solves (Kohn 1987). It is therefore only worthwhile under very specific conditions, in particular when *"the research design enables the researchers to test hypotheses that can only be tested in international (cross-national or cross-cultural) research"* (Berting, 1982: 14). This is for instance the case when macro-sociological variables are included to explain social phenomena, or when variables on a higher level interact with those on a lower level. For instance, sport participation within Europe, as well as the social stratification of sport participation, might differ according to geographical indicators such as North-East-South-West country groupings, welfare indicators such as GDP per capita and level of urbanization, cultural indicators such as type of welfare state, and policy indicators such as type of sport policy system (See Camy et al. 2004; Van Tuyckom & Scheerder 2010a; Van

Tuyckom 2011b). Several authors have tried to classify comparative research (see Kohn 1987; Scheuch 1990; Van de Vijver & Leung 1997 among others). Unfortunately, there is not enough space here to discuss all of them into detail, but for an overview, see Van Tuyckom, Bracke & Scheerder (2011a).

In the field of sport research, there is - to the best of our knowledge - only one study providing a typology of comparative studies. In particular, Henry et al. (2005) distinguish between four different types of comparative studies. The first type, *describing difference*, is an ideographic approach seeking to capture the specificity of policy systems, for example Houlihan's (1997) and Tokarski et al.'s (2009) account of the sport policy systems of different European countries. The second type, *theorizing the transnational*, goes beyond the nation-state as unit of analysis to fuse global and local levels of explanation, for example Maguire's (1999) process- or figurational sociology account of the globalization of sport. The third type, *defining discourse*, seeks to analyze ways in which policy discourse defines the reality of the policy problems it seeks to address, for example McKay's (1994) analysis of the way in which the Australian Sport Commission has framed its gender equity policy in the mutually reinforcing hegemonic discourses of masculinity and corporate managerialism. The empirical papers in **chapters 3 to 5**, however, all fit within Henry et al.'s (2005) fourth type, *seeking similarities*, which is a nomothetic approach seeking law-like generalization and involving those studies that operationalize some measure of participation or policy commitment in order to allow comparison along multiple cases of policy systems, such as the cross-national analysis of sport participation in Europe (see also Gratton 1999; Van Tuyckom & Scheerder 2008, 2010a, 2010b, 2011; Van Tuyckom 2011a ).

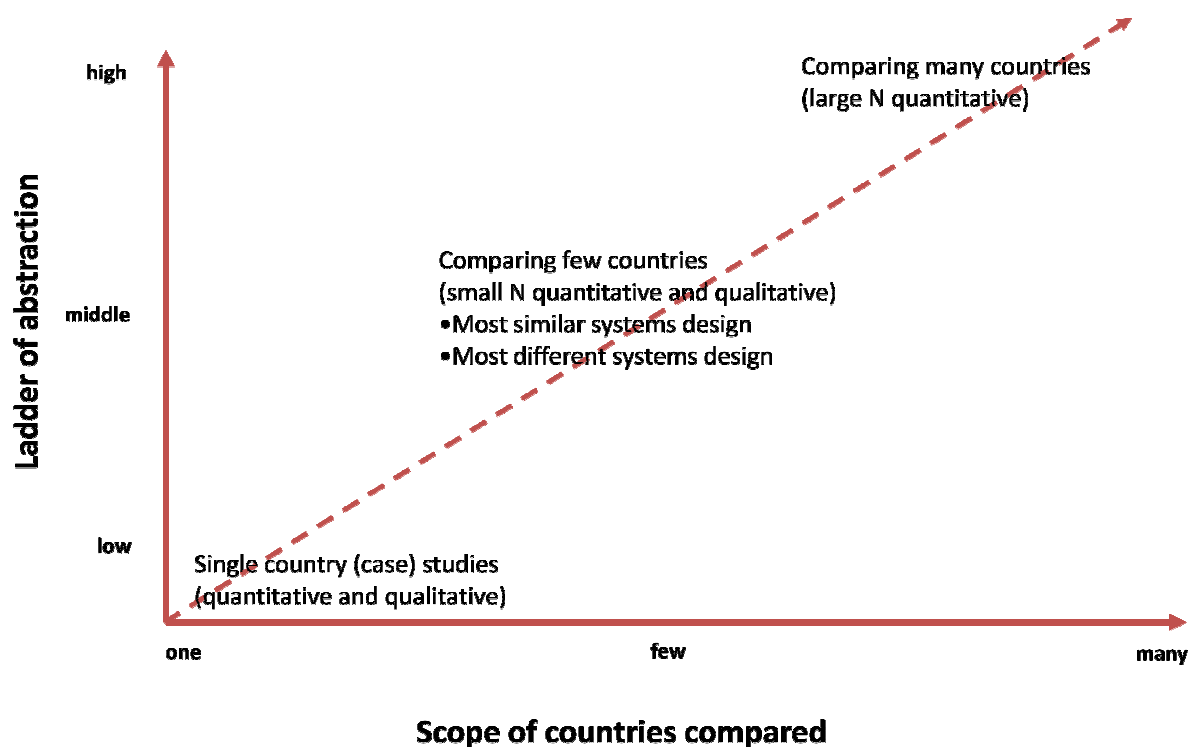
To situate the empirical papers included in this dissertation (see further), we have relied on the work of Landman (2008) who establishes four main reasons for comparison, including contextual description, classification and 'typologizing', hypothesis-testing and theory-building, and prediction (see also Hague et al. 1992: 24-27; Mackie & Marsh 1995: 173-176). Landman (2008) departs from the fact that the activity of comparing countries centers on four main (mutually reinforcing) objectives. The first objective of comparative research is *contextual description*, which allows scholars to describe phenomena or events of a particular country, or group of countries. Second, in the search for simplification, comparativists often establish different conceptual classifications in order to group a vast number of countries into distinct categories with identifiable and shared characteristics. Like contextual description, *classification* is a necessary component of systematic comparison, but represents a higher level of comparison since it seeks to group many separate descriptive entities into simpler categories. Classification makes the world less complex by seeking out those qualities that countries share and those they do not share. Once things have been described and classified, researchers can move on to search for those factors that might help explain what has been described and classified in order to build more general theories, i.e. *hypothesis-testing*. Comparison of countries consequently allows rival explanations to be ruled out and hypotheses derived from certain theoretical perspectives to be tested through examining cross-national similarities and differences. Finally, the most difficult objective of comparative research is a logical extension of hypothesis-testing, namely to make *predictions* about the likely outcomes in other countries, or to make claims about future outcomes.



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**METHODS OF COMPARISON<sup>5</sup>**

In the literature, contradictory recommendations about how exactly to pursue cross-cultural comparative studies and different strategies to choose the comparative countries have been formulated (see Grimshaw 1973; Jowell 1998; Küchler 1998; Peschar 1982; Przeworski & Teune 1970; Scheuch 1990; Smelser 1996). According to Landman (2008), the distinction between different comparative methods should be seen as a function of the particular research question (i.e. purely psychological or macro-sociological), the time and resources of the researcher, the method with which the researcher is comfortable, as well as the epistemological position he or she adopts. The central distinction, however, depends on the key trade-off between the level of abstraction and the scope of countries being studied (Mair 1996). In general, the higher the level of conceptual abstraction, the more potential there is for the inclusion of a large number of countries in a study, where concepts ‘travel’ across different contexts (Sartori 1970, 1994). Figure 7 summarizes these methods of comparison by showing this trade-off between the level of abstraction and the scope of countries. Evidently, in reality, the lines of distinction between the various methods are more blurred, and there are studies that use several methods at once.



**Figure 7:** Methodological trade-offs for choosing countries (based on Landman 2008)

*Comparing many countries* most closely approximates the experimental method found in natural sciences. The large number of countries makes this method of comparison particularly suited to quantitative analysis of

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<sup>5</sup> Parts of this text are forthcoming in *Sport participation in Europe. From facts to sheets* (edited by Scheerder et al. 2011) (Van Tuyckom 2011d).

aggregate data collected on different measures that vary across many countries (Lijphart 1971). In classical sport-related studies of this type, 'objective' data are analyzed to identify forms of statistical association among social, political, economic, or cultural conditions or contexts on the one hand (e.g. levels of GDP per capita across compared countries) and policy outcomes on the other (e.g. size of sport club or association membership). Typical dependent variables in such studies are: frequency of sport participation (Gratton 1999; Van Tuyckom & Scheerder 2008, 2010a, 2010b, 2011; Van Tuyckom 2011a), levels of government expenditure in sport, etc. The main advantages of this method of comparison include its ability to use statistical controls to rule out rival explanations and control for confounding factors, its extensive coverage of countries over time and space, its ability to make strong inferences that hold for more cases (or not), and its ability to identify so-called 'deviant' countries or 'outliers' that do not have the outcomes expected from the theory that is being tested. The main disadvantages of this method of comparison include the limited availability of data for many countries and time periods, the validity of measures that are often crude approximations of social scientific concepts, and the mathematical and computing skills needed to analyze increasingly complicated data sets whose structure and properties violate many of the assumptions of standard statistical methods of analysis. In addition, since this method generally requires a higher level of abstraction in its specification of concepts, many see this method of comparison as inappropriate for analyzing topics involving complex causal mechanisms, historical processes, and deeper meanings and understandings that are highly dependent on the contextual specificities of discrete country cases. This type of research thus tends to ignore cultural specificities in the search for universalization or generalization. The social meaning of a sporting activity or of a definition of an expenditure category is sacrificed for the purposes of cross-case comparison. These are weaknesses that in effect promote the analysis of one or a few countries to evaluate and explain associations among social, political, economic, and/or cultural conditions and policy outcomes (Henry et al. 2005).

*Focus on one country or a few countries* means that the researcher can use less abstract concepts that are more grounded in the specific contexts under scrutiny (Nießen 1982). Adherents therefore state that "*careful comparative historical investigations are necessary to go beyond the black box character of quantitative analyses based on correlations among variables*" (Rueschemeyer 1991: 32). As previously mentioned, in comparing large number of countries, countries lose their specific identity, "*relations between variables are studied, not similarities and differences among whole cases*" (Ragin 1989: 60). Comparing few countries involves the intentional selection of a few countries for comparison. This selection might involve anywhere between two to more than twenty countries, where the distinction between the comparison of few countries and many countries remains blurred to some degree. The defining feature of this method of comparison is the intentional selection of countries from the universe of possible cases. In Houlihan's (1997) account of the sport policy systems of five countries, he chooses two policy areas (drugs in sport and physical education policy) and evaluates the nature of the policy process in each country. Emphasis is placed on capturing the specific policy history and context rather than searching for general laws. It is premised on the argument that what is distinctive about a society is important and the goal of social explanation should therefore be to account for how and why societies differ. The outcomes that feature in this type of comparison are often seen to be

'configurative', i.e. the product of multiple causal factors acting together. This type of comparison has therefore also been referred to as 'case-oriented' (Ragin 1994), since the country is often the unit of analysis, and the focus tends to be on the similarities and differences among countries rather than the analytical relationship between variables. There are two main types of research design that are included under this method of comparison. Some studies compare different outcomes across similar countries (e.g., two Eastern-European countries: one with high and one with low sport participation rates), which is known as the Most Similar Systems Design (MSSD); while others compare similar outcomes across different countries (e.g., a Scandinavian and an Eastern-European country with both high sport participation rates), which is known as the Most Different Systems Design (MDSD). In either research design, comparison of the similarities and differences is meant to uncover what is common to each country that accounts for the observed outcome (Landman 2008; Przeworski & Teune 1970). In this type of studies, sport policy, for instance, will not be considered as a set of statistically operationalized concepts, but rather as detailed qualitative accounts of individual policy systems, and perhaps the interactions among those systems. The danger of this approach, however, is the tendency to explain everything in terms of historical contingency. Comparison of a large number of exemplar states, or policy systems, is not possible because of the complexity of detailed analysis and description, and thus its core problem relates predominantly to moving beyond the descriptive, and to the difficulties associated with validating and interpreting concepts to summarize complex qualitative data relating to what could be remarkably diverse policy systems (Henry et al. 2005).

Finally, *single-country studies* are useful for examining a whole range of comparative issues: they provide contextual description, develop new classifications, generate hypotheses, confirm and infirm theories, and explain the presence of deviant countries identified through cross-national comparison (see George & Bennett 2005; Gerring 2004; Lees 2006). Henry et al. (2005) in this regard mention Henry & Nassis' (1999) study which seeks to identify whether political clientelism is evident in the Greek sport context, and if so, why this should be the case. What should however be recognized is that inferences made from single-country studies are necessarily less secure than those made from the comparison of several or many countries.

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## SITUATING EMPIRICAL PAPERS

It should now be somewhat clearer as to why and how researchers compare countries. They compare to provide context, to make classifications, to test hypotheses, and to make predictions. And they do this by comparing many countries, few countries, or they provide in-depth studies of single countries. All empirical papers in this dissertation, however, focus explicitly on *comparing many countries* based on existing cross-national datasets with a special focus on leisure time physical activity (LTPA) and sport.

The papers included in **chapter 2** can be summarized under the heading of 'empirical comments'. **Paper 1** (*Survey quality and cross-national sport research. A case study of the 2007 ISSP survey*, see Van Tuyckom & Bracke 2011) discusses several components of survey quality by means of the 2007 ISSP survey on leisure time and sport. It shows that the wide cross-national variation in sampling methods, modes of data collection and

response rates leaves room for various forms of survey error with the potential to generate misleading or biased findings. Therefore, in the subsequent papers, we rely on Eurobarometer data. Eurobarometer surveys apply standardized instruments, allowing for cross-national comparisons between the different countries. However, all studies comparing countries, regions and cultures on sport-related dimensions and sport participation in particular rest on the assumption of equivalence of meaning, that is, comparisons between countries/regions/cultures are only worthwhile when they all measure things in the same way. Unfortunately, this issue has been seriously underdeveloped in sport research literature. Therefore, in **paper 2** (*Sports - idrott - esporte - deporte - sportovní - ... The problem of equivalence of meaning in comparative sport research*, see Van Tuyckom, Bracke & Scheerder 2011b), we address this lacuna by (i) discussing the problem of equivalence of meaning in the context of comparative sport research; and by (ii) empirically illustrating the problems and caveats related to equivalence of meaning by means of exploratory factor analysis using the 2004 Eurobarometer battery on sport benefits.

The papers included in **chapter 3** fit within Landman's (2008) category of 'contextual description'. **Paper 3** (*Sport for All? Social stratification of recreational sport activities in the EU-27*, see Van Tuyckom & Scheerder 2008) presents some insight into European citizens' sporting activity patterns as well as the social stratification of sporting activity patterns in the EU-27 based on bivariate analyses of the 2005 Eurobarometer data. **Paper 4** (*A multilevel analysis of social stratification patterns of leisure time physical activity among Europeans*, see Van Tuyckom & Scheerder 2010a) extends **paper 4** by examining the socio-demographic patterning of sporting activity among Europeans in 2005 in a multilevel way. **Paper 5** (*Gender and age inequalities in regular sport participation. A cross-national study of 25 European countries*, see Van Tuyckom, Scheerder & Bracke 2010) compares gender inequalities in sport participation across Europe, and the extent to which these vary by age using the 2004 Eurobarometer survey. In **paper 6** (*Sport for All? Insight into stratification and compensation mechanisms of sporting activity in the EU-27*, see Van Tuyckom & Scheerder 2011), special attention is given to sporting activity among Europeans in 2005 in comparison to other types of physical activity (i.e. related to transport, occupation, household).

The paper included in **chapter 4** fits within Landman's (2008) category of 'classification'. The aim of **paper 7** (*Six sporting worlds. A cluster analysis of sport participation in the EU-25*, see Van Tuyckom 2011b) was to identify clusters of European nations grouped by sport participation outcomes (organizational context and intensity of sport participation in particular), in order to provide sensible groupings for international comparisons.

Finally, the papers included in **chapter 5** fit within Landman's (2008) category of 'hypothesis-testing'. **Paper 8** (*Macro-environmental factors associated with leisure time physical activity. A cross-national analysis of EU countries*, see Van Tuyckom 2011a) describes European sporting patterns and identifies some macro-environmental and -policy factors associated with sport participation rates at a national level based on the 2005 Eurobarometer survey. **Paper 9** (*Does country context matters? A cross-national analysis of gender and leisure time physical activity (LTPA) in Europe*, in review) uses the 2005 Eurobarometer survey and postulates that over and above the individual effect of gender on sport participation, there is an additional impact of a

society's gender-based (in)equality distribution. **Paper 10** (*Modernization and sport participation in 27 European member states in the light of Beck's individualization thesis*, see Van Tuyckom 2011c) investigates sport participation levels across the 27 European Union member states within a multilevel framework, departing from Beck's individualization thesis and with a special focus on the role of modernization with respect to the assumed (i) sportization of lifestyles, (ii) de-institutionalization of sport participation, (iii) 'multiplication' of sporting contexts, and (iv) socio-structural de-structuring of sport participation.

A systematic overview of the papers fitting in each of the chapters is given in Figure 8.

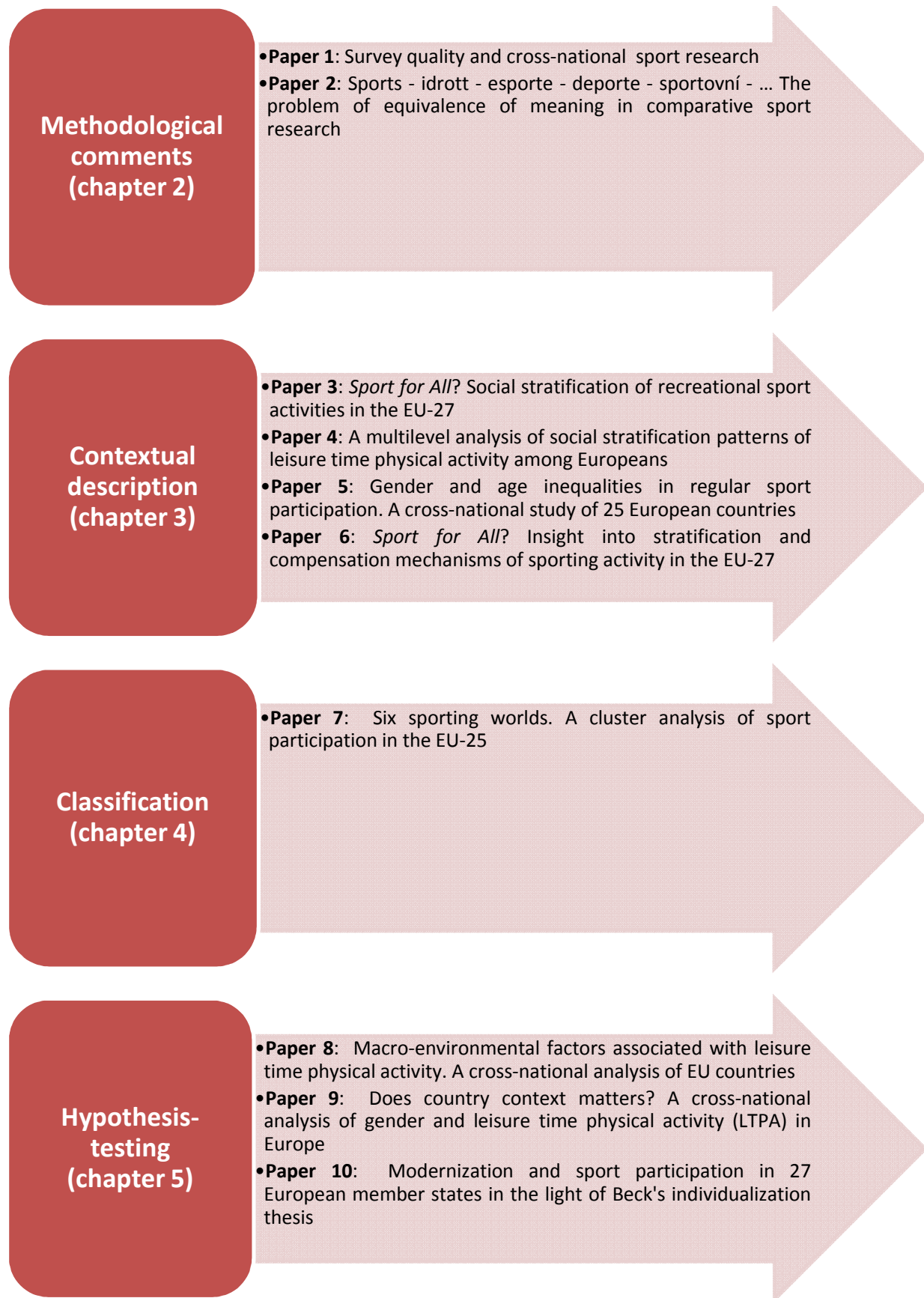


Figure 8: Overview of empirical papers

## DATA AND METHODS

In this part, we discuss the data and methods used in the empirical papers included. The *first section* elaborates on the research material used, while the *second section* describes how sport participation was operationalized in each of the empirical papers.

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### RESEARCH MATERIAL

Europe has a tradition of mapping out sporting activity based on scientific research from European member states, an approach that is aimed at enhancing a stimulating sport policy both on the European level and on the level of the individual member states. For example, at the end of the 1970s and the beginning of the 1980s, Rodgers (1977) and Claeys (1982) conducted a study of the sporting behavior of European citizens, commissioned by the European Council. Two decades later a similar European project, the COMPASS study (Gratton 1999), showed the sporting activity of seven European member states by means of comparable and adjusted questionnaires. In addition to these seven countries, the COMPASS study also included twenty other countries with available data on sporting activity; however, the figures provided did not allow for cross-national comparisons. More recently, the Dutch Mulier Instituut carried out a study, commissioned by Nike Europe (Van Bottenburg, Rijnen & Van Sterkenburg 2005), about active sporting activity in Europe. This study provided an overview of research into sporting activity in the (then still) 25 member states of the European Union. However, this research was based on secondary source material, so results from the various countries were not comparable. Apart from the initiatives mentioned above, international studies determining the prevalence of sport participation in Europe and related issues are rather scarce since efforts have in the past been hampered by the use of different sampling and measurement methods among member states (Gratton, 1999; see also Van Tuyckom & Bracke 2011). Although similarities in patterns and trends can be identified separately within each of the European countries (Van Bottenburg, Rijnen & Van Sterkenburg 2005), inconsistencies in the measures used make them unsuitable for quantitative cross-national comparisons.

In response to this problem of comparability, standard population-level public opinion surveys, Eurobarometers, are conducted on behalf of the European Commission and provide regular monitoring of social and political attitudes in the European public. Since these surveys apply standardized measurement instruments, they do allow for cross-national comparisons between the different countries<sup>6</sup>. Three recent Eurobarometer-surveys, all at the request of the European Commission, are of special interest for this dissertation since they comprise questions on sport participation. *Eurobarometer 62.0: Standard European*

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<sup>6</sup> As Eurobarometer surveys have EU funding, their primary purpose has been meeting the needs of the European Union. However, the Eurobarometers have also had substantial academic input, notably collaboration with the Inter-University Consortium for Political and Social Research (ICPSR) at the University of Michigan and the ZUMA Centre for Survey Research and Methodology at the University of Mannheim. These two institutes have also made the data available for secondary analysis, and Eurobarometer data have been widely used in academic research.

*Trend Questions and Sport* (European Commission 2004; Soufflot de Magny 2004; used in [paper 2](#), [paper 5](#) and [paper 7](#)) was carried out between October and November 2004, *Eurobarometer 64.3: Foreign Languages, Biotechnology, Organized Crime, and Health Items* (Papacostas 2005; used in [paper 4](#), [paper 6](#), [paper 8](#) and [paper 9](#)) was carried out in November 2005, and *Eurobarometer 72.3: Sport and physical activity* (European Commission, 2010; used in [paper 10](#)) in October 2009. The first Eurobarometer survey covers the population of the respective nationalities of the then 25 European Union member states, resident in each of the member states and aged fifteen years and older. Eurobarometer 64.3 (2005) has also been conducted in two countries which at that time were still preparing for accession to the European Union (Bulgaria and Romania) and in two candidate countries (Turkey and Croatia). Eurobarometer 72.3 has been conducted in all 27 European Union member states. The basis sample design applied in all states is a multi-stage, random probability one. In each country, a number of sampling points was drawn with probability proportional to population size (for a total coverage of the country) and to population density. In order to do so, the sampling points were drawn systematically from each of the 'administrative regional units', after stratification by individual unit and type of area. They consequently represent the whole territory of the countries surveyed according to the Eurostat NUTS-II as well as according to the distribution of the resident population of the respective nationalities in terms of metropolitan, urban and rural areas. In each of the selected sampling points, a starting address was drawn at random. Further addresses (i.e. every *N*th address) were selected by standard 'random route' procedures from the initial address. In each household, the respondent was drawn at random, following the 'closest birthday rule'. All interviews were conducted face-to-face in people's homes, in the appropriate national language. With respect to the data capture, CAPI (Computer Assisted Personal Interview) was used in those countries where that technique was available. For each country, a comparison between the sample and the universe was carried out. The universe description was derived from Eurostat population data or from national statistics offices. For all countries surveyed, a national weighting procedure, using marginal and intercellular weighting, was carried out based on this universe description. In all countries, gender, age, region, and size of locality were introduced in the iteration procedure. For international weighting (i.e. European Union averages), TNS Opinion & Social applies the official population figures as provided by Eurostat or national statistic offices (European Commission, 2010; Papacostas, 2005; Soufflot de Magny, 2004). The total population figures for input in this post-weighting procedure, as well as the responsible national institutes, the total number of interviews and the fieldwork dates, are listed in Table 2.



**Table 2:** Information on institutes, number of interviews, fieldwork dates and total population figures for Eurobarometer 62.0, 64.3 and 72.3

Countries	institutes	EB62.0			EB64.3			EB72.3		
		nr of interviews	fieldwork dates (all 2004)	population 15+	nr of interviews	fieldwork dates (all 2005)	population 15+	nr of interviews	fieldwork dates (all 2009)	population 15+
Austria	Österreichisches Gallup-Institute	1007	11-10 / 07-11	6679444	1002	10-11 / 02-12	6679444	1005	02-10 / 16-10	6973277
Belgium	TNS Dimarso	974	08-10 / 08-11	8598982	1000	08-11 / 06-12	8598982	1001	02-10 / 18-10	8866411
Denmark	TNS Gallup DK	1028	06-10 / 08-11	4380062	1031	08-11 / 07-12	4380062	1040	02-10 / 18-10	4503365
France	TNS Sofres	1020	14-10 / 30-10	44010619	1012	08-11 / 05-12	44010619	1000	02-10 / 18-10	4,8E+07
Finland	TNS Gallup OY	1005	10-10 / 04-11	4279286	1017	08-11 / 07-12	4279286	1017	02-10 / 19-10	4412321
Germany	TNS Infratest	1545	08-10 / 27-10	64174295	1557	08-11 / 29-11	64174295	1550	02-10 / 18-10	6,5E+07
Greece	TNS ICAP	1000	11-10 / 31-10	8674230	1000	09-11 / 04-12	8674230	1000	03-10 / 19-10	8693566
United Kingdom	TNS UK	1310	05-10 / 08-11	46371359	1321	05-11 / 04-12	47685578	1354	02-10 / 18-10	5,1E+07
Ireland	TNS MRBI	1000	08-10 / 08-11	3089775	1000	09-11 / 04-12	3089775	1008	02-10 / 18-10	3375399
Italy	TNS Abacus	1020	11-10 / 01-11	49208000	1000	07-11 - 05-12	49208000	1032	02-10 / 17-10	5,1E+07
Luxembourg	TNS ILReS	502	05-10 / 26-10	367199	501	07-11 / 06-12	367199	513	05-10 / 16-10	404907
The Netherlands	TNS NIPO	1009	07-10 / 04-11	13242328	1032	12-11 / 05-12	13242328	1007	02-10 / 18-10	1,3E+07
Portugal	TNS EUROTESTE	1000	02-10 / 01-11	8080915	1000	22-11 / 06-12	8080915	1031	02-10 / 18-10	8080915
Spain	TNS Demoscopia	1023	06-10 / 27-10	35882820	1025	05-11 / 04-12	35882820	1003	02-10 / 18-10	3,9E+07
Sweden	TNS GALLUP	1000	02-10 / 01-11	7376680	1054	08-11 / 29-11	7376680	1012	02-10 / 19-10	7723931
Cyprus	Synovate	500	10-10 / 31-10	552213	502	11-11 / 05-12	552213	503	02-10 / 17-10	651400
Czech Republic	TNS Aisa	1075	15-10 / 30-10	8571710	1029	11-11 / 04-12	8571710	1066	02-10 / 15-10	8987535
Estonia	Emor	1000	08-10 / 28-10	887094	1000	11-11 / 06-12	887094	1011	02-10 / 18-10	916000
Hungary	TNS Hungary	1014	10-10 / 28-10	8503379	1015	11-11 / 28-11	8503379	1044	02-10 / 18-10	8320614
Latvia	TNS Baltic Data House	1005	12-10 / 03-11	1394351	1000	08-11 / 04-12	1394351	1018	03-10 / 18-10	1448719
Lithuania	TNS Gallup Lithuania	1002	10-10 / 30-10	2803661	1011	13-11 / 04-12	2803661	1026	02-10 / 16-10	2849359
Malta	MISCO	500	03-10 / 22-10	322917	500	08-11 / 04-12	322917	500	02-10 / 17-10	335476
Poland	TNS OBOP	1000	16-10 / 03-11	31610437	1000	10-11 / 06-12	31610437	1000	03-10 / 19-10	3,2E+07

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<b>Slovakia</b>	TNS AISA SK	1252	02-10 / 30-10	4316438	1044	11-11 / 29-11	4316438	1006	02-10 / 18-10	4549954
<b>Slovenia</b>	RM PLUS	1000	19-10 / 05-11	1663869	1030	11-11 / 06-12	1663869	1031	02-10 / 19-10	1748308
<b>Bulgaria</b>	TNS BBSS	/	/	/	1004	07-11 / 21-11	6695512	1000	02-10 / 12-10	6584957
<b>Romania</b>	TNS CSOP	/	/	/	1002	12-11 / 04-12	18145036	1010	02-10 / 15-10	1,8E+07

An additional cross-national dataset comprising questions on sport participation, is the *ISSP 2007: Leisure time and Sport* module (used in [paper 1](#)). The International Social Survey Programme (ISSP) is a continuous program of cross-national collaboration running annual surveys on topics important for the social sciences. The ISSP is unique in a number of ways: (i) ISSP makes cross-national research a basic part of the national research agenda of each participating country; (ii) the program is based on voluntary co-operation; (iii) there are no central funds, each ISSP survey funds its own survey; and (iv) since the ISSP surveys are designed to serve as replications, ISSP combines a cross-time with a cross-national perspective. The ISSP Leisure time and Sport module is a new module, being run in 2007 for the first time and covering 34 countries across the world. We must, however, contend with differences in sampling. In all countries, probability-sampling procedures with different forms of stratification were used, an issue that will be further discussed in [paper 1](#).

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## MEASURING SPORT PARTICIPATION

With respect to the concept of ‘sport’ or ‘leisure time physical activity’, we rely on the definitions developed by the Council of Europe and the European Commission. The Council of Europe (1993) defined sport participation as *“all forms of physical activity which, through casual participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels”*. Whereas sport in the 1960 was still an activity practiced for competition by young, competent men from the higher and middle social classes, sport has nowadays become a multifaceted activity (as is clear from the above definition). Anno 2011, we speak about youth- and senior sports, about top-level, competitive and recreational sport, about organized, non-organised and differently-organised sport, about adventure sport, cosmetic sport, fitness sport, mediasport, etc. (see, among others, Scheerder 2007). Different developments have caused the current complexity of sport. Scheerder, Vanreusel & Taks (2006, p. 23) summarize these as follows: (i) a broadened perception of sport and movement, (ii) a shift from sport as exceptional behavior to even normative behavior, (iii) the increase in infrastructure regarding sport and active recreation, (iv) less social structuring with regard to sport participation, (v) the dismantlement of youth- and male image of sport participation, and (vi) the developments with regard to sport technology and sport media. All these developments have as a result that sport is largely embedded in various facets of today’s life, with as a result a larger, but also more vague meaning (Vanreusel & Scheerder 2000).

Physical activity, on the other hand, is defined by the European Commission (2008) as *“any bodily movement associated with muscular contraction that increases energy expenditure above resting levels”*. It is clear that this large definition of physical activity encompasses several contexts, among which physical activity in leisure time (sport participation, the focus of this dissertation), physical activity at work (for instance, manual labor), physical activity from household activities (for instance, cleaning, gardening, do it yourself work), physical activity to move from one place to another (for instance, walking or cycling to the shop, to work), etc. In other words, sport participation is only one of the means to be physically active.

For the empirical papers, we used secondary data (see below). Whether a dive in the swimming pool on holidays, a family walk in the forest, or a play of jeu de boules is perceived by the respondents as 'sport', is not known. The only thing that is known, is the question that was asked. *Eurobarometer 62.0: Standard European Trend Questions and Sport* (European Commission 2004; Soufflot de Magny 2004) and *Eurobarometer 72.3: Sport and physical activity* (European Commission 2010) assessed sport participation by means of the question 'How often do you exercise or play sport?' Answer categories in Eurobarometer 62.0 were: (i) 3 times a week or more, (ii) 1 to 2 times a week, (iii) 1 to 3 times a month, (iv) less often, (v) never; in Eurobarometer 72.3: (i) 5 times a week or more, (ii) 3 to 4 times a week, (iii) 1 to 2 times a week, (iv) 1 to 3 times a month, (v) less often, (vi) never. An additional question in the 2010 Eurobarometer survey was "And how often do you engage in a physical activity outside sport such as cycling or walking from a place to another, dancing, gardening, ...?" *Eurobarometer 64.3: Foreign Languages, Biotechnology, Organized Crime, and Health Items* (Papacostas 2005) assessed sport participation by means of the question 'In the last 7 days, how much physical activity did you get from recreation, sport and leisure time activities?' Answer categories were (i) a lot, (ii) some, (iii) little, (iv) none. It is clear that, by the way of asking in the 2005 and 2010 Eurobarometer survey, sport participation is clearly separate from other forms of physical activity, among which compulsory activities (for instance, during work) or activities characterized by a utilitarian aim (for instance, walking to work, cycling to the shop, etc.). In addition, it is not about passive sport consumption (as watching a football game). The concept that was used in the empirical papers (sport or leisure time physical activity) is depending on the type of question that was asked. Did this question comprise the term 'sport' (as in "How often do you exercise or play sport?"), then sport was used. Did this question comprise the term 'physical activity' (as in "In the last 7 days, how much physical activity did you get from recreation, sport and leisure-time activities?"), then leisure-time physical activity was used. Again, how the respondents perceived sport or leisure-time physical activity, is not known. In that sense, the following definition of Renson (1996, p. 277) is very useful here: "Sport is that what people do when they claim that they do sport".

In all empirical papers, answer categories have been recoded for analytical purposes. Respondents indicating being totally inactive in their leisure time were defined as non-participants (and all others as participants) in **paper 3**, **paper 4**, **paper 6**, **paper 9** and **paper 10**. In **paper 5** and **paper 8**, respondents indicating being totally inactive or hardly active in their leisure time were defined as non-participants (and all others as participants). Finally, in **paper 7**, three categories were constructed out of the original answer categories (i.e. non- to little actives, actives, and very actives).

In sum, in all papers from **chapter 3** and **chapter 5**, sport participation has been recoded to a binary variable. As this situation poses problems for the assumptions of Ordinary Least Squares (OLS) regression (i.e. normally distributed error variances), binary logistic regression has been used. Binary logistic regression estimates the probability of event occurrence, i.e. sport participation (Menard 2002). Only odds ratios are presented in the papers because the logit coefficients are only intuitively meaningful. An odds ratio can be defined as the ratio of the odds of an event occurring in one group to the odds of it occurring in another group. An odds ratio of

one indicates that the event (here: sport participation) is equally likely to happen in both categories. An odds ratio above one indicates that the event is more likely to happen in that category compared to the reference category. An odds ratio of less than one indicates that the event is less likely to happen in that category compared to the reference category. Moreover, in **paper 4**, **paper 9** and **paper 10**, binary logistic regression has been applied within a multilevel analytical framework. In **paper 3** and **paper 6**, analyses were limited to bivariate estimations by means of crosstabulations. For a more in-depth discussion of the analytical method used, as well as for the independent variables included (and their operationalizations), we refer to the respective papers.

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## CHAPTER 2: METHODOLOGICAL COMMENTS

### PAPER 1: SURVEY QUALITY AND CROSS-NATIONAL SPORT RESEARCH. A CASE STUDY OF THE 2007 ISSP SURVEY

**A slightly different version of this paper is forthcoming in *European Journal of Sport Science* (Van Tuyckom & Bracke 2011).**

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#### INTRODUCTION

Thanks to the publicly available datasets, such as the Eurobarometer, the International Social Survey Programme (ISSP), and other international surveys, for the past fifteen years there has been an increase in the number of studies comparing countries, regions and/or cultures on sport-related issues and sport participation in particular (see Hartmann-Tews 2006; Hovemann & Wicker 2009; Van Bottenburg, Rijnen & Van Sterkenburg 2005; Van Tuyckom & Scheerder 2010; Van Tuyckom, Scheerder & Bracke 2010). Stimulated also by the phenomena of globalization, sport researchers increasingly find themselves initiated or invited to collaborate in multinational comparative projects. Moreover, globalization has also led to the export of Western technologies and practices to less developed countries, yielding a spread of survey research around the globe. As a consequence, we expect to enjoy the results of even more international sport-related surveys in the near future.

However, in cross-national research, the quality of the conclusions depends on the quality of each of the separate national studies. If any of these are flawed, it is possible that both similarities and differences between countries are nothing more than methodological artifacts (Blasius & Thiessen 2006). There is always the danger that the cross-national variations that the researcher attempts to model are due to various forms of error and consequently do not reflect real differences between populations. This risks the development of substantive theories to explain what is essentially an error in the dataset. These errors might be purely random or systematic (Braun 2003). The presence of random errors does usually not prevent researchers from obtaining correct estimates of what they are interested in. Systematic errors, on the other hand, lead to biased estimates that are either larger or smaller than the true population values. Groves (1989: 6) consequently defines survey errors as “*deviations of obtained survey results from those that are true reflections of the*

*population*”, or any survey results that do not match with the theorized, presumably known results from the larger target population. They are an issue within all surveys, both in- and (particularly) outside the traditional (Western) core.

Groves (1987, 1989; Groves & Cooper 1998) distinguishes four sources of survey quality: sampling error, coverage error, non-response error, and measurement error. Sampling error results from using a sample instead of surveying the entire population. Coverage errors result from the failure to give every unit of the population a chance of selection into the sample. Non-response error results from the failure to collect data on all members of the sample and occurs when selected respondents cannot be located, reached or refuse to participate (Couper & de Leeuw 2003). Finally, measurement errors arise from the influence of the interviewer, the weakness of survey questions, failures of the respondent to give appropriate answers to the questions, and effects of the data collection mode on survey answers. Each of these type of errors can affect the collection of any information in surveys, from purely demographic information to attitudinal data.

Although already widely tackled, in - among others - the ZUMA Special Band 11 on *Methodological aspects in cross-national research* (Hoffmeyer-Zlotnik & Harkness 2005) and Band 12 on *Conducting cross-national and cross-cultural surveys* (Harkness 2006), unfortunately, the issue of survey quality has been seriously underdeveloped in the sport research literature with the danger that researchers possibly draw false conclusions. Through a discussion of several components of survey quality by means of the 2007 ISSP survey on leisure time and sport, the present article wants to address this lacuna.

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#### THE 2007 INTERNATIONAL SOCIAL SURVEY PROGRAM (ISSP) SURVEY ON LEISURE TIME AND SPORTS

The International Social Survey Programme (ISSP) is a continuous program of cross-national collaboration running annual surveys on topics important for the social sciences. The ISSP is unique in a number of ways: (i) ISSP makes cross-national research a basic part of the national research agenda of each participating country; (ii) the program is based on voluntary co-operation; (iii) there are no central funds, each ISSP survey funds its own survey; and (iv) since the ISSP surveys are designed to serve as replications, ISSP combines a cross-time with a cross-national perspective. The ISSP module on leisure time and sport is a new one, being run in 2007 for the first time and dealing with leisure time activities, especially with sport and game activities, with the subjective meaning of time and leisure, and its relation to work and other spheres of life, with sociological aspects of sports and social determinants and consequences of leisure. It covers 34 countries across the world (Scholz & Heller 2009).

Although they are part of the same cross-national project, the country-specific datasets included in the 2007 ISSP survey seem to vary considerably in their response rates, coverage, sample design and mode of data collection. Smith (2007) distinguishes four main factors why different survey methods are used in different countries. First, there are cross-national differences in legislations regarding survey practice: government surveys might be mandatory in some countries but not in others, there might be legal restrictions on using

certain records for sampling, there might be specific privacy regulations, etc. Second, there are cross-national differences in study design: survey research institutions might have different kinds of sampling frames, traditions of how to pick up samples, technical expertise, etc. Third, the methods of recruiting and training interviewers are different across countries: they might have different experience, demographic composition, attitudes and behaviors, etc. or might be instructed differently. Finally, also the general survey climate is different: there are cross-national differences in the general social values relating to surveys in particular or survey-related norms such as cooperativeness, privacy expectations, trust in others, etc. Designing and administering any survey consequently often implies many compromises depending on the available resources.

Table 1 shows some key aspects of sample design, mode, sampling frame, response rates, and availability of weights in the participating 2007 ISSP country files. As can be seen, there is a great deal of variation. In terms of response, at one extreme, we have France with self-completion by mail mode of data collection and a response rate of 21,21%. At the other extreme, we have Chile with a reported rate of 90,23% and an unknown (possibly quota) method of sampling. Although for example the European Social Survey (ESS) strictly forbids both substitution and quota sampling (GESIS 2010), other survey programs like the ISSP continue to make use of these methods. The 'typical' participating country, however, uses probability sampling with a response rate of around 55% and face-2-face (f2f) administration. This wide variation in sampling methods, modes of data collection, and response rates suggests that there will be a great deal of scope in the 2007 ISSP for various forms of survey error.

**Table 1:** Sampling and data collection methods, response rates, and sample sizes of the 2007 ISSP data on leisure time and sport

Country	sampling frame	nonprobability (quota/substitution)	data collection mode	weights supplied	response rate (%)	achieved sample
<b>Austria (A)</b>	households		f2f	yes	60,68	1020
<b>Argentina (ARG)</b>	areas	yes	f2f	yes	39,49	1657
<b>Australia (AUS)</b>	named individuals (target persons)		self-completion by mail		43,63	2769
<b>Bulgaria(BG)</b>	addresses		f2f	yes	60,31	1000
<b>Switzerland (CH)</b>	households		f2f	yes	45,41	1003
<b>Chile (CL)</b>	other	yes	f2f	yes	90,23	1505
<b>Cyprus (CY)</b>	households	yes	f2f		78,49	1000
<b>Czech Republic (CZ)</b>	households		f2f	yes	52,99	1222
<b>Germany West</b>	named individuals (target persons)	yes	f2f, self-completion with interview involvement		39,46	1174
<b>Germany East</b>	named individuals (target persons)	yes	f2f, self-completion with interview involvement		40,28	543
<b>Dominican Republic (DO)</b>	areas		f2f		76,98	2164
<b>France (F)</b>	addresses and households		self-completion by mail	yes	21,21	2061
<b>Finland (FIN)</b>	named individuals (target persons)		self-completion by mail	yes	54,36	1354
<b>Flanders (FL)</b>	named individuals (target persons)		f2f, self-completion with interview involvement	yes	55,30	1257
<b>Great Britain (GB)</b>	addresses		f2f, self-completion with interview involvement	yes	51,81	1028
<b>Hungary (H)</b>	households		f2f	yes	65,92	1027
<b>Croatia (HR)</b>	areas		f2f		39,88	1200
<b>Israel (IL)</b>	addresses		f2f		60,28	1038

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<b>Ireland (IRL)</b>	addresses		f2f	yes	65,25	2049
<b>Japan (J)</b>	named individuals (target persons)		self-completion with interview involvement		73,84	1253
<b>Latvia (LV)</b>	households		f2f		59,99	1069
<b>Mexico (MEX)</b>	areas		f2f		80,35	1607
<b>Norway (N)</b>	named individuals (target persons)		self-completion by mail		44,03	1143
<b>New Zealand (NZ)</b>	named individuals (target persons)		self-completion by mail		48,14	996
<b>Poland (PL)</b>	named individuals (target persons)		f2f	yes	58,06	1293
<b>South Korea (ROK)</b>	households		f2f		58,15	1431
<b>Uruguay (ROU)</b>	areas		f2f	yes	74,80	1437
<b>The Philippines (RP)</b>	areas		f2f	yes	40,66	1200
<b>Russia (RUS)</b>	households	yes	self-completion with interview involvement	yes	30,52	2005
<b>Sweden (S)</b>	named individuals (target persons)		self-completion by mail		65,98	1309
<b>Slovak Republic (SK)</b>	areas	yes	f2f	yes	65,21	1138
<b>Slovenia (SLO)</b>	named individuals (target persons)		f2f		70,88	1003
<b>Taiwan (TW)</b>	named individuals (target persons)		f2f	yes	46,92	2147
<b>United States of America (USA)</b>	named individuals (target persons)		f2f	yes	83,07	1536
<b>South Africa (ZA)</b>	households		f2f	yes	84,40	2905

**Table 2:** Discrepancies (percentage points) between 2007 ISSP age profiles and Census data

country	discrepancies for age group			
	total deviation of all age groups	20-34	35-54	55-74
AR-Argentina	50,0	15,4	22,2	12,3
AU-Australia	35,7	2,1	15,1	18,6
AT-Austria	32,5	10,6	17,4	4,6
FLA-Flanders	32,0	7,3	14,4	12,8
BG-Bulgaria	27,5	2,3	13,0	12,2
CL-Chile	36,2	6,6	18,3	11,5
TW-Taiwan	29,5	7,9	11,2	10,2
HR-Croatia	29,5	10,4	9,2	9,9
CY-Cyprus	30,7	9,2	14,3	7,3
CZ-Czech Republic	33,4	5,8	9,2	18,5
DO-Dominican Republic	44,1	24,1	16,3	3,7
FI-Finland	31,0	2,4	11,0	17,6
FR-France	35,9	4,6	14,6	16,8
DE-Germany	28,1	3,4	8,8	15,8
HU-Hungary	28,1	7,5	10,8	9,8
IE-Ireland	32,8	8,1	15,7	9,1
IL-Israel	40,9	19,9	13,2	7,8
JP-Japan	29,6	2,4	14,0	13,2
KR-South Korea	28,2	7,2	15,0	5,9
LV-Latvia	27,8	3,6	11,1	13,1
MX-Mexico	42,3	15,9	19,2	7,3
NZ-New Zealand	36,3	4,2	9,1	22,9
NO-Norway	33,3	5,0	16,7	11,6
PH-Philippines	47,2	13,7	24,2	9,3
PL-Poland	28,3	2,4	11,3	14,6
RU-Russia	27,6	7,8	6,5	13,3
SK-Slovak Republic	30,8	3,1	12,2	15,5
SI-Slovenia	26,5	8,0	9,5	9,0

<b>ZA-South Africa</b>	42,6	13,3	20,9	8,4
<b>SE-Sweden</b>	32,2	4,1	13,1	15,0
<b>CH-Switzerland</b>	30,7	1,5	16,0	13,2
<b>GB-Great Britain</b>	33,1	8,1	13,5	11,5
<b>US-United States</b>	34,6	6,1	14,7	13,8
<b>UY-Uruguay</b>	36,8	7,6	16,4	12,8

Source: US Census Bureau, Population Division. International database. Retrieved April 8<sup>th</sup> 2010, from <http://www.census.gov/ipc/www/idb>

One of the methods for checking on survey error proposed by Billiet (2007) involves comparing the demographic profile of the respondents (i.e. sample) against census figures (i.e. population distributions). For the 2007 ISSP survey, a check that can quickly be carried out is a comparison of the age profiles in the achieved samples with those of the population as a whole (derived from official sources). The results of this are shown in Table 2. As can be seen, some of the countries such as Argentina, Dominican Republic, Mexico, and the Philippines using areas as sampling frame have very high discrepancies between their overall sample age profiles and the official data. Moreover, when we look at countries such as Australia, France, Finland, New-Zealand, Sweden using a self-completion mail-back mode of administration, we see that there are very high discrepancies between their sample age profiles and the official data in the category of older adults. Besides, many of the above countries also have rather low response rates. However, as Groves (2006) points out, there is no simple relationship between low response rate and size of survey error. As can be seen in Table 2, the largest bias occurs in countries with high response rates, such as the Dominican Republic, Mexico, and South-Africa.

Some of the survey errors can easily be corrected by creating the appropriate weights ex post (Gesis 2010). However, as shown in Table 1, not all countries include such weights in the data. Moreover, it is highly probable that in addition to the biases on observed variables for which we can weight (such as age), there are various unobserved selection processes that a simple weighting by population totals will not correct for. For example, if ethnicity (majority/minority status) is a main driver of both response to the survey and the conception of sport, and if ethnicity is uncorrelated with age, then weighting by age is not going to do anything to compensate for the selection biases resulting from (unmeasured) ethnicity. Moreover, reliable official data that can be used for weighting are often not available. For example, ethnicity is probably as a substantive matter correlated in the way suggested, but in the great majority of countries, reliable ethnic origin data is unobtainable.

Although we should note that the ISSP procedures were tightened up in recent years, the high variety of sampling methods, modes of administration and response rates leaves plenty of scope for the creation of artificial results. As a consequence, detailed modeling needs to be carried out (Heath, Martin & Spreckelsen 2009). Therefore, in the following section we consider whether the various errors that we have identified impinge on the substantive outcomes. We use the 2007 ISSP measure of sport participation, asked by means of

the question 'How often do you take part in physical activities such as sports, going to the gym, going for a walk?' Answer categories were divided between daily, several times a week, several times a month, several times a year or less often, and never. For exploratory purposes, these categories were dichotomized, with respondents answering 'never' defined as physically inactive in their leisure time, all others as active. We use a two-level model with controls for age, gender and education on level-one and GDP at purchasing power parity (ppp) per capita on level-two (as they are known determinants of sport participation, see among others Van Tuyckom & Scheerder 2010) and consequently introduce interaction terms between the individual-level variables (sex, age and education) and our measures of survey errors in the 2007 ISSP - features for each country for: (i) age discrepancies between the survey data and official statistics; (ii) response rates; (iii) whether mail back, self completion, or f2f interview was used - to test whether they affect the individual-level relationships. Unfortunately, including a variable indicating non-probability sampling was not possible since this applied only to very few of the countries included in the analysis.

Four different models are estimated (model 0 = only individual-level variables, model 1 = interactions between sex and survey errors, model 2 = interactions between age and survey errors, model 3 = interactions between education and survey errors). The results, which can be seen in Table 3 show several significant interaction effects between the individual-level variables and the measures of bias, response rate and survey mode (see grey boxes). Age bias appears to be particularly problematic for the association of sport participation with sex and age, while response rates appear to be particularly problematic for sex and education. Use of mail back seems to be problematic for sex and age, and self-completion with interviewer for education. With a rather small number of countries and some degree of correlation between the methodological predictors, we should not attach *too* much weight to the specific differences. Moreover, the individual level and country level effects do not change drastically after controlling for the measures of bias, response rate and survey mode. Nevertheless, in further research, we need to check whether individual-level effects stay constant and whether methodological effects persist once controlled for further substantive individual level and country level factors (such as policy indicators). In summary, the results in Table 3 do suggest that a lack of methodological rigor might potentially bias the results (Couper 2000; Groves, Cialdini & Couper 1992; Groves & Couper 1998; Heath, Martin & Spreckelson 2009).



**Table 3:** Multilevel results relating age bias, response rate and mode of data collection to individual differences in sports participation (based on the 2007 ISSP survey)

	Model 0	Model 1a	Model 1b	Model 1c	Model 2a	Model 2b	Model 2c	Model 3a	Model 3b	Model 3c
	coeff (SE)	coeff (SE)	coeff (SE)	coeff (SE)	coeff (SE)	coeff (SE)	coeff (SE)	coeff (SE)	coeff (SE)	coeff (SE)
<b>Constant</b>	1,412*** (0,112)	1,552*** (0,094)	1,564*** (0,097)	1,581*** (0,102)	1,556*** (0,095)	1,555*** (0,095)	1,554*** (0,094)	1,557*** (0,095)	1,557*** (0,095)	1,554*** (0,094)
<b>Individual level variables and interaction terms</b>										
Sex	-0,309*** (0,064)	-0,346*** (0,064)	-0,346*** (0,062)	-0,472*** (0,089)	-0,350*** (0,065)	-0,351*** (0,065)	-0,351*** (0,065)	-0,351*** (0,065)	-0,350*** (0,064)	-0,349*** (0,065)
Sex * age bias		-0,014* (0,007)								
Sex * response rate			-0,008* (0,004)							
Sex * mail back (vs. f2f)				0,825*** (0,108)						
Sex * self-completion with interviewer (vs. f2f)				0,203 (0,116)						
Age	-0,022*** (0,002)	-0,024*** (0,002)	-0,025*** (0,002)	-0,026*** (0,001)	-0,025*** (0,001)	-0,024*** (0,002)	-0,026*** (0,002)	-0,024*** (0,002)	-0,024*** (0,002)	-0,024*** (0,002)
Age * age bias					4,93E-04* (2,28E-04)					
Age * response rate						4,50E-05 (8,40E-05)				
Age * mail back (vs. f2f)							0,014*** (0,002)			
Age * self-completion with interviewer (vs. f2f)							-0,002 (0,005)			
Education	0,007**	0,006*	0,006*	0,006*	0,006*	0,006*	0,006**	0,006*	0,006*	0,011**

Chapter 2: Methodological comments

	(0,002)	(0,002)	(0,002)	(0,002)	(0,002)	(0,002)	(0,002)	(0,002)	(0,002)	(0,003)
Education * age bias								1,80E-05 (1,00E-05)		
Education * response rate									3,93E-04* (1,56E-04)	
Education * mail back (vs. f2f)										-0,015 (0,007)
Education * self-completion with interviewer (vs. f2f)										-0,013* (0,006)
<b>Country level variable</b>										
GDP per capita (ppp)		4,90E-05*** (1,00E-05)	5,20E-05*** (1,00E-05)	5,00E-05*** (1,00E-05)	5,10E-05*** (1,00E-05)	5,10E-05*** (1,00E-05)	5,10E-05*** (1,00E-05)	5,10E-05*** (1,00E-05)	5,10E-05*** (9,00E-06)	4,80E-05*** (9,00E-06)
Age bias		-0,025 (0,016)	-0,006 (0,015)	-0,030 (0,018)	-0,005 (0,015)	-0,006 (0,015)	-0,030 (0,018)	-0,006 (0,015)	-0,004 (0,015)	-0,030 (0,018)
Response rate		-0,005 (0,006)	0,006 (0,005)	-0,000 (0,009)	-0,005 (0,006)	-0,006 (0,006)	-0,000 (0,009)	-0,005 (0,005)	-0,006 (0,006)	-0,000 (0,009)
Mail back (vs. f2f)		1,651*** (0,262)	1,648*** (0,262)	1,648*** (0,281)	1,639*** (0,265)	1,662*** (0,263)	2,413*** (0,242)	1,656*** (0,262)	1,653*** (0,262)	2,478*** (0,253)
Self-completion with interviewer (vs. f2f)		0,204 (0,237)	0,201 (0,237)	0,073 (0,397)	0,218 (0,240)	0,206 (0,238)	0,475 (0,423)	0,214 (0,236)	0,210 (0,238)	0,497 (0,418)
<b>Observations</b>	49717									
<b>Number of countries</b>	34									

Note: \* p ≤ .05; \*\* p ≤ .01; \*\*\* p ≤ .001

## CONCLUSION

A major problem in cross-national research is verifying whether the observed variation in outcomes represent 'real' differences or are merely/partly methodological artifacts. In this article, it has become clear that the 2007 ISSP survey on leisure time and sports does not encompass a standardized product throughout the different countries in terms of survey conduct. Several authors have suggested rules for conducting cross-national survey research (see Heath, Fisher & Smith 2005). And indeed, it is tempting to plead for the same gold standard of survey methods in different countries, i.e. complete coverage, high response rates, known and appropriate precision of sample estimates, minimal measurement error, standardized questionnaires administered by trained interviewers, etc. However, the ISSP is a survey with little or no central funding and consequently no central, cross-national methodology team offering advice and support to country teams on matters of survey quality with as a result large between-country variations in sampling method, sample size, data collection method, etc. ISSP-studies are run as collaborations between equal partners, each of whom must raise their own national funding. Studies with a single central funding source, such as the European Social Survey and the Eurobarometer are in a much stronger position to exert control over methodological quality (Lynn 2003). We should, however, mention that the ISSP includes regular reports monitoring the particular module (see Klein & Harkness 2003; Park & Jowell 1997; Scholz & Heller 2009). Unfortunately, the results do not always seem to feed back into the survey process.

Our case study of the 2007 ISSP survey on leisure time and sport has shown that the individual and country level effects do not change drastically after controlling for the measures of bias, response rate and survey mode. Nevertheless, the significant interaction effects suggest that the variation in sampling methods, modes of data collection and response rates leaves room for various forms of survey error with the potential to generate misleading or biased 'findings'. Ignoring these methodological problems related to survey error will affect the validity of cross-national research. It is, however, less clear what can be done to survey error? Heath, Martin & Spreckelsen (2009) give some possibilities. One which is already mentioned, is to use weighting. However, it is overoptimistic to assume that weighting can solve the problem so it might give a false sense of security. Another option could be to exclude countries that use non-standard procedures such as substitution. However, this risks to restrict the countries under examination to a homogeneous set of relatively wealthy westernized countries, reducing the theoretical and substantive interest of the findings. Nevertheless, it is probably always good to test whether the conclusions are sensitive to the exclusion of countries with rather poor data quality. In addition, Heath, Martin & Spreckelsen (2009) recommend close(r) inspection of outliers and to avoid post hoc 'explanations' for these outliers since one can never be sure that an outlier is due to a 'real' difference rather than a methodological artifact. Our suggestion is to include measures of methodological survey properties in any substantive analysis, as done in Table 3. If this would become standard practice, it could also build up a valuable stock of knowledge about the role of methodological variations in cross-national research. However, in some cases, where a particular mode of administration has been used by only one country, an identification problem might pop up making it impossible to distinguish a 'real' country effect from

an artificial one. Nevertheless, further research into the impact of various methodological factors related to survey quality is recommended.

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PAPER 2: SPORTS - IDROTT - ESPORTE - DEPORTE - SPORTOVNÍ - ... THE PROBLEM OF EQUIVALENCE OF MEANING IN COMPARATIVE SPORT RESEARCH

**A slightly different version of this paper is published in *European Journal for Sport and Society* (Van Tuyckom, Bracke & Scheerder 2011).**

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## INTRODUCTION

Funding bodies, policy imperatives, professional associations and publication outlets<sup>1</sup> all increasingly favour comparative research. Moreover, thanks to the publicly available datasets, such as the Eurobarometer, the ISSP, and other international surveys, for the past fifteen years there has been an increase in the number of studies comparing countries, regions and cultures on sport-related dimensions, and sport participation in particular (see for example Hartmann-Tews 2006; Hovemann & Wicker 2009; Van Bottenburg, Rijnen & Van Sterkenburg 2005; Van Tuyckom & Jöreskog 2010; Van Tuyckom & Scheerder 2008, 2010a, 2010b). Stimulated also by the phenomena of globalization, and the accompanying social and cultural developments, sport researchers increasingly find themselves initiating or invited to collaborate in multinational comparative projects<sup>2</sup>. In addition, globalization has also led to the export of Western technologies and practices to less developed countries, yielding a spread of survey research methodologies around the globe. As a consequence, we expect to enjoy the results of even more cross-national sport participation surveys in the near future. However, we should be aware that sport is always embedded in a broader cultural context, characterized by particular beliefs, norms and values (e.g., those associated with social class, gender, disability or ethnicity). This is raising the question of cross-cultural comparability of sport participation or related survey data obtained across populations. Cross-national research rests on the assumption of equivalence of meaning, that is, comparisons between countries are only worthwhile when different countries measure things in the same way. Unfortunately, this issue has been seriously underdeveloped in the sport research literature with the consequence that too often researchers find themselves 'reinventing the wheel' or worse, repeating the mistakes of others. In the present article, we want to address this lacuna by (i) discussing the problem of equivalence of meaning (in case: construct equivalence) in the context of comparative sport research; and by (ii) empirically illustrating the problems and caveats related to construct equivalence using data from the 2004 Eurobarometer survey on sport.

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<sup>1</sup> See the journal *Cross-Cultural Research*, ZUMA Special Band 11 on Methodological aspects in cross-national research (2005) and ZUMA Special Band 12 on Conducting cross-national and cross-cultural surveys (2006), among others.

<sup>2</sup> See recently established expert group MEASURE, which stands for *Meeting for European Sport Participation and Sport Culture Research*.

## EQUIVALENCE OF MEANING IN COMPARATIVE SPORT RESEARCH

All cross-national studies have, independently from their aims or type of data, one inevitable condition, namely establishing equivalence both in the theoretical concepts that are used and the operational indicators of those concepts as they are applied in multiple contexts (Blasius & Thiessen 2006; Landman 2008; Mayer 1989; Sanders 1994; Van de Vijver & Tanzer 2004). This is, however, easier said than done as the following examples in the area of sport will illustrate.

First, the concept of sport, or sport participation in particular, may mean different things across different contexts. The question 'How often do you exercise or play sport?' in the UK might have a different connotation than the question 'Wie oft treiben Sie Sport oder trainieren Sie?' in Germany. In addition, the German concept of 'Verein' can hardly be translated by the English 'sports club' or the Spanish 'asociación'. In Germany this concept contains overtones of a solidarity committee, in Spain it is more of a service organisation, in Italy part of the political arena, etc. (Heinemann 1999). The connotations which are associated with the term in the respective countries get lost in translation. Different understandings of a concept can therefore lead to different measures being developed for that concept (see Adcock & Collier 2001). Mayer (1989: 57) argues in this regard that *"the contextual relativity of the meaning or the measures of indicators constitutes the most serious impediment to the cross-contextual validity of empirically testable explanatory theory"*.

The problem of equivalence also applies to the choice of comparable groups. With cross-national comparisons one should always take into account whether and to what extent not differences between groups can be recorded, but to what extent different groups can be compared to each other. Scheuch (1968: 187) for example discussed whether farmers in the US can be compared to those in Europe and concludes: *"...If one compares responses for both groups, much of what is done actually shows that similar labels refer to different groups, rather than demonstrating cross-cultural differences between the responses of otherwise comparable groups"*. Also in the field of sport, one could ask whether for instance recreational walking groups are comparable across countries (do these comprise Nordic walking, hiking, dog walking, etc.?).

Equivalence also applies to the analysis of social change in a country, that is: survey questions and items should remain relatively constant over time. However, social change itself can make questions irrelevant and the meaning of particular questions can change. Also the understanding of sport has expanded over time. Whereas traditionally it was a club-related activity, it is nowadays an activity connected with issues of lifestyle, subculture, technology, etc.

As the previous examples have illustrated, it is not that easy to specify concepts and indicators that have shared meanings to allow valid comparisons. When studying equivalence of meaning across countries, several issues are relevant. First, and perhaps most fundamentally, there simply may be no common concepts to measure (e.g. the concept of God is specific to certain religious traditions, old popular sports - such as darts or 'jeu de boules' - are specific to certain regions or countries). Second, there might be common concepts whose

interpretation varies in different contexts (e.g. the concept of a sports club in various countries). Third, poor translation may introduce errors. In the following, these three issues are dealt with in reverse order.

Translation of questions into different languages is inevitably fraught with problems (Braun & Harkness 2005) and there are various surveys where translation has not been given enough attention. Sinnott (1998) for example, displayed how a Eurobarometer question on party identification had a systematically different meaning if it was derived from the English or the French language version of the original questionnaire. Whereas the English version of the survey asked 'Are you close to a political party?', the French version asked 'Are you closer to one party than the others?', with more individuals answering 'yes' to the relative French version and 'no' to the absolute English version. The standard method of improving the quality of translation is to use 'back translation', the translation of a question from one language into another and then back again by a separate translator. By comparing the original with the doubly translated question it should be clear whether there are any problems. However, several authors (Harkness 1999; Warwick & Osherson 1973) have argued that back-translation is rather a method of achieving linguistic equivalence without taking contextual factors into account.

Translation problems are, however, no major sources of lack of comparability as they can mostly be solved. More difficult problems arise when the same appropriately translated question is differently interpreted. For example, the sport benefits battery of the 2004 Eurobarometer, which will be discussed further on in this article, includes items such as 'to help disadvantaged people to integrate into society' or 'to meet people from other cultures'. These questions can be asked in all participating countries with the same wording, but will they be interpreted in the same way? The definition of 'disadvantaged people' or 'other cultures' will probably differ widely across countries. The item has been de-contextualised in a way that permits standardization of wording (and accurate translation) but perhaps lacks equivalence of meaning. One simple but expensive solution to this problem of contextualization is including an open-ended follow-up question asking respondents to name those groups they were thinking of when answering the question (Schumann & Presser 1981). Alternative suggestions (already mentioned in 1967 by Przeworski & Teune but still relevant) include measuring the same concept with different scales in different countries. This way, each scale includes a common core of questions as well as some culturally-specific ones. Such an approach might be particularly useful when investigating relationships between variables in differing countries.

The export of a measuring instrument that was appropriate in the country of origin might thus give an illusory appearance of comparability. A straightforward example is that of educational level as correlate of sport participation. Number of years of completed education may be an excellent measure in some countries (e.g. the US) where it is isomorphic with the educational system, but less appropriate in European systems where measures of education focus more on the achieved qualifications. American and European respondents with a similar number of years of completed education might thus have had very different educational experiences. The most severe difficulties in equivalence, however, occur when the concept that a question is trying to tap into is less appropriate, or even non-existent, in some contexts (e.g. example of old local popular sports such as



darts or 'jeu de boules'). However, limiting a survey to concepts that can be measured in all countries could result in a set of questions that focus on common features of belief systems instead of distinctive features that have no cross-national equivalents.

Basically, every comparison of values and norms between countries is, as highlighted by Hofstede (1998), like a comparison between apples and oranges. Popular wisdom cautions against comparing apples with oranges, but what do we mean by 'comparing'? Apples and oranges come both under the general category of 'fruits' and can thus be compared on many criteria such as price, colour, vitamin content, etc. Comparing apples with oranges is thus okay as long as we possess a 'fruitology', a theory of fruits. This means that it is important to find a common language for those factors that can be compared. Therefore the researcher must always clearly specify in which respect a concept is comparable.

In the following part, the problems and caveats related to construct equivalence will be empirically illustrated using data from the 2004 Eurobarometer survey on sport.

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#### EUROBAROMETER-DATA ON BENEFITS OF SPORT PARTICIPATION

Researching 'equivalence of meaning' is inevitably fraught with the problem that it has been defined and used in several ways (Mohler & Johnson 2010). In addition, Mohler & Johnson (2010) argue that equivalence is actually an ideal concept with a normative character, assuming the existence of complete or 'full equivalence'. They propose to use the term 'comparability' instead of 'equivalence'. Our theoretical framework, however, is inspired by the work of Van de Vijver & Tanzer (2004). These authors distinguish between three hierarchically linked levels of equivalence: construct equivalence, measurement unit equivalence and scalar or full score equivalence.

Construct equivalence assumes that the same underlying construct is measured for all groups or contexts under scrutiny (in our case European countries). It is also defined as *configural invariance*. Measurement unit equivalence (or *metric invariance*) assumes that the 'measurement unit' is equivalent across countries or contexts. A good example is the different ways of measuring temperature (Kelvin or Celcius). These scales have a different origin, but a comparable 'measurement unit'. When the difference in origin is known, comparisons between both are perfectly possible. Scalar or full equivalence (or *scalar invariance*) implies measurement unit equivalence as well as the additional condition of comparable origins.

The difference between the above levels of equivalence is important in cross-cultural research; the desired level of equivalence is dependent on the aim of the study (Billiet & Welkenhuysen-Gybels 2004). If the aim is to calculate correlations or regression coefficients, than metric invariance suffices. When, on the other hand, one wants to compare 'latent means' across groups (or countries), than is also scalar invariance required (Missinne 2011).

Configural invariance (or construct equivalence) is a necessary condition to evaluate the quality of cross-cultural or cross-national data (Heath, Martin & Spreckelsen 2009). Therefore, the aim of this study is to

empirically scrutinize the cross-national structure of relations between the different indicators of the sports benefits battery in the 2004 Eurobarometer on sport (European Commission 2004; Soufflot de Magny 2004). The Eurobarometer survey is a standard population-level public opinion survey conducted on behalf of the European Commission and providing regular monitoring of social and political attitudes in the European public. In all - in our case 25 - participating countries, multi-stage, random probability samples have been applied, allowing representative samples not only by age and gender but also reflecting the special distribution of the inhabitants.

To evaluate construct equivalence, several methods have been proposed (Van de Vijver & Leung 1997a; 1997b; Welkenhuysen-Gybels & Van de Vijver 2001), among which exploratory factor analysis, structural equation models, multidimensional scaling techniques and cluster analysis. In this paper, exploratory factor analysis will be applied to verify construct equivalence. Exploratory factor analysis is a statistical technique used to uncover the underlying structure of a relatively large set of variables. Construct equivalence has been operationally defined as configural or factorial invariance (Welkenhuysen-Gybels & Van de Vijver 2001). This definition implies that a construct is equivalent across groups (or countries) if the factor loadings or items on the latent factor (or factors) are invariant across cultural groups (or countries).

The above overview makes clear that for 'real equivalence of meaning' (or in other words, for a direct comparison of the scores on the sports benefits battery, also higher levels of equivalence (i.e. measurement and scalar equivalence) should be tested. The present paper is consequently only a first step in establishing equivalence of meaning.

Table 1 shows the results of the exploratory factor analysis of the 13 sport benefit items asked in the 2004 Eurobarometer survey. Based on Kaiser's criterion of retaining factors with eigenvalues greater than one, the analysis resulted in a 3-factor-solution. Catell's scree test plot (results not shown here) however resulted rather in a one-factor solution. Therefore we have determined a range of possible solutions (a 1-, 2-, and 3-factor solution) and selected the solution generating the most comprehensible factor structure. This was, in accordance with previous research on sport benefits by Scheerder & Pauwels (2005) and Scheerder & Van Tuyckom (2006) the 3-factor-solution. Questions (f), (h), (i), (j), (k), (l), and (m) have high loadings<sup>3</sup> on the first factor, which we call 'challenge/competition/integration'. Questions (b) and (d) have high loadings on the second, 'recreation' while (a) and (g) load strongly on the third factor defined as 'health/fitness'. The third question 'to relax' has low loadings on all factors, although slightly higher on the 'recreation' dimension. The fifth question on new acquaintances has significant loadings on both the first and the second factor, slightly higher on the 'recreation' dimension than on the 'challenge/competition/integration' dimension.

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<sup>3</sup> Although we could use a more technical-mathematical based criterion for deciding which items to interpret on which factors, for exploratory purposes, we use a cut-off level of .5. Loadings above .5 are consequently considered as 'high' here.

**Table 1:** Promax rotated factor matrix<sup>4</sup> for 2004 Eurobarometer sport benefit items (total N = 29334)

In your opinion, what are the main benefits of sport?	Factor 1 (challenge/competition/ integration)	Factor 2 (recreation)	Factor 3 (health/fitness)
(a) to improve one's health (mentally or physically)	0.250	0.291	<b>0.515</b>
(b) to have fun	0.373	<b>0.591</b>	0.330
(c) to relax	0.297	<b>0.411</b>	0.365
(d) to be with friends	0.417	<b>0.611</b>	0.306
(g) to develop physical performance	0.385	0.283	<b>0.558</b>
(h) to improve self-esteem	<b>0.519</b>	0.389	0.437
(i) to develop new skills	<b>0.595</b>	0.431	0.389
(j) to build character/identity	<b>0.581</b>	0.338	0.376
(k) to achieve objectives	<b>0.543</b>	0.340	0.399
(l) to stimulate the spirit of competition	<b>0.551</b>	0.353	0.355
(m) to help disadvantaged people to integrate into society	<b>0.553</b>	0.339	0.244
<b>Eigenvalues</b>	4.039	1.160	1.040
<b>% of variance explained</b>	31.069	8.924	8.003
<b>Cumulative percentage</b>	31.069	39.993	47.936

In a second step, we can save the factor scores and examine how the different countries compare on the three dimensions (see Heath, Martin & Spreckles 2009). Our expectation is that, due to the large variety of ways in which the relationship of organized sport and the state is structured (with a differential organization of sports systems in European countries as a consequence), Southern countries (i.e. Italy and Spain) will tend to have larger proportions endorsing a challenge/competition conception of sports - due to the strong dependency of sports on the state - whereas Scandinavian countries (i.e. Norway, Finland and Denmark) will tend to have larger proportions endorsing a recreational conception of sport - due to relative autonomy of sport on the state - (see Heinemann 1999; Tokarski et al. 2009).

Table 2 shows the mean factor scores for the participating European Union countries, and as we can see, some of the Southern countries indeed come out scoring highly on the challenge/competition dimension, as predicted in the previous paragraph. The Scandinavian countries Finland and Sweden score highly on the health/fitness component, the Netherlands and Denmark on recreation. More surprisingly however, also Spain scores high on these two dimensions, counter to established theory (Heinemann 1999; Tokarski et al. 2009).

<sup>4</sup> In accordance with previous research on sport benefits by Scheerder & Pauwels (2005) and Scheerder & Van Tuyckom (2006), we used an oblique rotation with promax criterion. Orthogonal rotation (with either varimax or equimax criterion), however, yielded similar results.

Table 2: Mean factor scores by country

Country	challenge/competition/ integration	recreation	health/fitness
Belgium	0.271	<b>0.373</b>	0.221
Denmark	0.258	<b>0.499</b>	0.244
Germany	0.206	<b>0.350</b>	0.327
Greece	<b>0.425</b>	0.097	0.365
Spain	0.094	<b>0.107</b>	<b>0.113</b>
Finland	0.031	0.124	<b>0.370</b>
France	0.110	<b>0.105</b>	0.088
Ireland	0.108	<b>0.207</b>	0.088
Italy	<b>-0.242</b>	-0.107	-0.126
Luxembourg	0.094	<b>0.169</b>	0.104
Netherlands	0.130	<b>0.435</b>	0.215
Austria	<b>0.255</b>	0.207	<b>0.259</b>
Portugal	<b>-0.314</b>	-0.291	-0.176
Sweden	0.195	0.405	<b>0.447</b>
United Kingdom	0.236	<b>0.302</b>	0.104
Cyprus	-0.355	<b>-0.478</b>	-0.405
Czech Republic	0.097	0.078	<b>0.320</b>
Estonia	0.071	-0.021	<b>0.212</b>
Hungary	0.040	-0.052	<b>0.165</b>
Latvia	<b>0.162</b>	0.022	<b>0.158</b>
Lithuania	<b>-0.084</b>	0.010	<b>-0.083</b>
Malta	0.205	0.207	<b>0.294</b>
Poland	-0.009	-0.116	<b>0.176</b>
Slovakia	-0.022	-0.089	<b>0.152</b>
Slovenia	<b>0.629</b>	<b>0.622</b>	0.503
Mean	0.104	0.155	0.165
Min/max	-0.314/0.425	-0.478/0.622	-0.405/0.503

But are the above cross-national differences real and consequently require some modification to theory (for Spain for example) or are they artefactual and should thus better be discarded. Our key concern here is equivalence of meaning<sup>5</sup>, i.e. do the sport benefit items mean the same in different contexts?

To check for equivalence of meaning, we carried out separate exploratory factor analyses for each country. The results suggest that there is substantial cross-national similarity in the descriptive structure of the responses (details not shown). In particular, in almost all countries there was a first factor explaining much of the variance, followed by a second and a third factor (this last factor with eigenvalues above, or in some cases, slightly below one). But does this mean that we have equivalence of meaning across countries and that we can safely use the factor scores from these three dimensions as variables in a substantive analysis? The answer is 'NO'. More detailed analyses of the individual items indicate that, despite the superficial similarity of the factor structures, there might be no equivalence of meaning. This can be seen in Table 3, showing the loadings on the three dimensions of the 13 sport benefit items used in the 2004 Eurobarometer survey. The first column for instance shows how the item 'to improve one's health' loads on the first, second and third dimension obtained in the country-specific factor analysis. On theoretical grounds, we might argue that the 'be with friends' question would be central to the recreation dimension, whereas 'physical performance' would be central to the health/fitness dimension and 'meet other cultures', 'develop new skills' and 'build character' to the challenge/competition/integration dimension. Overall, this is the case with 'be with friends' having an overall loading of .611 on the second dimension, 'physical performance' having an overall loading of .558 on the third dimension, and 'meet other cultures', 'develop new skills' and 'build character' having loadings of respectively .586, .595, and .581 on the first dimension. However, detailed inspection of the country-by-country loadings indicates that there are some striking exceptions to this. In Denmark, Sweden, the Netherlands, as well as in Malta and Cyprus, 'be with friends' loads highly on the third dimension, whereas 'physical performance' loads higher on the 1st dimension in some of these countries. Based on these and other observations from Table 3, it is very unlikely that we have equivalence of meaning here. While the Eurobarometer team has probably gone to great pains to ensure that formally identical questions are asked in each survey, formal equivalence of wording does not necessarily lead to equivalence of meaning in differing societal contexts (Braun & Harkness 2005). For a number of countries, using the factor solution found for the whole dataset is likely to be misleading. For instance, it cannot simply be assumed that scores on the first factor are all equally good measures of the challenge/competition/integration conceptions of sport benefits.

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<sup>5</sup> Other issues might reduce cross-national comparability as well. For example, there might be cultural variations in acquiescence bias (the tendency to agree with questions), in social acceptability bias, or in the use of more extreme response categories. Unfortunately, it is impossible to test these ideas properly without purpose-designed survey experiments (Heath, Martin & Spreckleson 2009).

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Table 3: Factor loadings of the 2004 Eurobarometer individual items on the three dimension of sports benefits: country-specific analyses (Principal Axis Factoring with Promax rotation)

	improve health			have fun			relax			be with friends			new acquaintances			meet other cultures			physical performance			improve self-esteem		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
<b>Belgium</b>	0,209	0,093	0,159	0,299	0,621	0,420	0,145	0,301	0,185	0,335	0,556	0,315	0,312	0,595	0,373	0,512	0,497	0,477	0,355	0,294	0,435	0,721	0,340	0,467
<b>Denmark</b>	0,023	0,25	-0,004	0,262	0,176	0,597	0,216	0,253	0,225	0,320	0,125	0,562	0,474	0,299	0,510	0,627	0,333	0,346	0,164	0,449	0,053	0,285	0,428	0,173
<b>Germany</b>	0,094	0,078	0,238	0,313	0,532	0,308	0,214	0,268	0,213	0,375	0,553	0,219	0,543	0,520	0,306	0,642	0,428	0,349	0,250	0,182	0,414	0,514	0,417	0,555
<b>Greece</b>	0,087	-0,02	0,416	0,288	0,601	-0,020	0,264	0,354	-0,002	0,390	0,605	-0,070	0,562	0,569	-0,120	0,621	0,452	0,226	0,370	0,176	0,247	0,442	0,475	0,126
<b>Spain</b>	0,102	0,084	0,101	0,590	0,413	0,315	0,449	0,316	0,346	0,532	0,449	0,378	0,486	0,438	0,495	0,454	0,550	0,770	0,408	0,408	0,246	0,558	0,512	0,448
<b>Finland</b>	0,054	0,014	0,232	0,336	0,591	0,246	0,109	0,193	0,145	0,261	0,447	0,117	0,426	0,405	0,175	0,511	0,300	0,112	0,100	0,172	0,421	0,404	0,321	0,445
<b>France</b>	0,046	0,015	0,210	0,420	0,560	0,100	0,037	0,194	0,09	0,345	0,579	0,075	0,332	0,497	0,378	0,309	0,358	0,391	0,402	0,178	0,184	0,396	0,190	0,434
<b>Ireland</b>	0,090	0,084	-0,130	0,231	0,251	0,556	0,145	0,188	0,200	0,314	0,283	0,320	0,512	0,433	0,323	0,568	0,412	0,186	0,346	0,508	0,119	0,440	0,339	0,103
<b>Italy</b>	0,043	-0,25	0,109	0,107	0,344	0,035	0,046	0,072	0,176	0,192	0,458	0,038	0,261	0,432	-0,070	0,303	0,414	-0,340	0,262	0,055	0,028	0,464	0,141	0,127
<b>Luxembourg</b>	0,163	0,013	-0,010	0,278	0,302	0,702	0,093	0,153	0,041	0,204	0,433	0,459	0,341	0,605	0,349	0,403	0,585	0,301	0,464	0,258	0,159	0,558	0,472	0,252
<b>Netherlands</b>	0,166	0,098	0,213	0,275	0,228	0,670	0,193	0,184	0,524	0,328	0,369	0,438	0,339	0,521	0,273	0,438	0,738	0,225	0,467	0,270	0,307	0,580	0,435	0,258
<b>Austria</b>	0,130	0,141	0,387	0,254	0,414	0,132	0,357	0,318	0,190	0,270	0,403	0,185	0,542	0,375	0,152	0,526	0,272	0,053	0,142	0,285	0,569	0,511	0,417	0,294
<b>Portugal</b>	-0,010	0,005	-0,270	0,086	0,156	0,372	0,101	0,132	0,285	0,141	0,264	0,478	0,234	0,230	0,215	0,647	0,324	0,194	0,181	0,368	0,121	0,310	0,261	0,180
<b>Sweden</b>	0,060	0,160	-0,060	0,284	0,277	0,493	0,234	0,238	0,161	0,396	0,228	0,658	0,583	0,364	0,484	0,697	0,383	0,374	0,174	0,415	0,153	0,376	0,515	0,252
<b>United Kingdom</b>	0,104	0,048	0,268	0,341	0,528	0,282	0,245	0,427	0,211	0,372	0,672	0,236	0,526	0,530	0,405	0,628	0,377	0,357	0,414	0,300	0,542	0,435	0,327	0,520
<b>Cyprus</b>	0,356	0,793	0,379	0,186	0,199	0,392	0,317	0,699	0,363	0,245	0,325	0,653	0,429	0,269	0,700	0,547	0,191	0,349	0,363	0,754	0,277	0,507	0,431	0,334
<b>Czech</b>	0,119	0,002	0,330	0,261	0,761	0,152	0,284	0,318	0,234	0,356	0,442	0,222	0,495	0,42	0,284	0,555	0,197	0,214	0,125	0,110	0,339	0,441	0,301	0,508

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Republic																								
<b>Estonia</b>	0,126	0,040	0,088	0,328	0,357	0,495	0,210	0,164	0,443	0,297	0,332	0,614	0,355	0,526	0,457	0,433	0,742	0,312	0,391	0,242	0,228	0,520	0,313	0,290
<b>Hungary</b>	0,152	-0,120	0,183	0,244	0,574	0,132	0,143	0,394	0,122	0,425	0,442	0,176	0,559	0,319	0,201	0,482	0,197	0,181	0,209	0,120	0,517	0,453	0,065	0,438
<b>Latvia</b>	0,135	0,129	0,216	0,358	0,548	0,312	0,367	0,531	0,402	0,491	0,659	0,376	0,616	0,667	0,286	0,626	0,645	0,151	0,403	0,391	0,516	0,607	0,620	0,362
<b>Lithuania</b>	0,117	0,045	0,083	0,323	0,508	0,255	0,369	0,479	0,256	0,376	0,682	0,372	0,566	0,682	0,548	0,514	0,441	0,674	0,584	0,417	0,502	0,597	0,427	0,351
<b>Malta</b>	0,127	0,090	0,056	0,483	0,407	0,655	0,231	0,276	0,440	0,327	0,507	0,570	0,446	0,624	0,476	0,652	0,838	0,531	0,589	0,423	0,294	0,589	0,429	0,335
<b>Poland</b>	0,121	0,022	0,445	0,254	0,506	-0,160	0,085	0,317	0,021	0,341	0,508	-0,010	0,534	0,491	-0,010	0,348	0,318	-0,110	0,267	0,053	0,166	0,356	0,203	0,101
<b>Slovakia</b>	0,116	0,004	0,292	0,197	0,539	0,008	0,162	0,196	-0,020	0,205	0,419	0,094	0,415	0,421	-0,010	0,387	0,234	-0,090	0,082	0,062	0,465	0,385	0,211	0,195
<b>Slovenia</b>	0,219	0,348	0,155	0,519	0,352	0,630	0,285	0,349	0,467	0,533	0,419	0,505	0,778	0,514	0,565	0,718	0,482	0,423	0,457	0,655	0,477	0,623	0,651	0,466

One solution in this particular case might be to drop the problematic items from the factor analysis and to move towards the use of fewer items in order to measure the three dimensions. Or it might be preferred to use the single items measuring the three dimensions of sport benefits (as the 2007 ISSP survey on sport and leisure time has done). While the use of multi-item scales is generally recommended, and the inclusion of a greater number of items generally leads to an increase in reliability as measured by Cronbach's alpha, the increase in overall reliability appears to be accompanied here by a reduction in the validity of the cross-national comparisons. The issue of whether multiple-item measures are always to be preferred has been debated before by, among others, Rossiter (2002) who argues for the centrality of validity and for the use of single-item measures where that increases validity, an approach that we tend to support with regard to the sport benefits battery of the 2004 Eurobarometer on sport. Nevertheless, further research into higher levels of equivalence is needed.

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## CONCLUSION

Cross-national research rests on the assumption of equivalence of meaning: comparisons between countries are only worthwhile when different countries measure things in the same way. After discussing 'equivalence of meaning' in the context of comparative sport research, we have analyzed the 2004 Eurobarometer battery on sport benefits by means of exploratory factor analysis and concluded that assuming equivalence of meaning has the potential to generate misleading findings in some countries. Dropping items that appear to lack equivalence of meaning might be a solution in this case. Another strategy is to drop countries for which equivalence of meaning cannot be demonstrated from the analysis, although this runs the risk of narrowing the range of countries to more homogeneous and possibly westernized ones. Additional solutions are the use of supplementary open-ended material (Schumann & Presser 1981), or Przeworski & Teune's (1967) method of measuring the same concept with different scales in different countries. In addition to the common questions designed by the central coordinating committee of the national program, individual countries could be encouraged to include their own questions which are faithful to the local context. However, since each measure needs to be investigated in its own right, we doubt if any general rules would be wise. Moreover, much more research into higher levels of equivalence needs to be done.

While our findings are specific to this particular round of the Eurobarometer and to this particular battery of questions on sport benefits, the method of exploratory factor analysis that we have employed could also be applied to other datasets and to other substantive topics.

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## CHAPTER 3: CONTEXTUAL DESCRIPTION

### PAPER 3: *SPORT FOR ALL?* SOCIAL STRATIFICATION OF RECREATIONAL SPORT ACTIVITIES IN THE EU-27

**A slightly different version of this paper is published in *Kinesiologia Slovenica* (Van Tuyckom & Scheerder 2008).**

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#### INTRODUCTION

Sport and Europe share a strong connection (see Scheerder, Van Tuyckom & Vermeersch 2007). Not only is Europe the birthplace of modern sport—which originated in the British public schools in the eighteenth and nineteenth century (Renson 1992), but Olympism and the *Sport for All* movement also have their roots in European soil. The fact that Europe is considered by some to be ‘the powerhouse of world sport’ (European Commission 1998) is demonstrated by the number of international organizations who have established and maintained headquarters in Europe, for example the IOC (International Olympic Committee) in Lausanne, the FIFA (Fédération Internationale de Football Association) in Zürich, the IAAF (International Association of Athletics Federation) in Monaco, etc. The major role European countries have played historically in the organization of several international sport events is evident as well (Scheerder & Vermeersch 2007): more than half of the Olympic Games and World Championship Football tournaments have taken place in a European host city. One of the distinctive characteristics of European sport has for a long time been the so-called European sport model, a model in which sport is embedded within a network of sport clubs and sport federations which organize competitions at all levels and which are linked to one another through systems of promotion and regulation (Heinemann 1999; Van Bottenburg, Rijnen & Van Sterkenburg 2005). For example, in the former EU-25 alone, approximately 750,000 clubs were operating, with about 150 million sustaining members, which equals one third of the total European Union population. Put another way, there were about 17 sport clubs per 10,000 citizens (Scheerder 2004). However, the majority of those active people were ‘amateurs’ who did not make money from the practice of sports. One particular powerful, commercial sport dominates the European club scene: football (soccer). European football is the most popular sport in most countries and is growing in popularity in countries where this is not yet the case. Europe counts more football players than any other continent: of the 122 million official football players almost 36 million of them are active members of a

European football club. As such, it is not surprising that a European sport federation such as the UEFA (Union of European Football Associations) is an important player in developing European sport policy (Scheerder & Van Tuyckom 2006; Scheerder & Vermeersch 2007). In addition to the traditional sport organizations, several European governments have contributed to the development of the European sport sphere. After World War II, many (West-)European countries developed a noticeably active government policy with regard to sport and leisure time physical activity. An important aim of this policy was to inspire as many citizens as possible to get involved in sportive action and to take part in physical activities. Until the 1960s sport participation was largely reserved for young, competition-oriented men, often from the middle and higher social classes (Bourdieu 1979, 1991; Gruneau 1975; Loy 1969; Lüschen 1963, 1969). In 1966 the Council of Europe had already launched the *Sport for All* idea, as a result of which *Sport for All* achieved a pioneer role in the advancement of sportive body movement among European citizens (Husting 2003; Scheerder & Vermeersch 2007). It was, however, not until 1975 that government actions with respect to recreational sport became institutionalized in the form of the European Sport for All Charter (Council of Europe 1975). Inspired by the Universal Declaration of Human Rights, this Charter endorses the right to active sport participation for every citizen. All Council of Europe member-country ministers responsible for sport signed the Charter, and it still acts as a democratic counterbalance for the ideology of top level sport (Vanreusel 2001).

It is evident that societal interest in sport has increased in the past decades, and that active sport participation has become one of the most common forms of leisure activity. Crum summarized this trend as the "*sportization of society*" (1991: 15). However, this popularization of sport does not imply that sport participation has become (more) democratized. Numerous empirical studies demonstrate that participation in sport is still socially stratified according to sex, age, income, education, etc. (Collins 2003; Collins & Kay 2003; De Haan & Breedveld 2000; Hartmann-Tews 2006; Lamprecht & Stamm 1995; Scheerder & Pauwels 2002; Scheerder, Vanreusel & Pauwels 2007; Sugden & Tomlinson 2000; Taks, Renson & Vanreusel 1998; Wilson 2002). Bourdieu's perspective (1979: 24) on "*sport as a site of struggles between the social classes*" remains a topic of interest. However, according to some authors, traditional background characteristics as education but also age and gender have lost their structuring impact on society (Hartmann-Tews 2006; Waters 1994) and consequently become irrelevant in research into sport participation (Ohl 2000). Also according to Elchardus' (2009) *symbolic society*, differences in social positions no longer lay the foundation of differences in society. On the contrary, an increasingly important role is attributed to values, interests, opinions and behaviors, or: the *lifestyle* of consumers and participants (Beck 1992; Giddens 1991).

In this paper, we intend to present an initial look at European citizens' sporting activity patterns. Specifically, an exploratory analysis is performed of (1) overall sporting activity patterns in the EU-27, and (2) social stratification of sporting activity patterns in the EU-27. By doing this we intend to develop a picture of sport participation in the European Union, and to verify whether traditional background characteristics such as sex, age, education, etc. still play an important role in recreational sport activities. The first section of this article describes the research material used for the (bivariate) analyses. In the second section, the results are

presented. Finally, the third section discusses the results in greater detail and provides some policy recommendations.

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## METHOD

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### COMPARATIVE RESEARCH INTO SPORTING ACTIVITY

Europe has a tradition of mapping out sporting activity based on scientific research from European member states, an approach that is aimed at enhancing a stimulating sport policy both on the European level and the level of the individual member states. *"It is widely held that proper comparative information about sports participation in different countries would be of great benefit to decision-makers. In particular, it would help them identify effective strategies for increasing the level, range and frequency of sport participation in their respective country"* (Gratton 1999: 3). For example, at the end of the 1970s and the beginning of the 1980s, Rodgers (1977, 1978) and Claeys (1982a, 1982b) conducted a study of the sporting behavior of European citizens, commissioned by the European Council. Two decades later a similar European project, the COMPASS study (COMPASS 1999; see also Gratton 1997; Rossi-Mori et al. 2002), showed the sporting activity of seven European member states by means of comparable and adjusted questionnaires. In addition to these seven countries, the COMPASS study also included twenty other countries that had data on sporting activity available; however, the figures provided did not allow for cross-national comparisons.

More recently, the Dutch Mulier Instituut carried out a study, commissioned by Nike Europe (Van Bottenburg, Rijnen & Van Sterkenburg 2005), about active sporting activity in Europe. This study provided an overview of research into sport activity in the (then still) 25 member states of the European Union. However, this research was based on secondary source material, so results from the various countries are not comparable. Like the private initiatives mentioned earlier, an examination of the sporting activity of European Union citizens was conducted by the European Commission (in particular the Directorate-General for Education and Culture) by means of the Eurobarometer survey series (European Commission 2004). Since these surveys apply standardized measurement instruments, they do allow for cross-national comparisons between the different European member states. Partly due to these Eurobarometer surveys, recently more attention has been paid to *cross-national* differences in the social stratification of sport participation. Until recently, attention was mainly limited to research in one country on a certain point of time (see different studies following the work of Lüschen 1963, 1969), or in one country on different points of time (Scheerder & Pauwels 2002). The present study is innovating in that it contributes to the *cross-national* study of social stratification in sport, a line of research that is still in its infancy (Hartmann-Tews 2006; Scheerder & Van Tuyckom 2006, 2007).

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### RESEARCH MATERIAL

The most recent Eurobarometer survey about recreational sporting activity was carried out in November 2005 by request of the European Commission, Directorate-General Press and Communication Polls. It covers the population of each of the European Union member states aged fifteen years and older ( $N = 26,688$ ). The survey

was also conducted in Bulgaria and Romania, an interesting detail since at that time they were still preparing for accession to the European Union. A multistage random sample design was applied in all countries and all interviews were conducted face-to-face in people's homes, in the appropriate national language. With respect to the data capture, CAPI (Computer Assisted Personal Interview) was used in those countries where that technique was available (Papacostas 2005). In each member state, at least 500 (Malta) and at most 1557 (Germany) interviews were conducted. In spite of the standardized procedure, however, it must be considered that citizens from different member states may have different perceptions about the concept of sporting activity. Consequently, differences in responses might be partly ascribed to differences in conceptualization.

This study focuses specifically on aspects of *active* sporting participation. *Passive* participation—as spectators, newspaper readers or television viewers—will not be dealt with here. In addition, also cycling, running and physical activity during work, household, gardening or do-it-yourself work, or moving from one place to another, are not included. Eurobarometer 64.3 (2005) assesses overall sporting activity by means of the following question: 'In the last 7 days, how much physical activity did you get from recreation, sport and leisure-time activities?' The answer categories are as follows: (i) a lot, (ii) some, (iii) little, and (iv) none. Physical activity items not included are physical activity when at work, when moving from place to place, and when working in and around the house since these items are the subject of a different question. The original question is dichotomized, whereby respondents who answered 'none' are defined as non-participants and those who answered 'a lot', 'some' or 'little' are defined as participants. This dependent variable is related to the following six background variables: *Gender*: men versus women; *Age*: (i) 15- to 24-year-olds, (ii) 25- to 34-year olds, (iii) 35- to 44-year-olds, (iv) 45- to 54-year-olds, (v) 55- to 64-year-olds, or (vi) 65 years old and older; *Marital status*: (i) cohabiting or married, (ii) single, (iii) divorced, or (iv) widowed; *Occupation*: (i) self-employed, (ii) manager, (iii) white-collar worker, (iv) manual worker, (v) house person, (vi) unemployed, (vii) retired, or (viii) student; *Education (age when finished)*: (i) younger than age 15, (ii) between age 15 and age 18, (iii) between age 18 and age 21, or (iv) after age 21; *Geographical status*: (i) living in a rural area or village, (ii) living in a small- or mid-sized town, or (iii) living in a large town.

To get an initial picture of active sporting participation with regard to certain socio-cultural and socio-economic background characteristics, several bivariate analyses were performed. The results of the analyses are presented by means of crosstabulations with *Pearson chi<sup>2</sup>* and *Cramér's V* test statistics. These statistics are used to test the hypothesis of no association between columns and rows in tabular data, or in the case of this study, no association between the independent and the dependent variables. A probability of 0.05 or less is interpreted as justification for rejecting the null hypothesis that the row variable is unrelated (that is, only randomly related) to the column variable, or for accepting the alternative hypothesis that the row and column variables - or independent and dependent variables - are related to each other.

## RESULTS

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### OVERALL SPORTING ACTIVITY

First of all, we notice striking differences between the European member states with respect to sporting activity in 2005. Figure 1 shows Finland as the most active sporting nation. More than eight out of ten Finns age fifteen and older are active in sport. Remarkably, in contrast with research from 2004 in which sporting participation was assessed by means of the question 'How often do you exercise or play sport?' (Scheerder & Van Tuyckom 2006, 2007), the other Scandinavian countries are not among the leaders in the present survey. Sweden (71%) and Denmark (62%) are merely in eighth and thirteenth place, respectively. Portugal and Romania are last with only four out of ten citizens being active in sport. On average, 63% of the European adults indicate some sort of physical activity from recreation, sport or leisure time activities in the last seven days. The percentages of countries which differ significantly from the European average are indicated with an asterisk (\*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ). In general, sporting activity declines when moving from north to south in Europe. Citizens from more Northern locations and from Scandinavian countries exceed their continental colleagues from the Mediterranean Sea area. In addition, Eastern-Europeans generally score less well in the sportive sphere than Western-Europeans. The exceptions, however, are Slovenia and to a lesser degree the Czech Republic and Bulgaria.



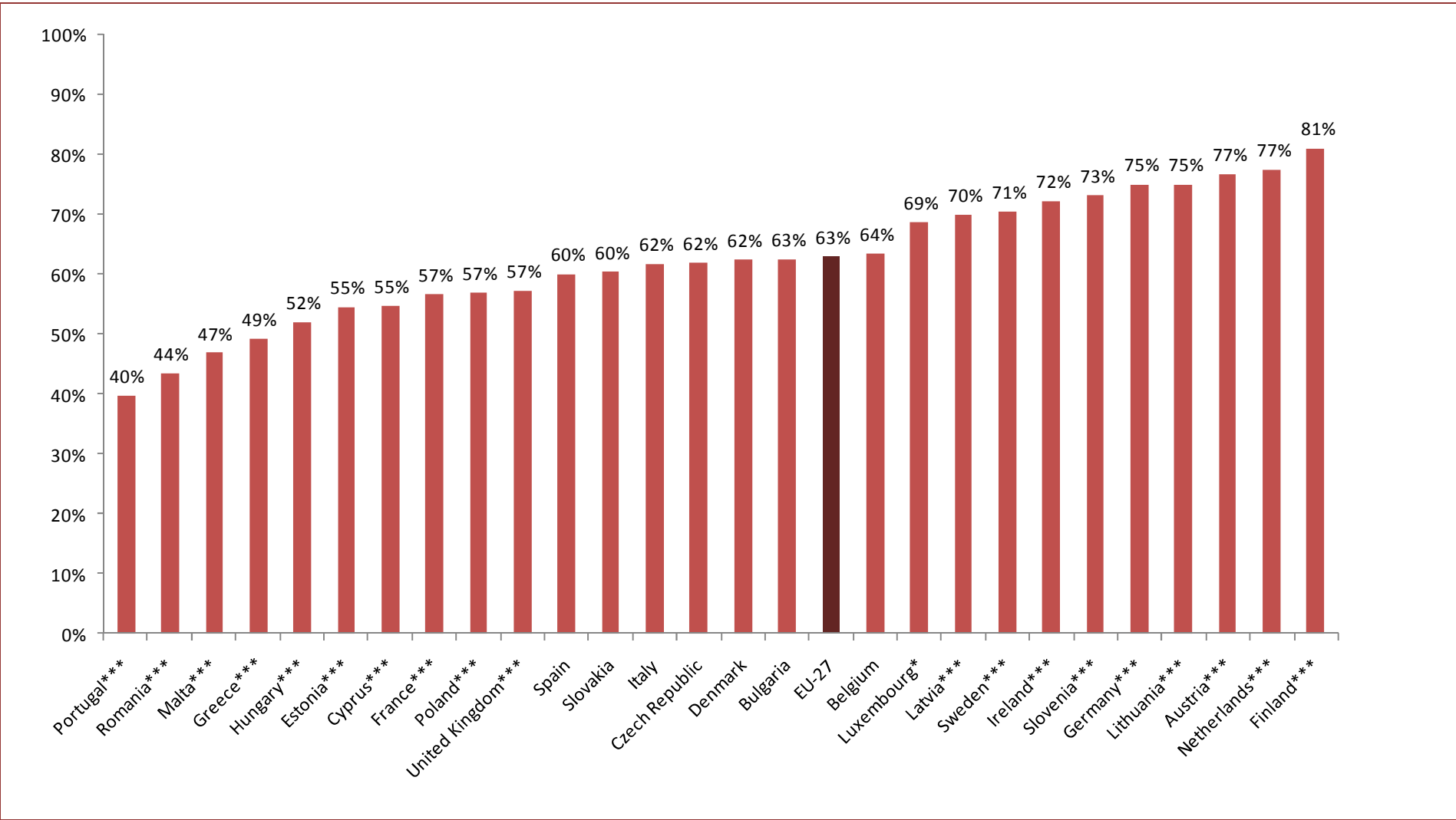


Figure 1: Sporting activity for all EU-27 member states (2005), percentages in function of total population (\*  $p \leq .05$ ; \*\*\*  $p \leq .001$  for difference with EU-27 average)

## SOCIAL STRATIFICATION OF SPORTING ACTIVITY

From Table 1 it is apparent that differences in sporting activity occur according to sex, age, marital status, occupation, educational level and geographical status. First, more European men than women seem to be actively involved in sports. Whereas 66% of the European men aged 15 or more are active sport participants, this number decreases by 8% for their female counterparts. Second, age also seems to be a strong determinant of sporting activity in the EU-27. As age increases, sporting activity decreases. Almost 80% of the 15- to 24-year-old Europeans are active in sport, in contrast to merely 45% of the 65-year-olds. Third, sporting activity clearly increases with additional years of education. Of the European citizens who finished school after the age of 21, 69% are active in sport, in contrast to 39% of those who finished school before the age of fifteen. With respect to the relationship of sporting activity to marital status, single Europeans are the most active (75%), followed by divorced people (64%) and cohabiting or married individuals (61%). Widowed Europeans are the least active in sport, which is not surprising given that this age group is generally older. Differences according to occupation can be noticed as well. As expected, sport participation grades are the lowest among retired citizens (48%) and the highest among students (85%). The latter are followed by managers (76%), white collar workers (71%), manual workers and self-employed individuals (both 63%), and unemployed persons (57%). The house persons group is, with only 49%, the least involved in sport. Finally, geographical status is a determinant of sporting activity as well. Of the European citizens living in a rural area or village, 57% are active sport participants. This number increases to 63% for people living in a small- or mid-sized town, and to 66% for people living in a large town.

**Table 1:** Sporting activity according to background variables for all EU-27 member states (2005), results of bivariate analyses, percentages in function of total population

Variable	Categories	No	Yes
<b>Sex</b>	men	34.2%	65.8%
	women	42.0%	58.0%
<b><math>\chi^2 = 186,743</math>; Cramér's <math>V = 0,081</math>; <math>df = 1</math>; <math>p &lt; .001</math>; <math>N = 28815</math></b>			
<b>Age category</b>	15- to 24-year-olds	20.2%	79.8%
	25- to 34-year-olds	32.1%	67.9%
	35- to 44-year-olds	34.8%	65.2%
	45- to 54-year-olds	39.5%	60.5%
	55- to 64-year-olds	42.8%	57.2%
	65 years and older	55.5%	44.5%
<b><math>\chi^2 = 1411,205</math>; Cramér's <math>V = 0,221</math>; <math>df = 5</math>; <math>p &lt; .001</math>; <math>N = 28815</math></b>			
<b>Marital status</b>	cohabiting or married	39.2%	60.8%
	single	24.6%	75.4%

	divorced	36.0%	64.0%
	widowed	60.5%	39.5%
<b><math>\chi^2 = 986,539</math>; Cramér's <math>V = 0,186</math>; <math>df = 3</math>; <math>p &lt; .001</math>; <math>N = 28495</math></b>			
<b>Occupation</b>	self-employed	37.4%	62.6%
	manager	24.0%	76.0%
	white-collar worker	29.0%	71.0%
	manual worker	36.7%	63.3%
	house person	51.0%	49.0%
	unemployed	43.2%	56.8%
	retired	52.3%	47.7%
	student	15.2%	84.8%
<b><math>\chi^2 = 1814,354</math>; Cramér's <math>V = 0,251</math>; <math>df = 7</math>; <math>p &lt; .001</math>; <math>N = 28815</math></b>			
<b>Education</b>	finished younger than age 15	61.0%	39.0%
	finished between age 15 and age 18	43.2%	56.8%
	finished between age 18 and age 21	36.1%	63.9%
	finished after age 21	31.4%	68.6%
<b><math>\chi^2 = 1106,617</math>; Cramér's <math>V = 0,206</math>; <math>df = 3</math>; <math>p &lt; .001</math>; <math>N = 26146</math></b>			
<b>Geographical status</b>	rural area or village	42.6%	57.4%
	small-or mid-sized town	37.3%	62.7%
	large town	34.4%	65.6%
<b><math>\chi^2 = 136,200</math>; Cramér's <math>V = 0,069</math>; <math>df = 2</math>; <math>p &lt; .001</math>; <math>N = 28681</math></b>			

## DISCUSSION

Sport and Europe are inextricably connected, and it seems clear that Europe will continue to strengthen its ties with professional and non-professional sport. Since the 1995 Bosman ruling, there has been an increasing involvement—governmental as well as non-governmental—in European sport policy. In addition, several academic and informal organizations have been established (see for instance [www.easm.net](http://www.easm.net), [www.ejss.de](http://www.ejss.de) and [www.sportandeu.com](http://www.sportandeu.com)) which focus on sport policy. Furthermore, in Europe a tradition is developing to empirically map several aspects of sport participation and sport policy. One of the most useful instruments for measurement on the European level is the Eurobarometer survey series. Based on the Eurobarometer survey of 2005, this paper has tried to present insight into the sporting activity patterns of EU-27 citizens. In addition, our data has allowed us to carry out some exploratory bivariate analyses so that sport participation could be examined in function of certain socio-cultural and socio-economic background characteristics.

Some remarkable findings emerge from this paper. First of all, we find that the sport participation behavior of Europeans is geographically stratified. In particular, there are apparent differences between Northern- and Western-European countries on the one hand and Southern- and Eastern-European countries on the other hand. In general, sport participation declines when going from north to south and from west to east, with a few exceptions. On average, 63% of European citizens are active in sport. However, the popularization of sport participation at the start of the 21<sup>st</sup> century does not change the fact that in 2005 four out of ten Europeans were still not exposed to sport or physical activity in their leisure time, even by the rather broad definition of sporting activity used in the 2005 Eurobarometer survey.

Furthermore, sport participation in the EU-27 is still socially stratified. The sportive leisure-time behavior of European citizens aged fifteen and over seems to differ in terms of sex, age, marital status, occupation, educational level and geographical status. These findings are congruent with the results from previous national and regional studies into sport participation which have shown that in many European countries sporting activity patterns are still characterized by social differences (see Collins & Kay 2003; De Haan & Breedveld 2000; Lamprecht & Stamm 1995; Scheerder & Pauwels 2002; Scheerder et al. 2002; Scheerder & Van Tuyckom 2006, 2007).

The findings discussed in this paper are based on a first, exploratory analysis. Consequently, some prudence is called for in the interpretation of the findings. Nevertheless, the results show that Europe still has many policy challenges to face in the field of sport. A Europe aiming at greater and greater integration of its citizens into the political sphere should also pay attention to optimal and equal opportunities with respect to the recreational sport activities of its citizens. As such, it is important to adjust for any social discrepancies with respect to sporting activity. In spite of 30 years of *Sport for All* policy, differences according to social position continue to exist. At the onset of the 21<sup>st</sup> century active involvement in sport is still related to social position and social background characteristics. In other words, democratization of sport participation as of 2005 has still not yet been realized. Consequently, Europe should pay increasing attention to the promotion of sport and leisure time activity for and by all Europeans, so that elements such as health and social integration can be considered as appropriate arguments for potential policy changes. The challenge of developing a sound policy consists of subordinating the influence of geographical and social differences as much as possible to the needs of the social, educational and medical spheres, as well as to personal preferences and needs.

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## PAPER 4: A MULTILEVEL ANALYSIS OF SOCIAL STRATIFICATION PATTERNS OF LEISURE TIME PHYSICAL ACTIVITY AMONG EUROPEANS

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### INTRODUCTION

Physical activity is an important public health issue and the benefits of an active lifestyle in relation to well-being and health have been strongly emphasized in recent years in Europe, as well as in most of the rest of the world (Brownson et al. 2001; Cavill, Kahlmeier & Racioppi 2006; Rütten & Abu-Omar 2004; Tammelin et al. 2003). Physical inactivity is associated with increased risk of chronic diseases and premature mortality (Inchley et al. 2005) and with other disease states such as hypertension, diabetes, osteoporosis, particular forms of cancer, obesity and even psychological disorders (Kafatos et al. 1999). Therefore, the need to increase participation in regular physical activity has been identified as one of the most prevalent public health burdens of our times in many developed countries (Cavill 2006; European Commission 2007; Inchley et al. 2005; Rütten & Abu-Omar 2004). Physical inactivity is estimated to account for about 600,000 deaths per year in the WHO's European region (European Commission 2007a). In addition, more than half of the adult population in this region is overweight or obese, and obesity-related illnesses are estimated to account for as much as 7% of total healthcare costs in the European Union. Childhood obesity is of particular concern. According to the International Obesity Task Force, an estimated three million European school children are now obese, and some 85,000 more children become obese each year (European Commission 2007a). The European Commission believes, therefore, that the European Union and its member states must take proactive steps to reverse the decline in physical activity that has occurred over the past several decades. In 2007 the Commission adopted two white papers in which the need for physical activity figures prominently: the White Paper on a strategy for Europe on nutrition, overweight and obesity related health issues (European Commission 2007b) and the White Paper on sport (European Commission 2007c).

The European Union defines physical activity as *“any bodily movement associated with muscular contraction that increases energy expenditure above resting levels”* (European Commission 2008). This broad definition includes different contexts of physical activity, for example, leisure time physical activity or sporting activity, occupational physical activity (e.g., manual workers), physical activity from household activities (e.g., cleaning, gardening, home repair), and physical activity connected with self-powered transport (e.g., walking to work, cycling to bakery). Since many leisure time physical activities or sports have the distinct advantage over other types of physical activity of being, by their very nature, sufficiently physically demanding to meet the intensity required for health benefits, the present study pays specific attention to the contribution of *leisure time physical activity or sport*. Throughout, where reference is made to leisure time physical activity or sport, it is based on the broad definition agreed on by the Council of Europe which states that it is *“all forms of physical*

*activity which, through casual participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels"* (Council of Europe 1993). This definition extends beyond traditional team games and incorporates individual sport and fitness-related activities such as aerobics and dance, as well as recreational activities such as long walks and cycling. It extends from casual and informal participation to more serious organized club sport. For a minority it even involves complete commitment in pursuit of the highest level of excellence at world level. With respect to this specific form of physical activity, it is interesting to note that over the last few decades a process of 'sportification' has emerged within Europe (Cachay 1990; Crum 1993; Digel 1990). Societal interest in leisure time physical activity has increased, and there is a multiform spectrum of sport participation styles (Crum 1993). However, in spite of the growing popularity of sport and the increasing internal differentiation of the sport system, the level of non-participation in leisure time physical activities remains quite high, and social inequality, exclusion, and discrimination are still prevalent with regard to leisure time physical activity. Several authors have argued that the opportunity to be physically active in leisure time physical activity is stratified according to certain socio-cultural characteristics (Bourdieu 1991; Scheerder et al. 2002). Differences in participation rates are found among groups defined by gender, age, marital status, socio-economic status, and geographical status (Falgairette, Deflandre & Gavarry 2004; Taks, Renson & Vanreusel 1998; Collins & Kay 2003; Moamouri, Brisswalter & Delignières 1999; Sugden & Tomlinson 2000; Trost et al. 2002).

The purpose of this study is to present empirical insight into the social stratification of leisure time physical activity in the European Union. Previous research has already focused on the association between certain socio-demographic variables and the prevalence of sufficient physical activity for health across the EU-15 (Sjöström et al. 2006). However, the present study is the first of its kind to focus specifically on the social stratification of leisure time physical activity, and to do this from a complete European (EU-27) perspective. Moreover, since previous research (Hartmann-Tews 2006; Scheerder & Van Tuyckom 2007) has revealed significant variation in leisure time physical activity across countries, the present study is also designed to identify between-country variation in (the socio-demographic patterning of) leisure time physical activity.

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## METHODS

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### DATA

The developments mentioned above have led public health experts to push for internationally coordinated efforts to assess and monitor physical activity - leisure time physical activity in particular - on the population level (Booth 2000). However, international studies determining the prevalence of physical activity in the European Union are scarce since such efforts have in the past been hampered by the use of different sampling and measurement methods among member states (Gratton 1997; Rossi-Mori et al. 2002; Van Bottenburg, Rijnen & Van Sterkenburg 2005). In response to this problem, standard population-level public opinion surveys, called Eurobarometers, are conducted on behalf of the European Commission and provide regular monitoring of social and political attitudes in the European public. Eurobarometer 64.3 *Foreign Languages, Biotechnology,*

*Organized Crime, and Health Items* is the most recent Eurobarometer survey in which leisure-time physical activity was assessed. It was carried out in November 2005 by request of the European Commission, Directorate-General Press and Communication Polls and covers the population of each of the 27 European Union member states aged fifteen years and older ( $N = 26688$ ). A multistage random sample design was applied in all countries and all interviews were conducted face-to-face in people's homes, in the appropriate national language. With respect to the data capture, CAPI (Computer Assisted Personal Interview) was used in those countries where that technique was available (Papacostas 2005). In each member state, at least 500 (Malta) and at most 1,557 (Germany) interviews were conducted (see Table 1). To ensure national representative samples, quotas were applied in each country according to demographic factors (gender, age, and town size) using the most recent census data. Since this Eurobarometer survey applies standardized measurements, it allows for cross-country comparisons of (the social stratification of) leisure time physical activity. Consequently, the results of this study can assist policy makers and public health experts in developing strategies for the promotion of leisure time physical activity (Rütten & Abu-Omar 2004). From a public health perspective, therefore, it is important to map out the physical activity of Europeans. Moreover, since interventions are most effective when they alter the underlying influencing variables, studying the social stratification of leisure time physical activity is an important prerequisite for designing relevant policies and effective programs (Troost et al. 2002).

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## MEASURES

The present study focuses specifically on aspects of *active* leisure time physical activity. *Passive* activity—i.e., activity performed as spectators, newspaper readers, or television viewers—will not be dealt with here. Eurobarometer 64.3 (Papacostas 2005) assesses leisure time physical activity by means of the question ‘In the last 7 days, how much physical activity did you get from recreation, sport and leisure-time activities?’ Answer categories are (i) a lot, (ii) some, (iii) little, or (iv) none. These categories are dichotomized, with respondents who answered ‘none’ defined as physically inactive in leisure time activities, and all others as physically active in leisure time activities. In this way, it is possible to distinguish totally inactive participants from active participants. To examine the social stratification of leisure time physical activity in the European Union, the above question is related to the following five background variables:

- gender: men versus women;
- age: 15- to 24-year-olds, 25- to 34-year-olds, 35- to 44-year-olds, 45- to 54-year-olds, 55- to 64-year-olds, or 65 years old and older;
- marital status: cohabiting or married, single, divorced, or widowed;
- occupation: self-employed, manager, white-collar worker, manual worker, house person, unemployed, retired, or student; and
- geographical status: living in a rural area or village, in a small- to mid-sized town, or in a large town.

## STATISTICAL ANALYSES

Since cross-national data have a specific hierarchical structure, with individuals nested within their national units, hierarchical linear modeling (HLM) and its Bernoulli model for binary outcomes is applied (Raudenbush, Bryk & Congdon 2000). The probability of event occurrence (here: leisure time physical activity) is estimated by calculation of multivariate odds ratios, which compare leisure time physical activity according to the various socio-demographic categories (Menard 2002). The analyses were performed using the HLM 6.0 software package (Raudenbush, Bryk & Congdon 2000).

Table 2 present the results of the multilevel Bernoulli analysis (a binary logistic regression analysis), estimating the probability that a European citizen is physically active in his/her leisure time. Only odds ratios and their level of statistical significance are presented because the logit coefficients are only intuitively meaningful, while odds ratios can show not only the direction of the association, but also the extent of the association. An odds ratio can be defined as the ratio of the odds of an event occurring in one group to the odds of it occurring in another group. An odds ratio of 1 indicates that the event (here: leisure time physical activity) is equally likely to happen in both categories. An odds ratio above 1 indicates that the event is more likely to happen in that category compared to the reference category. An odds ratio of less than 1 indicates that the event is less likely to happen in that category compared to the reference category.

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## FINDINGS

### THE UNCONDITIONAL MODEL

Before estimating the individual-level model, it is appropriate to ask whether in fact significant variation in the dependent variable across contextual units - here, countries - exists and, if so, what proportion of the total variance is accounted for by the country level. To gauge the magnitude of variation between countries in leisure-time physical activity it is useful to begin by estimating an unconditional or empty model, that is, a model with no predictors at either level (Snijders & Bosker 1999). The results from this unconditional model for leisure-time physical activity are presented in the upper part of Table 1. For a country with a typical leisure time physical activity rate, the expected log odds of being involved in leisure time physical activity is 0.507, corresponding to an odds of  $\exp(0.507) = 1.66$  or a probability of  $1/(1+\exp(-0.507)) = .624$ . It seems that on average, 63% of European adults indicate some sort of activity from recreation, sport, or leisure time activities in the last seven days. This implies that in 2005, almost four in ten European citizens are still inactive with regard to leisure time physical activity. In addition, the results show that statistically significant variance exists at the country level, making it clear that the multilevel nature of leisure time physical activity should not be ignored. In order to understand how much of the overall variance in leisure time physical activity is attributable to either the individual level or the country level, it is useful to calculate the intraclass correlation coefficient

(ICC).<sup>1</sup> The ICC measures the proportion of the variance of the dependent variable that exists between countries. As noted in other research (Steenbergen & Jones 2002), it is unsurprising that the individual level accounts for a great deal of the variance when data are measured at the individual level, as is the case in the present study. Nonetheless, the proportion of the variance in leisure time physical activity that exists between countries is still considerable: 6.4% (that is  $100 \times 0.227 / (0.227 + 3.29)$ )<sup>2</sup>. This variance between European member states is congruent with previous studies into leisure time physical activity in Europe (Hartmann-Tews 2006; Scheerder & Van Tuyckom 2007) and can also be seen in the lower part of Table 1. This country analysis was conducted in such a way that the EU-27 average was used as the reference category. The countries are ranked according to decreasing leisure time physical activity percentages. It shows Finland as the most active nation: more than eight out of ten Fins aged fifteen and older do some type of leisure time physical activity. Remarkably, in contrast with previous research (Scheerder & Van Tuyckom 2007) in which leisure time physical activity was assessed by means of the question ‘How often do you exercise or play sport?’ the other Scandinavian countries are not among the leaders in the present survey. Sweden (71%) and Denmark (62%) are merely in eighth and thirteenth place, respectively. Portugal and Romania are last with only four out of ten citizens being active in sports. In general, leisure time physical activity declines when moving from north to south in Europe. Citizens from more Northern locations and from Scandinavian countries exceed their continental colleagues from the Mediterranean Sea area. In addition, Eastern-Europeans generally score less well with respect to leisure time physical activity than Western-Europeans. The exceptions, however, are Slovenia and, to a lesser degree, the Czech Republic and Bulgaria.

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<sup>1</sup> The intraclass correlation coefficient for linear multilevel models is obtained by the following formula:  $\rho = \frac{\tau_{00}}{\tau_{00} + \sigma^2}$  where

$\sigma^2$  is the individual-level variance. However, in nonlinear models, such as our Bernoulli model, this formula is less useful because the individual-level variance is heteroscedastic. Snijders & Bosker (1999) describe an alternative definition of the ICC for nonlinear models as follows:  $\rho = \frac{\tau_{00}}{\tau_{00} + \pi^2/3}$ . This definition treats the dependent variable as an underlying latent continuous variable following a logistic distribution of which the variance is  $\pi^2/3$ .

<sup>2</sup> The ICC after including individual-level variables is  $\rho = \frac{0,271}{0,271 + \pi^2/3} = 0,076$

**Table 1:** Results unconditional model and country analysis of leisure time physical activity in the EU-27 (2005)

<b>Results unconditional model<sup>a</sup></b>		
<b>Intercept</b>	0.507*** (0.088)	
<b>Country-level variance</b>	0.227*** (0.477)	
<b>Intraclass correlation</b>	0.065	
<b>Country</b>	<b>Sample size</b>	<b>Leisure time physical activity (%)</b>
<b>Finland</b>	1015	81.08***
<b>Netherlands</b>	1029	77.45***
<b>Austria</b>	996	76.81***
<b>Lithuania</b>	975	75.08***
<b>Germany</b>	1550	75.03***
<b>Slovenia</b>	1025	73.17***
<b>Ireland</b>	980	72.24***
<b>Sweden</b>	1052	70.53***
<b>Latvia</b>	959	69.97***
<b>Luxembourg</b>	496	68.75**
<b>Belgium</b>	995	63.52
<b>Bulgaria</b>	975	62.56
<b>Denmark</b>	1021	62.39
<b>Czech Republic</b>	1023	61.88
<b>Italy</b>	991	61.76
<b>Slovakia</b>	1030	60.39
<b>Spain</b>	1013	60.12
<b>United Kingdom</b>	1311	57.28***
<b>Poland</b>	984	56.91***
<b>France</b>	1005	56.72***
<b>Cyprus</b>	500	54.80***
<b>Estonia</b>	985	54.62***
<b>Hungary</b>	1014	52.07***

<b>Greece</b>	1000	49.20***
<b>Malta</b>	499	46.89***
<b>Romania</b>	951	43.53***
<b>Portugal</b>	988	39.78***
<b>Total N</b>	26688	62.97

Note: \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$

<sup>a</sup> Estimates are from a Bernoulli model estimated in HLM; robust standard errors in parentheses.

## THE INDIVIDUAL-LEVEL MODEL

The estimates from the individual-level model are presented in Table 2. The results for the individual-level variables are more or less consistent with existing research into leisure time physical activity which indicates that it is socially structured. In all member states, and thus throughout the entire European Union, the degree of participation in leisure time physical activity differs between social population categories such as gender, age, urban residence, level of education, profession and marital status (Taks, Renson & Vanreusel 1998; Collins & Kay 2003; Moamouri, Brisswalter & Delignières 1999; Sugden & Tomlinson 2000; Trost et al. 2002). After controlling for the other background characteristics, our analysis shows a significant difference between European men and women. Men are 1.26 (1/0.79) times as likely to be physically active in their leisure time compared to women. With respect to age, the results show that 15- to 24-year-olds are more likely to be active than respondents in all other age categories. Moreover, the odds ratios decrease with increasing age; for example, 15- to 24-year-olds are 1.33 (1/0.75) times more likely to participate in sports compared to 25- to 34-year-olds, 1.57 (1/0.64) times compared to 35- to 44-year-olds, 1.81 (1/0.55) times compared to 45- to 54-year-olds, and 1.89 (1/0.53) times compared to 55- to 64-year-olds. Compared to individuals aged 65 or older the odds ratio even increases to 2.25 (1/0.39). In contrast with existing research, however, no significant effect is noticeable regarding marital status. With regard to occupation, students (OR = 2.17), managers (OR = 1.75), white-collar workers (OR = 1.38), and the self-employed (OR = 1.22) are more likely to be involved in leisure time physical activity compared to manual workers. However, manual workers are significantly more likely to be actively involved in leisure time physical activity than house persons (OR = 0.85), or unemployed (OR = 0.84) or retired (OR = 0.88) individuals. With respect to geographical status, the findings show that, compared to Europeans living in rural areas or villages, individuals living in large towns are more likely (OR = 1.23) to be physically active in their leisure time. Despite the popularization and democratization of leisure time physical activity, it appears that the differences assessed in previous research have remained very persistent within the European Union in 2005. Since no available theory suggests which of the individual-level variables should be set to vary randomly across countries, we allow all coefficients of individual-level variables to vary randomly at the country level to estimate a random component for each variable.

Upon examination of the right column of Table 2, it is evident that the estimates of the variance components of the random portion of the model - the randomly varying individual-level intercept, and the randomly varying

variables for gender and dummy variables for the three age groups from 45 years on, for divorced individuals, for the self-employed, managers, white-collar workers, and students, as well as for the geographical status categories of respondents living in small- or middle-sized and large towns - are significant. That is, after controlling for the individual-level factors, there still remains a significant amount of variation both in leisure time physical activity across European Union member states and in the social stratification of leisure time physical activity. This implies that in future research a model should be specified that tries to predict those varying slopes by including country-level determinants. However, this goes beyond the scope of this article.

**Table 2:** Generalized hierarchical linear modeling of leisure time physical activity among Europeans (EU-27, 2005), results of individual-level effects

Variable	Categories	Odds ratio	Random component
<b>Intercept</b>		2.893***	0.271***
<b>Level 1 variables</b>			
<b>Gender</b>	<i>men (ref. cat.)</i>		
	women	0.794***	0.041***
<b>Age category</b>	<i>15- to 24-year-olds (ref. cat.)</i>		
	25- to 34-year-olds	0.754***	0.037
	35- to 44-year-olds	0.637***	0.059
	45- to 54-year-olds	0.551***	0.158*
	55- to 64-year-olds	0.530***	0.193**
	65 years and older	0.391***	0.212**
<b>Marital status</b>	<i>cohabiting or married (ref. cat.)</i>		
	single	1.083	0.042
	divorced	0.968	0.061**
	widowed	0.679	0.039
<b>Occupation</b>	<i>manual worker (ref. cat.)</i>		
	self-employed	1.221*	0.098**
	manager	1.750***	0.070*
	white-collar worker	1.378***	0.067*
	house person	0.852*	0.060
	unemployed	0.839*	0.073
	retired	0.877	0.058
	student	2.173***	0.248*
<b>Geographical status</b>	<i>rural area or village (ref. cat.)</i>		



small- or mid-sized town	1.112	0.065***
large town	1.227**	0.061***

Note: \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$

## CONCLUSION

From a public health perspective it is important to monitor physical activity among Europeans in order to inform the development of appropriate policies and assess progress towards health targets. However, comparison of physical activity data collected from all member states is often problematic as different sampling and measurement methods are employed among the member states. The Eurobarometer survey series has been a useful instrument in overcoming this problem. Based on Eurobarometer 64.3, the current contribution is the first of its kind to present insights into *leisure time* physical activity patterns from a complete European (EU-27) perspective. Moreover, the data allow us to carry out a multilevel Bernoulli analysis so that the social stratification of leisure time physical activity can be examined. Some interesting findings emerge. First, based on the unconditional model, we find that on average 63% of European citizens are physically active during their leisure time. Therefore, the popularization of sport and other physical activities at the end of the twentieth and the beginning of the 21<sup>st</sup> century does not change the fact that in 2005, four out of ten Europeans were not exposed to physical activity in their leisure time, even by the rather broad definition of leisure time physical activity used in the 2005 Eurobarometer survey. Moreover, there is apparent variance between European member states. The country analysis shows differences between Northern- and Western-European countries on the one hand and Southern- and Eastern-European countries on the other. In general, leisure time physical activity declines when going from north to south and from west to east. Future research should include possible country-level variables that might explain this geographical variation.

Furthermore, the individual-level HLM model shows that leisure time physical activity in the EU-27 is socially stratified. The sportive leisure time behavior of European citizens aged fifteen and over differs in terms of sex, age, occupation, and geographical status. These discrepancies can be summarized as follows: (1) more European men than women take part in leisure time physical activity; (2) leisure time physical activity is proportionally related to age - increasing age, decreasing physical activity; (3) there is a higher percentage of leisure time physically actives in groups with a higher professional level; (4) individuals living in large towns take part more in leisure time physical activity than those living in rural areas or villages.

Apart from the non-effect of marital status, these findings are more or less congruent with the results from previous national and regional studies of sport participation and physical activity which have shown that in many European countries physical activity patterns are still characterized by social differences (Scheerder et al. 2002; Collins & Kay 2003; Lamprecht & Stamm 1995). Moreover, in an age of mass consumption and media communication, participation in leisure time physical activity has acquired a greater degree of differentiation. Consequently, lifestyle factors such as media preferences and television viewing habits might complement

traditional structural mechanisms like age, gender and socio-economic status and consequently should be introduced in future research. Furthermore, specifying a model where the individual effects of the social stratification variables are allowed to vary randomly across countries reveals that the above social stratification mechanisms differ between countries. In particular, the results show that effects of gender, older age groups, divorced individuals, the self-employed, managers, white-collar workers, and students as well as geographical status groups differ across European member states. Previous research on a national level has shown that in a number of Northern- and Western-European countries, the levels of leisure time physical activity for men and women have leveled out; in certain age categories women now do even more exercise and physical activity than their male counterparts. In these countries, the differences between young and old have also become less pronounced than elsewhere. The percentage of older people taking part in leisure time physical activity has risen, while the proportion of younger people taking part has stagnated or even declined (Van Bottenburg, Rijnen & Van Sterkenburg 2005). Consequently, to explain these varying slopes - in addition to explaining the geographical variation in leisure time physical activity mentioned above - future research should include country-level predictors. Leisure time physical activity within Europe, and some of the social stratification effects, might differ according to geographical indicators such as North-East-West-South country groupings, welfare indicators such as GDP per capita, human development index, etc., cultural indicators such as the type of welfare state (Heinemann 2003), policy indicators such as the type of sport policy system (Camy et al. 2004; Petry, Steinbach & Tokarski 2004; Zintz 2009).

In conclusion, the results imply that Europe still has many policy challenges to face in the field of leisure time physical activity. A European Union aiming at greater and greater integration of its citizens into the political sphere should also pay attention to optimal and equal opportunities with regard to the active participation in leisure time physical activities of its citizens. Clearly, as recently as 2005, democratization of leisure-time physical activity had still not yet been realized. The findings presented here should guide policy makers and public health experts in developing strategies for the promotion of leisure time physical activity, particularly in the subgroups of women, elderly, individuals with a lower socio-economic status, and people living in rural areas. Moreover, due to the clearly identifiable geographical patterns, it is important for European Union member states to draw up national plans in support of leisure time physical activity among the population in order to promote awareness its benefits in relation to health. These plans should take account of the customs and cultural characteristics of each country. Moreover, where separate physical activity policies exist, they should be made complementary and show the continuum from light intensity to competitive, organized leisure-time physical activity. These *Sport for All* programs should aim at encouraging participation in leisure-time physical activity for all citizens, promoting the perception that the entire population is the target (not only elite players) and that leisure time physical activity is a human right, regardless of gender, age, socio-economic status, etc. Moreover, these policies should focus less on what Coser (1974) called 'greedy institutions', referring to institutions that demand total commitment from their members such as sport clubs. Leisure time physical activity has become more informal. Whereas during the first half of the twentieth century it was still unthinkable for someone to publicly go jogging or cycling in sport clothing, by the second half of the twentieth

century it had become a completely normal phenomenon. Leisure time physical activity has also been increasingly dominated by idealistic notions of fitness and youthfulness. Consequently, there has been a huge growth in fitness-based sport, which takes place in commercial settings. The quest for good health and a slim, muscular body has gone on to play a more important role in individual self-worth and the competition for social status. This has led to other leisure time values such as sociability, and has forced the competitive dimension of sports club life into the background (Van Bottenburg, Rijnen & Van Sterkenburg 2005).

Changes in leisure time physical activity among European countries can be brought about through innovation in policy and practice as well as through increased cross-sectoral cooperation and the adoption of new roles by diverse actors who are already well established and respected in their fields of competence. For this purpose, big solutions and comprehensive, global strategies cannot and should not be provided. It is only on the basis of a large number of small changes in policy and practice that our European society may become more leisure time physical activity-friendly.

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PAPER 5: GENDER AND AGE INEQUALITIES IN REGULAR SPORT PARTICIPATION. A CROSS-NATIONAL STUDY OF 25 EUROPEAN COUNTRIES

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## INTRODUCTION

Sport participation as a component of health-enhancing physical activity is an important public health issue and the benefits of an active and sportive lifestyle in relation to well-being and health have been strongly emphasized in Europe, as well as in most of the rest of the world (Brownson et al. 2001; Cavill, Kahlmeier & Racioppi 2006; Rütten & Abu-Omar 2004; Tammelin et al. 2003). As a result, regular sporting activity is strongly recommended by many organizations for its health benefits, for example in the White Paper on a strategy for Europe on nutrition, overweight and obesity related health issues (European Commission 2007b) and the White Paper on sport (European Commission 2007c). However, despite such recommendations, fewer than 40% of adults in the Western world currently participate regularly in sport activities (Seefeldt, Malina & Clark 2002), suggesting an urgent need to implement interventions and programs promoting activity in the adult population. As a tool, although not enough recognized widely enough, the sport movement has a greater influence than any other social movement. Sport is the largest social activity in Europe, interesting citizens of all European Union member states and with an enormous potential for bringing them together (Van Tuyckom & Scheerder 2008). Over the last 30 years, the population's involvement in sporting activity has been associated with the political concept of *Sport for All*. The European Sport for All Charter, ratified in 1975, was one of the first policy initiatives of the European Council and expresses the belief that all of its members should help people into the sport system (Council of Europe 1975, 1980). *Sport for All* relates to a comprehensive sports policy which attempts to extend the beneficial effects of sport on health, social, educational and cultural development to all sections of the community. Participation in sport should no longer be the sole domain of young men from the upper classes but instead should be accessible to all people, irrespective of their age, ethnicity, gender and ability (Council of Europe 1993).

Throughout the 1980s, the *Sport for All* movement resulted in many more adults participating in sport in Europe. The 1990s and 2000s, however, are characterized by a more diversified development with both rising (Stamatakis, Ekelund & Wareham 2007), stagnating or even decreasing rates of sport participation (Heinemann 1999; Van Bottenburg, Rijnen & Van Sterkenburg 2005). Moreover, at the present time, one's social position and participation in sporting activities still seem to be connected to one another (Bourdieu 1978). In this regard, the following factors have been suggested to influence sport participation: age constraints, gender-specific norms leading to higher rates for men compared to women, opportunities or constraints originating from one's educational attainment, as well as national differences in infrastructural endowments and cultural

orientations towards sporting activity (e.g. Gruneau 1999; Lamprecht & Stamm 1995; Scheerder, Vanreusel & Taks 2005; Scheerder et al. 2002; Wilson 2002).

Generally, participation in sport seems to increase with educational attainment both as a result of the longer time period in which one has been familiarized with sport in the framework of compulsory sport lessons and as a result of better insights into the connection between sporting activity and health (Cerin & Leslie 2008; Martinez-Gonzalez et al. 2001; Plotnikoff et al. 2004). Moreover, cross-sectional studies have reported a decline in sport participation over the life-course, although there is no consensus over the specific causes (Breuer 2003; Shephard 1997; Stamm & Lamprecht 2005). In addition, gender-specific norms - for much of the history, sport was largely dominated by men - have led to lower proportions of women than men engaging in sport (DaCosta & Miragaya 2002; Hartmann-Tews & Lütken 2006; Hartmann-Tews & Pfister 2003; Scheerder, Vanreusel & Taks 2005; Scheerder et al. 2002; Wiley, Shaw & Havitz 2000). Furthermore, differing national cultural contexts might not only be a cause of differing levels of general sport participation but might also influence gender inequalities in sporting activity. For instance, women residing in Southern countries (Portugal, Greece, Italy) appear to have the greatest deficit with respect to sport participation, while the levels of female participation in Scandinavian countries (Sweden, Finland, Denmark) and the Netherlands seems to be higher than those of men (Gratton 1999; Margetts et al. 1999).

However, despite many (national) studies showing differences in sport participation according to gender and age (Breuer 2003; Caspersen, Pereira & Curran 2000; Scheerder, Vanreusel & Taks 2005; Scheerder et al. 2002; Stamm & Lamprecht 2005), to date, no research has verified gender-specific age or cohort effects from a cross-national, European perspective. Consequently, the purpose of the present study is threefold: (i) to briefly describe cross-national differences in sport participation, (ii) to determine gender inequalities across 25 European countries, and (iii) to verify the extent to which these gender inequalities vary by age. A thorough knowledge of cross-national gender differences in sport participation, and the interaction with age, is a key requirement for the planning - both at national and European level - of target group specific measures to enhance levels of adult sporting activity in the European Union.

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## DATA AND METHODS

Data for 25 European countries (Austria, Belgium, Cyprus, the 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) were extracted from Eurobarometer 62.0: Standard European Trend Questions and Sport (European Commission 2004; Soufflot de Magny 2004). This survey was carried out between October and November 2004 at the request of the European Commission, Directorate-General Press and Communication Polls and covers the population of each of the then 25 European member states aged fifteen years and older. Since we are specifically interested in the adult population, our data only comprises the population aged eighteen years and older ( $N=23909$ ). The basic sample design applied in all states is a multi-stage random probability one. In each country, a number of



sampling points was drawn with probability proportional to population size (for a total coverage of the country) and population density. To do so, the sampling points were drawn systematically from each of the 'administrative regional units', after stratification by individual unit and type of area. They consequently represent the whole territory of the countries surveyed according to the Eurostat population of the respective nationalities in terms of metropolitan, urban and rural areas. In each of the selected sampling points, a starting address was drawn at random. Further addresses (every  $N$ th address) were selected by standard 'random route' procedures from the initial address. In each household, the respondent was drawn at random, following the 'closest birthday rule'. All interviews were conducted face-to-face in people's homes, in the appropriate national language. With respect to the data capture, CAPI (Computer Assisted Personal Interview) was used (Soufflot de Magny 2004). For each country a comparison between the sample and the universe (derived from Eurostat population data or from national statistics offices) was carried out. Based on this universe description, quotas were applied in each country according to demographic factors (gender, age, region and size of locality). This way, Eurobarometer surveys ensure national representative samples. Information on the total population aged fifteen years and older as well as on the sample sizes (15+ and 18+) and sample characteristics (i.e. percentage of women included and mean age when finished full-time education as a proxy for educational attainment) are presented in Table 1.

Sport participation was assessed via the question 'How often do you exercise or play sport?' Answer categories were originally divided between (i) three times a week or more, (ii) one to two times a week, (iii) one to three times a month, (iv) less often, and (v) never. The original question is dichotomized, whereby respondents in the first two categories belong to one group (regular sport participants) and those in the other categories to another group (irregular-, occasional- and non-participants). The percentage of people reporting participating in sport regularly can be found in Table 1. Age was subdivided into the following three categories: (i) 18- to 34-year-olds (young adults), (ii) 35- to 54-year-olds (middle-aged adults), and (iii) 55 years old and older (older adults).

First, a binary logistic regression analysis was performed to estimate the probability of event occurrence (regular sport participation) by calculating the multivariate odds ratios for gender, adjusted for educational attainment and age (for results, see Table 2, model 1). Second, the analysis was stratified according to the three age categories (for results, see Table 2, model 2). For both analyses, women were the reference group for gender, and irregular, occasional and non-participants for sport participation. Binary logistic regression analysis estimates the probability that an individual is regularly active in sport. Only odds ratios are presented because the logit coefficients are only intuitively meaningful, while odds ratios can show not only the direction of the association, but also the extent of it. An odds ratio can be defined as the ratio of the odds of an event occurring in one group to the odds of it occurring in another group. An odds ratio of one indicates that the event (regular sport participation) is equally likely to happen in both categories. An odds ratio above one indicates that the event is more likely to happen in that category (men) compared to the reference category (women). An odds ratio of less than one indicates that the event is less likely to happen in that category (men) compared to the

reference category (women). Since participation in sport increases with educational attainment (see introduction), we controlled for the effect of educational attainment. All analyses are performed using the SPSS 17.0 software package and rely on an alpha level equal to 0.05. In addition, 95% confidence intervals are presented. The percentage of cases included in the analyses ranges from about 95% in Denmark to 99-100% in almost all countries.

**Table 1:** Total population, sample sizes, sample characteristics and % reporting participating in sport regularly

Country	Population 15+	Sample size 15+	Sample size 18+	% of women included (18+)	Mean age when finished FT education (18+)	% regularly participating in sport (18+)
Austria	6679444	1007	984	51.0%	16.9	32.9%
Belgium	8598982	974	931	50.6%	18.9	39.8%
Cyprus	709314	1000	480	54.6%	16.3	37.3%
Czech Republic	8571710	1075	1073	59.6%	18.0	26.4%
Denmark	4380062	1028	1006	49.0%	25.7	59.3%
Estonia	887094		950	63.8%	18.3	24.8%
Finland	4279286	1005	970	55.4%	19.9	74.2%
France	44010619	1020	986	54.5%	17.7	42.6%
Germany	64174295	1545	1491	50.4%	18.0	36.7%
Greece	8674230	1000	973	56.3%	15.5	25.0%
Hungary	8503379	1014	982	60.7%	16.4	13.4%
Ireland	3089775	1000	980	59.0%	16.9	49.2%
Italy	49208000	1020	984	60.3%	17.0	26.9%
Latvia	1394351	1005	951	60.6%	18.3	19.6%
Lithuania	2803661	1002	942	64.0%	17.4	20.1%
Luxembourg	367199	502	477	53.9%	17.6	39.4%
Malta	322917	500	484	67.8%	15.5	38.8%
Netherlands	13242328	1009	975	50.9%	19.0	48.9%

<b>Poland</b>	31610437	1000	956	56.2%	17.4	27.2%
<b>Portugal</b>	8080915	1000	971	59.0%	12.2	16.6%
<b>Slovakia</b>	4316438	1252	1239	59.6%	17.7	19.5%
<b>Slovenia</b>	1663869	1000	962	55.2%	16.9	39.1%
<b>Spain</b>	35882820	1023	986	57.0%	17.5	33.4%
<b>Sweden</b>	7376680	1000	954	50.5%	20.6	71.9%
<b>UK</b>	46371359	1310	1222	56.4%	16.7	41.3%

**Table 2:** Multivariate odds ratios for the association of gender with the probability of participating in sport regularly, adjusted for educational attainment and age (model 1), stratified according to the three age categories

<b>Country</b>	<b>Model 1</b>		<b>Model 2</b>	
	<b>Overall OR</b>	<b>OR for age 18-34</b>	<b>OR for age 35-54</b>	<b>OR for age 55+</b>
<b>Austria</b>	1.230 [0.927 – 1.631]	1.450 [0.861 – 2.445]	1.147 [0.758 – 1.735]	1.230 [0.691 – 2.191]
<b>Belgium</b>	4.442** [1.093 – 1.902]	3.173*** [1.663 – 6.055]	0.964 [0.634 – 1.465]	1.761* [1.089 – 2.848]
<b>Cyprus</b>	1.390 [0.937 – 2.063]	1.837 [0.802 – 4.208]	1.419 [0.754 – 2.669]	1.241 [0.656 – 2.349]
<b>Czech Republic</b>	1.106 [0.823 – 1.487]	1.326 [0.779 – 2.257]	0.897 [0.547 – 1.470]	1.157 [0.689 – 1.943]
<b>Denmark</b>	0.676** [0.519 – 0.881]	0.902 [0.527 – 1.547]	0.672 [0.442 – 1.022]	0.568* [0.363 – 0.887]
<b>Estonia</b>	1.136 [0.824 – 1.566]	0.882 [0.502 – 1.550]	1.391 [0.817 – 2.368]	1.143 [0.638 – 2.046]
<b>Finland</b>	0.642** [0.477 – 0.863]	0.622 [0.311 – 1.242]	0.420* [0.242 – 0.731]	0.797 [0.521 – 1.218]
<b>France</b>	1.303* [1.006 – 1.688]	1.681* [1.061 – 2.663]	1.088 [0.692 – 1.711]	1.238 [0.792 – 1.936]
<b>Germany</b>	1.127 [0.905 – 1.404]	2.412*** [1.528 – 3.807]	0.813 [0.567 – 1.165]	0.920 [0.636 – 1.331]
<b>Greece</b>	1.880*** [1.379 – 2.564]	1.749* [1.110 – 2.756]	1.339 [0.784 – 2.288]	4.580*** [2.114 – 9.924]

<b>Hungary</b>	1.121 [0.755 – 1.664]	1.771 [0.958 – 3.274]	0.774 [0.374 – 1.604]	0.812 [0.362 – 1.824]
<b>Ireland</b>	1.079 [0.822 – 1.417]	1.050 [0.608 – 1.814]	0.984 [0.631 – 1.537]	1.216 [0.781 – 1.894]
<b>Italy</b>	1.293 [0.959 – 1.743]	2.653*** [1.596 – 4.409]	0.975 [0.631 – 1.506]	0.633 [0.269 – 1.488]
<b>Latvia</b>	1.786*** [1.254 – 2.544]	2.321** [1.303 – 4.134]	1.610 [0.894 – 2.901]	1.560 [0.750 – 3.243]
<b>Lithuania</b>	1.438* [1.024 – 2.021]	2.203** [1.256 – 3.865]	2.111* [1.126 – 3.959]	0.586 [0.300 – 1.144]
<b>Luxembourg</b>	1.110 [0.751 – 1.639]	1.086 [0.482 – 2.446]	1.063 [0.584 – 1.935]	1.479 [0.726 – 3.013]
<b>Malta</b>	1.338 [0.894 – 2.002]	1.545 [0.706 – 3.380]	1.165 [0.561 – 2.419]	1.196 [0.628 – 2.278]
<b>Netherlands</b>	0.711** [0.548 – 0.922]	0.760 [0.422 – 1.369]	0.691 [0.468 – 1.018]	0.682 [0.438 – 1.063]
<b>Poland</b>	1.293 [0.945 – 1.769]	0.719 [0.426 – 1.214]	2.763*** [1.578 – 4.839]	1.121 [0.626 – 2.009]
<b>Portugal</b>	1.210 [0.837 – 1.748]	1.435 [0.789 – 2.612]	0.847 [0.456 – 1.573]	1.173 [0.521 – 2.640]
<b>Slovakia</b>	1.383* [1.021 – 1.872]	2.140** [1.291 – 3.548]	1.153 [0.734 – 1.812]	0.881 [0.420 – 1.846]
<b>Slovenia</b>	1.119 [0.845 – 1.481]	1.313 [0.783 – 2.200]	1.019 [0.632 – 1.641]	1.128 [0.705 – 1.805]
<b>Spain</b>	1.987*** [1.507 – 2.620]	2.805*** [1.747 – 4.506]	1.779* [1.077 – 2.938]	1.537 [0.939 – 2.516]
<b>Sweden</b>	0.686** [0.514 – 0.915]	0.569* [0.323 – 1.000]	0.653 [0.402 – 1.062]	0.738 [0.453 – 1.202]
<b>United Kingdom</b>	1.283* [1.009 – 1.632]	1.624* [1.027 – 2.567]	1.392 [0.936 – 2.071]	0.987 [0.655 – 1.489]

Note: \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ; women are the reference category

## RESULTS

The proportion of adult individuals indicating being regularly active in sport varies considerably between European Union countries (see Table 1). For most countries, regular sporting activity is undertaken by less than 40% of adults. Clear exceptions, however, are the Scandinavian countries of Denmark (59.3%), Sweden (71.9%) and Finland (74.2%). In general, regular sporting activity declines when moving from north to south in Europe. Citizens from more Northern locations and from Scandinavian countries exceed their continental colleagues from the Mediterranean Sea area. In addition, Eastern-Europeans generally score less well in the sporting sphere than Western-Europeans. These results are congruent with findings from previous studies into European sport participation (Hartmann-Tews 2006; Van Tuyckom & Scheerder 2010). Table 2 (model 1) presents the multivariate odds ratios (OR) for gender, adjusted for educational attainment and age. Statistically significant ( $P \leq 0.05$ ) differences in regular sporting activity by gender are observed for twelve of the 25 European countries. In Belgium, France, Greece, Latvia, Lithuania, Slovakia, Spain and the UK, a significantly higher proportion of men reports being regularly active in sport compared with women. The increased chance of regular sporting activity experienced by men from these countries ranges from a 28% increase in the UK (OR 1.283;  $p \leq .05$ ) to almost a twofold increase in Greece (OR 1.880;  $P \leq .001$ ) and Spain (OR 1.987;  $p \leq .001$ ). In Denmark (OR 0.676,  $p \leq .01$ ), the Netherlands (OR 0.711;  $p \leq .01$ ), Finland (OR 0.642;  $p \leq .01$ ) and Sweden (OR 0.686;  $p \leq .01$ ), women are significantly more likely to report regular sporting activity than men. Our results thus confirm previous findings in that women from Southern countries appear to have the lowest sport participation rates, whereas levels of female participation in Scandinavian countries and the Netherlands seem to be higher than those for men. For the other countries, no significant gender differences were found, implying overall gender equality with respect to sporting activity.

In addition, the relationship between gender and sporting activity, stratified according to the three age categories, appears to vary considerably between the countries (see Table 2, model 2). For France (OR 1.681;  $p \leq .05$ ), Latvia (OR 2.321;  $p \leq .01$ ), Slovakia (OR 2.140;  $p \leq .01$ ), and the UK (OR 1.624;  $p \leq .05$ ), men report significantly more regular sporting activity than women only in the age group of young adults (18 to 34 years old), which implies gender equality in sport participation for the middle-aged and older adults. For Lithuania (OR 2.203;  $p \leq .01$  and OR 2.111;  $p \leq .05$ ) and Spain (OR 2.805;  $p \leq .001$  and OR 1.779;  $p \leq .05$ ) more men than women participate in sport in both the young adults category and the middle-aged adults (35 to 54 years old) category, which implies gender equality in sport participation only for the older adults. For Belgium (OR 3.173;  $p \leq .001$  and OR 1.761;  $p \leq .05$ ) and Greece (OR 1.749;  $p \leq .05$  and OR 4.580;  $p \leq .001$ ) more men than women take part in sport in both the young adults category and the older adults (55 years and older) category. In these two countries, it seems that differences in sport participation are observed in the young adult years, disappear in middle age, and appear again in the older adult years. Moreover, although for Poland, Italy and Germany, no overall gender differences were found, when the results are stratified according to age, we see that in the young adult age group more men than

women seem to participate in Germany (OR 2.412;  $p \leq .001$ ) and Italy (2.653;  $p \leq .001$ ), whereas this is the case in the middle-aged group in Poland (OR 2.763;  $p \leq .001$ ). In contrast, in Sweden (OR 0.569;  $p \leq .05$ ) women report significantly more regular sporting activity than men in the young adults age category; in Finland (OR 0.420;  $p \leq .01$ ), this is the case for middle-aged adults and in Denmark (OR 0.568;  $p \leq .05$ ) for older adults. In the other age categories, there seems to be gender equality in sport participation.

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## DISCUSSION

Our results suggest that the relationship between gender and sport participation, and the extent to which this relationship is affected by age, does in fact vary by country. In the majority of cases, men report more regular sporting activity than women. In some countries (France, Germany, Italy, Latvia, Slovakia, and UK), these differences are pronounced only among the young adults age category. In other countries, these differences can also be seen among middle-aged adults (Lithuania, Spain) or older adults (Belgium, Greece). In four countries (i.e. those countries with high percentages of regular sporting activity), more women than men report regular sporting activity. In Sweden, this is more pronounced among young adults, in Finland among middle-aged adults, and in Denmark among older adults. Although no uniform conclusions can be drawn regarding the relationship between gender, age and sport participation, the results nevertheless suggest that in some European countries, the traditional male domination of sport is still deeply rooted, whereas in others (Scandinavian countries and the Netherlands), it seems to be something of the past. This implies that greater participation by women in sports will require different policy responses in the diverse European member states, some aimed at young adult women (France, Germany, Italy, Latvia, Lithuania, Slovakia, and the UK), some at middle-aged adults (Poland), some at both young and middle-aged adult women (Lithuania and Spain), and some at both young and older adult women (Belgium and Greece).

Possible explanations for these cross-national differences are manifold. First, the central organization of the sport system plays an important role in women's participation in sport. Too often, political justifications for investment in policies for sport and physical activity have shifted away from the original *Sport for All* ethos and towards a twofold focus on (i) the promotion of the 'active citizen' through social investment strategies that have children and young people as their principal target; and (ii) elite performance - that is, winning medals and trophies on the international stage (Green 2006). Neither of these two sport policy priorities has a distinct concern with 'sport as such' as envisaged by, for instance, McIntosh & Charlton (1985) in their argument that sport for sport's sake or sport as just plain fun might be a better rationale for governments attempting to encourage participation in, and enjoyment of, sport and physical activity. Nor do these priorities have much to do with the notion of 'All' in the *Sport for All* ethos. Therefore, in accordance with Green (2006), it is difficult to disagree with Houlihan's (1999: 19) conclusion that "*the policy of Sport for All has ossified, retaining at best a symbolic status of a past concerned with sport as an element of welfare*". For example, national studies have shown that countries characterized by

traditional sport structures (i.e. Greece, Italy), often aimed at seeking talents without developing organizational alternatives for mass sport, only very slowly implement a politic of social openness (i.e. *Sport for All* policy; Heinemann 2003). As a consequence, the traditional gender differences in sport participation continue longer than in other countries. Qualitative cross-national research has shown that three structural features of the sport system have been shown to be positive for the increased participation of adult women in sport: (i) special programs and actions to attract women; (ii) 'own' sport-political organizations, i.e. committees or 'own' sport clubs and sport associations; and (iii) statutory provisions, i.e. laws specifically aimed at gender equality or gender mainstreaming (Hartmann-Tews & Pfister 2003).

Second, sport policies cannot overcome gender-based inequalities in sport participation without accompanying changes at the cultural, political and societal levels (Hartmann-Tews & Rulofs 2006). Although the 25 countries are all European Union member states, the ability to overcome the traditional division of roles and gendered labour distribution differs considerably between the countries. In this regard, it is worth repeating that sport participation in the Scandinavian countries of Finland and Sweden is very high (over 70%), with more women than men participating. These countries have a social democratic welfare system, of which the universal and egalitarian idea(l)s have permeated both general as well as sport-specific policies throughout the years (Ottesen 2004). This has led to a broad diversity of sport facilities as well as private and public infrastructure, not only aimed at children and youth, but also at (female) adults and people from all social layers. Moreover, Link & Phelan (1995) state that policies reducing general social and economic inequalities (such as the social democratic welfare system reducing gender inequalities) also reduce health inequalities (such as gender inequalities in sport participation). So when analysing the gendered inclusion of sports participation, future research should definitely take general welfare state arrangements into account (Heinemann 2003). Also a country's dominant religion - with its accompanying values and norms - may indirectly exert influence on the gender order and the sport and movement culture. In this regard, Weber's work on the 'protestant ethic' is interesting in that it shines light on the fact that Protestantism has been more open to the development of sport than Catholicism, and consequently also to the inclusion of women in sport (Overman 1997).

Finally, the political will is a *conditio sine qua non* for the development of gender equality in the societal and sport system. Therefore, the European Union should continue to force all member states to institutionalize certain values, including gender equality in different societal fields such as sport, which in the context of European integration, cannot be ignored. With the coming into force of the Treaty of Lisbon on 1 December 2009, sport was incorporated into European primary law for the very first time in the history of sport. This will, for instance, enable *Sport for All* to obtain the long aspired financial support of the European Union. In addition, future European Union campaigns in the area of sport such as the 'Pierre de Coubertin' action plan (European Commission 2007a) will have legislative authorization and hence the possibility of obtaining financial support from European Union funds (Tokarski et al. 2009). In addition, the sport policy of organizations and national governments in the various



member states is only to a limited extent based on empirical insights into the key drivers for sport (non-)participation in the European Union (Van Bottenburg, Rijnen & Van Sterkenburg 2005). Therefore, cross-national comparative studies of differential inclusion in sport should be stimulated, since they can clear the way for gender equality in sport participation through gaining knowledge of the different 'good practices', in Finland and Sweden for example (Fasting et al. 1997; Ottesen 2004). The present study has contributed to the deepening of this insight.

To the best of our knowledge, no previous study on sport participation has looked at gender and age inequalities across Europe using large, representative cross-sections of the adult population. Despite this major strength, however, we should note a variety of limitations. First, our data are restricted to sport participation, and any inferences pertain only to this form of activity. Consequently, the mentioned effects can be contradictory. For example, a factor hampering women's sport participation at the cultural level may at the same time increase their propensity to become physically active in other settings, for instance during gardening or household work. Although results from a recent European study confirm this trend for women, there does not seem to be any compensation for the elderly (see Van Tuyckom & Scheerder 2010). In addition, although the Eurobarometer data were the best available, the self-reported registration of sport participation has many problems and often provides inaccurate information (Boothby 1987). Moreover, we should notice that the term 'sport' can be understood differently in different countries. The question 'How often do you exercise or play sport?' in the UK might have a different connotation as the question 'Wie oft treiben Sie Sport oder trainieren Sie?' in Germany. Methodologically, this concerns the problem of instrumental (metric or linguistic) equivalence (Hartmann-Tews & Rulofs 2006). Third, a major issue about our study concerns its reliance on cross-sectional data, which might not accurately reflect individual change in sporting activity over time. Differences that occur with respect to age can be studied either longitudinally or cross-sectionally, and each method has its disadvantages. Cross-sectional data of large population samples might be biased or suffer from cohort effects, but they can be collected in a relatively short period of time. Alternatively, longitudinal studies require arduous tracking of the same persons using constant methods over many years and are consequently very labour intensive and expensive, and might suffer from cohort emigration or other sources of attrition. In addition, persons followed over time might alter their behavior because the act of repeated monitoring may serve, inadvertently, as a stimulus for change. However, despite these limitations, several longitudinal studies of sporting activity have been successfully conducted (Anderssen, Jacobs & Sidney 1996; Scheerder et al. 2006, 2008; Van Mechelen et al. 2000) and when coupled with our own cross-sectional results, permit inferences to be drawn with increased confidence. Fourth, although the Eurobarometer-survey applies quotas according to gender, age, region and size of locality to ensure national representative samples, design weights adjusting for possible unequal selection probabilities (for example by educational attainment) are not available in the Eurobarometer series (see Saris & Kaase 1997). Fifth, another indicator of inclusion of people into the sport system could be membership in sport clubs or high school teams. Membership rates vary from country to country but the overall membership of women seems to be lower than of

men. This gender gap in sport club memberships is reported to be higher than it is in general sport participation (Hartmann-Tews & Pfister 2003), making it an interesting variable to include in future research.

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PAPER 6: *SPORT FOR ALL?* INSIGHT INTO STRATIFICATION AND COMPENSATION MECHANISMS OF SPORTING ACTIVITY IN THE EU-27

**A slightly different version of this paper is published in *Sport, Education and Society* (Van Tuyckom & Scheerder 2010).**

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INTRODUCTION

Even in Greek antiquity, a physically inactive lifestyle has been associated with health problems. For example, Hippocrates wrote that an inactive body grows slowly and is more susceptible to diseases and encourages the ageing process. However, it wasn't until halfway through the twentieth century that the relationship between physical (in)activity, fitness and health was studied on a scientific base and on a large scale. In the past decades, all kinds of authorities - national as well as international - have criticized the lack of physical activity in society and its subsequent health problems (Brownson et al., 2001; Cavill, Kahlmeier & Racioppi, 2006; Rütten & Abu-Omar 2004; Tammelin et al. 2003). Physical inactivity is associated with increased risk of chronic diseases and premature mortality (Inchley et al. 2005) and with other diseases such as hypertension, diabetes, osteoporosis, particular forms of cancer, obesity and even psychological disorders (Kafatos et al. 1999). Physical inactivity is estimated to account for about 600,000 deaths per year in the WHO's European region (Cavill, Kahlmeier & Racioppi 2006). In addition, more than half of the adult population in this region is overweight or obese, and obesity-related illnesses are estimated to account for as much as 7% of total healthcare costs in the European Union. The European Commission believes, therefore, that the European Union and its member states must take proactive steps to reverse the decline in physical activity that has occurred over the past several decades. In 2007, the Commission adopted two white papers in which the need for physical activity figures prominently. The White Paper on a *Strategy for Europe on nutrition, overweight and obesity-related health issues* (European Commission 2007a) sets out a wide range of proposals on how the European Union can tackle nutrition, overweight and obesity-related health issues. It stresses the importance of enabling consumers to make informed and healthy choices, and calls upon the food industry to work on their recipes. In addition, it also stresses the benefits of physical activity and encourages Europeans to exercise more. Moreover, this White Paper calls for more action-oriented partnerships across the European Union involving private actors and public health and consumer organisations. The need for European Union action in the area of nutrition and physical activity stems from the previously mentioned increasing prevalence of overweight and obesity, and from the low levels of physical activity in Europe. The White Paper on *Sport* (European Commission 2007b) on the other hand focuses on the societal role of sport, its economic dimension and its organisation in Europe, and on the follow-up that will be given to this initiative. This White Paper marks the first time that the Commission is addressing sport-related issues in a comprehensive and coherent

matter. It builds on a period of more than two decades during which sport has gradually become a topic on the European agenda. In preparing this White Paper, the Commission has held numerous consultations with sport stakeholders on issues of common interest as well as an on-line consultation. They have demonstrated that considerable expectations exist concerning the role of sport in Europe and European Union action in this area. Concrete proposals for further European Union action are brought together in an action plan named after Pierre de Coubertin which contains activities to be implemented or supported by the Commission. Action number 1 of this plan foresees that the Commission and the member states will develop new physical activity guidelines before the end of 2008. Consequently, an expert group (consisting of 22 independent experts) and the European Union Working Group on Sport & Health (consisting of representatives of member states) prepared a draft of the European Union physical activity guidelines. However, it should be stressed that these physical activity guidelines will not become a binding document. They should merely be perceived as a source of inspiration for the member states, regional and local authorities, sport organisations, civil society organisations and other relevant actors to define and implement policies which would make it easier for Europeans to be physically active as part of their daily lives. In these guidelines, the European Union defines physical activity as “*any bodily movement associated with muscular contraction that increases energy expenditure above resting levels*” (European Commission 2008: 3). This broad definition includes different contexts of physical activity, i.e. leisure-time physical activity or sport, occupational physical activity, physical activity from household activities and physical activity connected with self-powered transport. The present article focuses specifically on the contribution of leisure-time physical activity or sport activities.<sup>1</sup> Moreover, we compare levels of sporting activity to other forms of physical activity.

After World War II, many (West-)European countries developed a noticeably active government policy with regard to sport and physical activity. An important aim of this policy was to inspire as many citizens as possible to get involved in sportive action and to take part in physical activities. However, until the 1960s, sport participation was in large part engaged in only by young, capable and achievement-oriented males, mostly from the middle and upper social classes (Bourdieu 1979, 1991; Gruneau 1975; Loy 1969; Lüschen 1969). In 1966 the Council of Europe had already launched the *Sport for All* idea, as a result of which *Sport for All* achieved a pioneer role in the advancement of physical activity among European citizens (Husting 2003; Scheerder & Vermeersch 2007). A year later Norway was the first European nation to organise a large-scale national *Sport for All* campaign. Flanders (Belgium)<sup>2</sup> was also an important leader in the *Sport for All* promotion across Europe, launching numerous

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1 Throughout where reference is made to sport activities, it is based on the wide definition of sport agreed on by the Council of Europe: ‘Sport means all forms of physical activity which, through casual participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels.’ (Council of Europe 1993). This definition of sport extends beyond traditional team games and incorporates individual sports and fitness-related activities such as aerobics and dance, as well as recreational activities such as long walks and cycling. It extends from casual and informal participation to more serious organised club sport. For the minority it even involves complete commitment in pursuit of the highest level of excellence at world level. This wide and inclusive definition of sport extends its relevance to the whole population and its value as a significant player in the broader social agenda (Rowe et al. 2004).

2 Belgium is divided into two regions, Flanders and Wallonia, that have considerable independence. Flanders is the part of Belgium which lies to the north of the Dutch-French language border.

recreational sport campaigns in the early 1970s. These Flemish promotional initiatives were responded to and followed up at the European level. In 1975, government actions with respect to recreational sport became institutionalised in the form of the European Sport for All Charter (Council of Europe 1975, 1980). Inspired by the Universal Declaration of Human Rights, this Charter endorses the right to active sport participation for every citizen and was signed by all Council of Europe member country ministers responsible for sport.

It is evident that societal interest in sport has increased in the past decades, and that sport participation has become one of the most common forms of leisure activity. Crum (1991: 15) summarised this trend as the 'sportization of society'. However, previous research has shown that recreational sporting activity in Europe is both geographically and socially stratified (Hartmann-Tews 2006; Scheerder & Van Tuyckom 2007). First, it was found that the sport participation behavior of Europeans is geographically stratified or differentiated. In particular, there are some apparent differences between Northern- and Western-European countries on the one hand and Southern- and Eastern-European countries on the other hand. In general, sporting participation declines when going from north to south and from west to east. Furthermore, sport participation in the European Union and its member states still appears to be socially stratified according to sex, age, income, education, etc. Sociologists define social stratification as a system of social classification in which entire categories of people are ranked in a hierarchy. Individuals are assigned to different social classes and distinct statuses based upon an unequal distribution of valued resources, among which money, occupation, education, an affluent lifestyle and enjoyable recreational opportunities. Persons with a higher class standing are more likely to consume more of the things that society values than people from lower classes. Sport participation studies generally refute the idea that sport has become more democratic and egalitarian. Empirical research on a national level has revealed that participation in sport activities still reflects the social positions and social stratification patterns that exist in society (see Collins & Kay 2003; Lamprecht & Stamm 1995; Scheerder et al. 2002; Scheerder, Vanreusel & Taks 2005). These social differences can be summarised as follows: (1) more men than women take part in sport, (2) sport participation is proportional related to age - increasing age, decreasing sport participation, (3) there is a higher percentage of sport participants in groups with a higher socio-economic status (education, profession, income level), and (4) individuals living in (large) towns take part more in sport than those living in villages. To summarise, the subgroups of inactive subjects are women, elderly, individuals with a lower socio-economic status, and people living in villages.

In the present article we want to explore if the above geographical and social stratification mechanisms are at work with respect to sporting activity in the 27 European Union member states in 2005. To the authors' knowledge, it is the first in its kind focusing on stratification from a complete European Union perspective. Moreover, we want to interpret the levels of sporting activity in the light of other forms of physical activity. Sport is, as previously mentioned, just one of the means to raise physical activity levels among European citizens. Others include the following activities: (i) *occupational physical activity* including job tasks such as walking, carrying/lifting,



and other activities of similar exertion at work; (ii) *physical activity through self-powered transport* including going out to shop or bringing children to school by bike or on foot; and (iii) *household physical activity* including vacuuming/mopping, digging/planting, lifting/carrying, and other chores of similar exertion. Therefore, with respect to the social stratification of sporting activity, we hypothesise that the subgroups explained above will compensate for their sporting inactivity by being physically active in other domains. In particular, we expect that women might do household chores instead or have more physical activity through self-powered transport (see Kay 2000; Nomaguchi & Bianchi 2004). Also, elder individuals might do gardening as physical activity and people with a lower socio-economic status might have higher levels of occupational physical activity (Troost et al. 2002). Finally, subjects residing in villages might compensate for their sporting inactivity with higher levels of household physical activity (including gardening). The examination of these specific subgroups of inactive individuals is important as these groups should be specifically targeted.

To summarise, the purpose of the present study is twofold. We want to gain insight into (1) the *geographical stratification*; and (2) the *social stratification* of physical activity in the 27 European Union member states based on the most recent data available. Special attention goes to the place of sporting activity in comparison to other forms of physical activity. By doing this, we intend to develop a picture of physical activity - in particular sporting activity - within the European Union, and we intend to verify whether low sporting participation levels are counterbalanced by other pieces of the total *menu of physical activities*. The first section of this article describes the problem of comparative research into physical activity and the research material used for the analyses. In the second section, the results with respect to the geographical and social stratification of physical activity are presented. Finally, the third section discusses the results in greater detail and provides some future research and policy recommendations. The results of this study along with consensus of previous findings will strengthen public health and sport research, practice and policy aimed at targeting specific subgroups of the European population for physical activity promotion interventions and (awareness) programs.

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## DATA

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### COMPARATIVE RESEARCH INTO PHYSICAL ACTIVITY

Europe has a tradition of mapping out physical activity based on scientific research from European Union member states. This approach aimed at enhancing a stimulating sport policy both on the European Union level and on the level of the individual member states. For example, at the end of the 1970s and the beginning of the 1980s, Rodgers (1977, 1978) and Claeys (1982a, 1982b) conducted a study of the sport behavior of European citizens, commissioned by the European Council. Two decades later another European project, the COMPASS (CO-ordinated Monitoring of PArticipation in SportS) study (Gratton 1999; see also Gratton 1997; Rossi-Mori et al. 2002), showed the sport participation of seven European Union member states by means of comparable and adjusted

questionnaires. In addition to these seven countries, the COMPASS study also included twenty other countries that had data on physical activity available; however, the figures provided did not allow for cross-national comparisons.

More recently, the Dutch Mulier Institute carried out a study, commissioned by Nike Europe about active sporting activity in Europe (Van Bottenburg, Rijnen & Van Sterkenburg 2005). This study provided an overview of research into sport participation in the (formerly) 25 member states of the European Union. However, this research was based on secondary source material, so results from the various countries are not comparable. The European Commission (in particular the Directorate-General for Education and Culture), like the private initiatives mentioned earlier, conducted an examination of the sport participation and physical activity of European Union citizens by means of the Eurobarometer survey series (European Commission 2004, 2005; Papacostas 2005; Soufflot de Magny 2003). Since these surveys apply standardised measurement instruments, they do allow for cross-national comparisons between the different European union member states.

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## RESEARCH MATERIAL

Eurobarometer 64.3: Foreign Languages, Biotechnology, Organized Crime, and Health Items is the most recent Eurobarometer survey in which not only sport participation (as in European Commission 2004) but also other forms of physical activity were assessed (Papacostas 2005). It was carried out in November 2005 at the request of the European Commission, Directorate-General Press and Communication Polls and covers the population of each of the European Union member states aged fifteen years and older ( $N = 26688$ ). The survey was also conducted in Bulgaria and Romania, an interesting detail since at that time they were still preparing for accession to the European Union. A multistage random sample design was applied in all countries and all interviews were conducted face-to-face in people's homes, in the appropriate national language. With respect to the data capture, computer-assisted personal interview (CAPI) was used in those countries where that technique was available (Papacostas 2005). In each European Union member state, at least 500 (Malta) and at most 1,557 (Germany) interviews were conducted.

Eurobarometer 64.3 assesses overall physical activity in four different domains by means of the following question: 'In the last 7 days, how much physical activity did you get (1) at work; (2) when moving from place to place (self-powered transport); (3) from work in and around the house (including housework, gardening, general maintenance or caring for your family); or (4) from recreation, sport and leisure time activities?' The answer categories are (i) a lot, (ii) some, (iii) little, and (iv) none. In the present paper, the original question is dichotomised whereby respondents who answered 'none' are defined as not physically active; those who answered 'a lot', 'some' or 'little' are defined as physically active in a particular domain. This implies that no conclusions can be made with regard to the intensity or duration of physical activity. Consequently, the four resulting dichotomous

items (*occupation, transport, household, and sport*) are compared across the 27 European Union member states. In addition, they are related to the following four background variables:

*Gender*: men versus women; *Age*: (i) 15-24-year-olds, (ii) 25-34-year olds, (iii) 35-44-year-olds, (iv) 45-54-year-olds, (v) 55-64-year-olds, or (vi) 65 years old and older; *Education (age when finished)*: (i) younger than age 15, (ii) between age 15 and age 17, (iii) between age 18 and age 21, or (iv) after age 21; *Social-geographical status*: (i) living in a rural area or village, (ii) living in a small- or mid-sized town, or (iii) living in a large town

To get an initial picture of the four physical activity variables with regard to the social stratification mechanisms, several bivariate analyses were performed. The results of the analyses are presented by means of cross tabulations. Pearson  $\chi^2$ -test statistics are used to test the hypothesis of no association between columns and rows in tabular data, or in the case of this study, no association between the independent and the dependent variables. A  $\chi^2$  probability of 0.05 or less is interpreted as justification for rejecting the null hypothesis that the row variable is unrelated (that is, only randomly related) to the column variable, or for accepting the alternative hypothesis that the row and column variables - or independent and dependent variables - are related to each other.

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## RESULTS

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### GEOGRAPHICAL STRATIFICATION OF PHYSICAL ACTIVITY

Figure 1 shows the physical activity scores in the four sub-domains (sport, occupation, transport, household) for all 27 European Union member states, ranked according to their sporting activity levels. From Figure 1 it seems that on average, 61% of the European citizens aged fifteen or older indicate some sort of physical activity from recreation, sport or leisure time activities in the last seven days. Occupational physical activity is mentioned by 54% of the respondents. Nine out of ten Europeans, on the other hand, have indicated being physically active when moving from place to place and from working in and around the house.

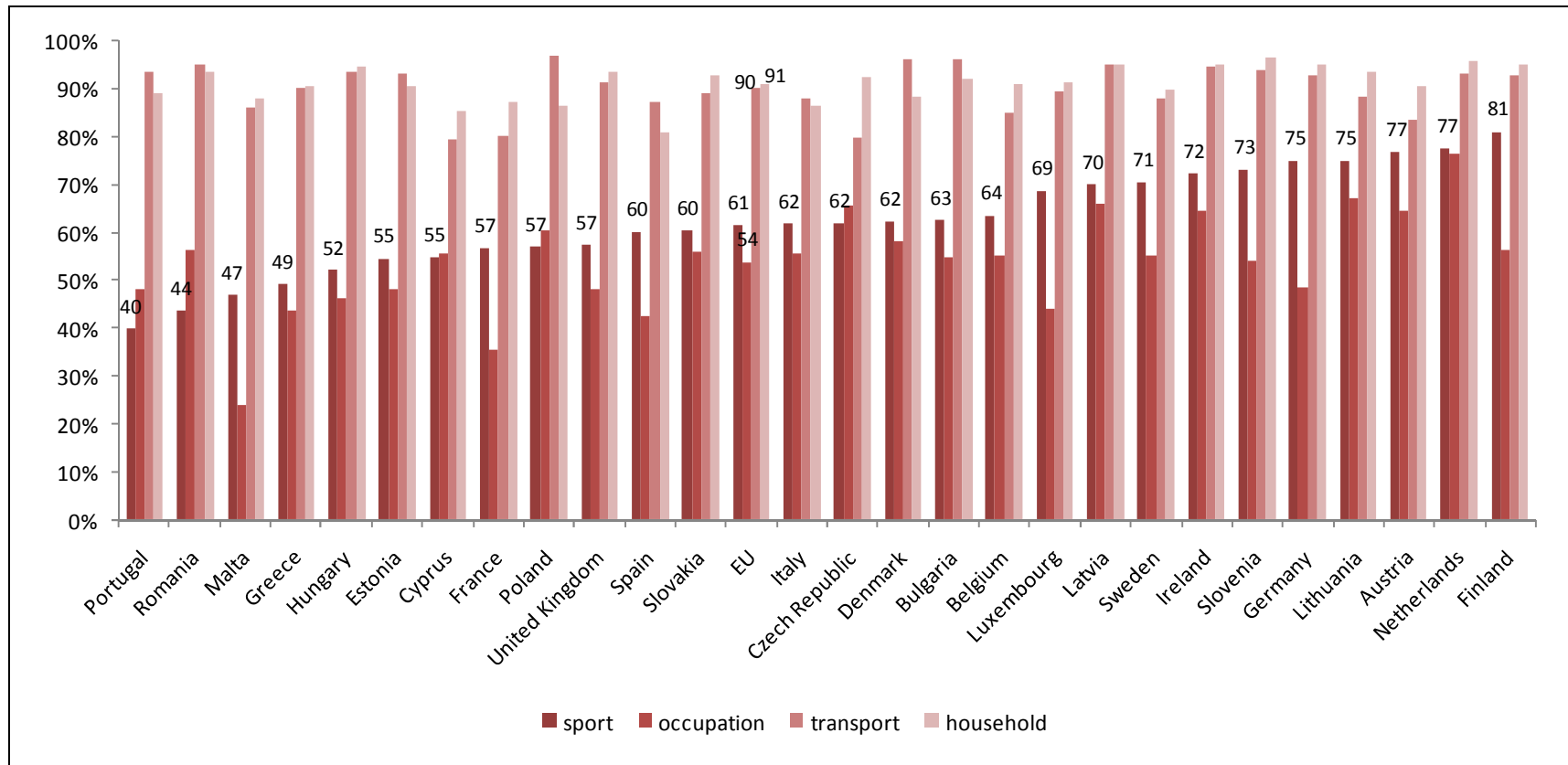
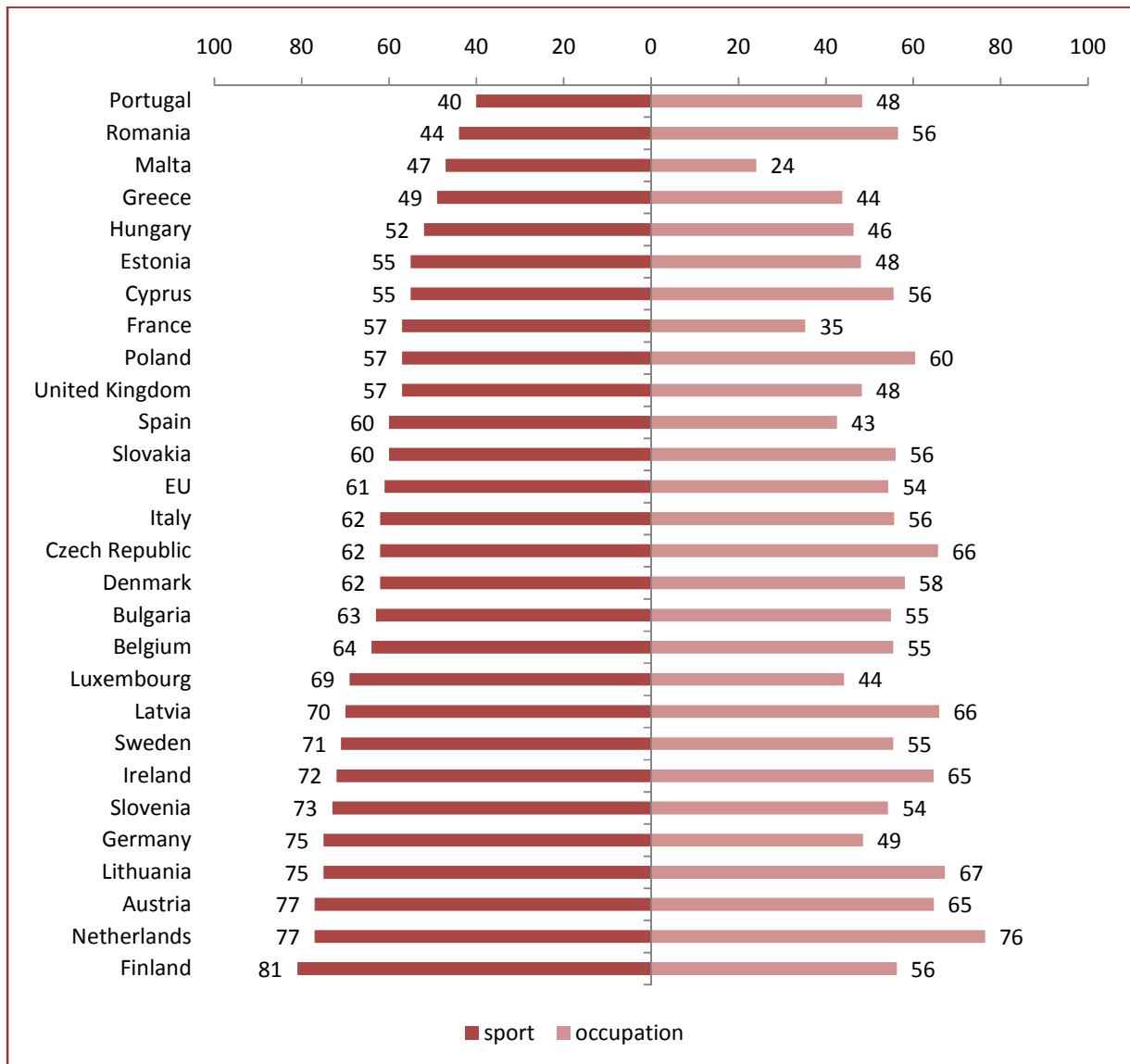


Figure 1: Physical activity in the last seven days for all 27 European Union member states (2005), percentages in function of total population

There seem to be substantial inter-country differences only in physical activity from recreation, sport or leisure time activities and occupational physical activity ( $\sigma^2_{\text{(sport)}} = 118.748$ ;  $\sigma^2_{\text{(occupation)}} = 116.676$ ;  $\sigma^2_{\text{(transport)}} = 26.649$ ;  $\sigma^2_{\text{(household)}} = 14.325$ ). This lack of variance in physical activity from self-powered transport and housework is due to the extremely high percentage of respondents who answered affirmative to these two questions. With respect to sporting activity, however, we notice striking differences between the European member states. This is congruent with results from previous studies into European Union sport participation (Hartmann-Tews 2006; Scheerder & Van Tuyckom 2007). Figure 2 shows Finland as the most active sporting nation. More than eight out of ten Fins age fifteen and older are actively engaged in sport. Remarkably, in contrast with the research from 2004 in which sporting participation was assessed by means of the question 'How often do you exercise or play sport?' the other Scandinavian countries are not among the leaders in the present survey. Sweden (71%) and Denmark (62%) are merely in eighth and thirteenth place, respectively. Portugal and Romania are last with only four out of ten citizens being active in sports. In general, sporting activity declines when moving from north to south in Europe. Citizens from more Northern locations and from Scandinavian countries exceed their continental colleagues from the Mediterranean Sea area. In addition, Eastern-Europeans generally score less well in the sportive sphere than Western-Europeans. The exceptions, however, are Slovenia and to a lesser degree the Czech Republic and Bulgaria.

As already stated, it is difficult to compare sport activity scores with those of physical activity when moving from place to place and from working in and around the house since these two variables lack inter-country differences. Consequently, Figure 2 shows the physical activity scores with respect to sport and occupation for all 27 European Union member states.



**Figure 2:** Sporting activity and occupational physical activity in the last seven days for all 27 European Union member states (2005), percentages in function of total population (Pearson  $r = 0.551$ ,  $p < .01$ )

This figure shows that the *physical activity compensation mechanism* as hypothesised in the light of social stratification is not at work here. On the contrary, it seems that countries with higher levels of sporting activity have higher levels of occupational activity as well (Pearson  $r = 0.551$ ,  $p < .01$ ). This is clearly noticeable for countries such as Lithuania, Austria and the Netherlands which have percentages of 67, 65 and 76 with respect to occupational physical activity. However, there are some exceptions. Finland for example - the 'sportive leader' - has only 56% of her citizens being physically active at work, Germany only 49%.

## SOCIAL STRATIFICATION OF PHYSICAL ACTIVITY

Table 1 presents the physical activity levels according to certain background variables. With respect to sporting activity, differences occur according to sex, age, educational level and socio-geographical status. First, more European men than women seem to be actively involved in sport. Whereas 66% of European men aged fifteen or older are active sport participants, the number decreases by 8% for their female counterparts. Second, age also seems to be a strong determinant of sporting activity in the 27 European Union member states. As age increases, sporting activity decreases. Almost 80% of the 15-24-year-old Europeans are physically active, in contrast to merely 45% of the 65-year-olds. Third, sport activity clearly increases with additional years of education. Of the European citizens who finished school after the age of 21, 69% are active in sport, in contrast to 39% of those who finished school before the age of fifteen. Finally, socio-geographical status is a determinant of sporting activity as well. Of the European citizens living in a rural area or village, 57% are active sport participants. This number increases to 63% for people living in a small- or mid-sized town, and to 66% for people living in a large town.

The above results imply that the full democratisation of sporting activity within Europe has not yet been realised. Moreover, the results are congruent with those from previous national and regional studies into sport participation which have shown that in many European countries physical activity patterns are still characterised by social differences (see Collins & Kay 2003; Lamprecht & Stamm 1995; Scheerder et al. 2002; Scheerder, Vanreusel & Taks 2005).

**Table 1:** Different forms of physical activity in the last seven days according to gender, age, educational level and socio-geographical status for all 27 European Union member states (2005), results of bivariate analyses

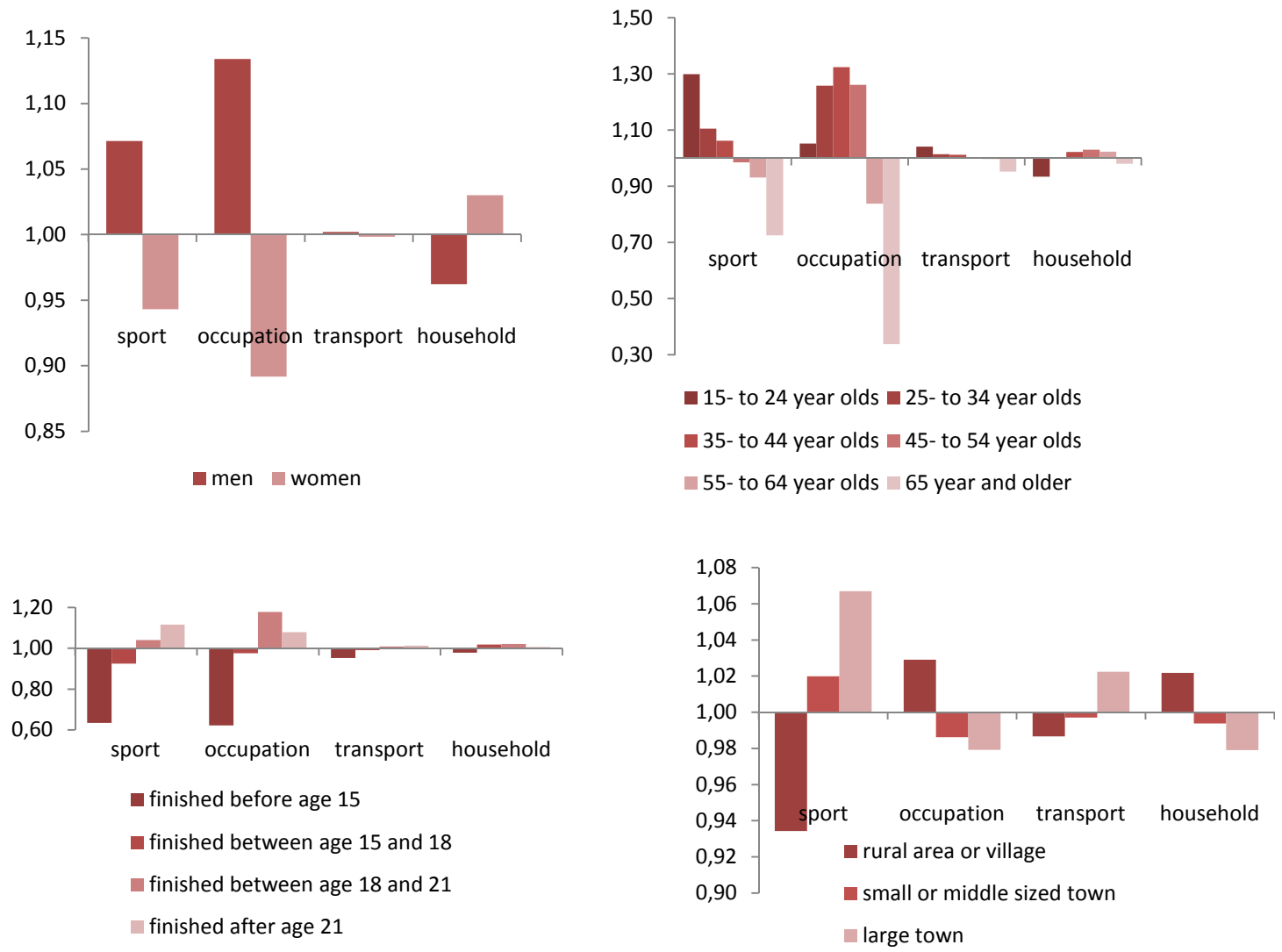
Variable	Categories	Percentages			
		sport	occupation	transport	household
	total	61.45%	53.87%	90.32%	91.20%
Gender	men	65.84%	61.09%	90.50%	87.75%
	women	57.96%	48.04%	90.18%	93.94%
Age category	15- to 24-year-olds	79.84%	56.70%	94.07%	85.20%
	25- to 34-year-olds	67.89%	67.76%	91.55%	91.51%

	35- to 44-year-olds	65.24%	71.34%	91.40%	93.22%
	45- to 54-year-olds	60.52%	67.91%	90.39%	93.94%
	55- to 64-year-olds	57.23%	45.16%	90.06%	93.28%
	65 years and older	44.54%	18.22%	86.02%	89.37%
<b>Education</b>	finished before age 15	39.02%	33.50%	86.04%	89.28%
	finished before age 18	56.79%	52.55%	89.48%	92.90%
	finished by age 21	63.94%	63.44%	91.07%	93.11%
	finished after age 21	68.62%	58.14%	91.48%	91.74%
<b>Socio-geographical status</b>	rural area or village	57.42%	55.44%	89.12%	93.18%
	small- or middle-sized town	62.67%	53.13%	90.06%	90.63%
	large town	65.57%	52.75%	92.34%	89.29%

Note: all  $p \leq .001$ , except for transport and gender  $p = n.s.$

We also hypothesised that individuals with low levels of sporting participation would compensate with other physical activities, such as household work, self-powered transport, or occupational physical activity. Figures 3(a)-(d) compare sporting activity levels to other forms of physical activity (occupation, transport and household) for different socio-economic groups. For each category, the percentage of physically actives has been divided by the total percentage of physically actives. For example, with regard to sporting activity and gender, Table 1 indicates that 65.84% of men participate in sport, compared to 57.96% of women. In total, 61.45% of the European citizens are physically active in sport. To show this difference between men and women graphically, we divide the percentages for men and women by the total percentage. This yields the following: for men,  $65.84/61.45 = 1.07$ , and for women,  $57.96/61.45 = 0.94$ . A number higher than 1 implies a percentage above the mean, a number lower than 1 implies a percentage below the mean. We replicate this procedure for all physical activities and all socio-economic groups. This way, Figures 3(a)-(d) make it possible to graphically illustrate whether physical activity compensation mechanisms are at work in the various inactive subgroups.





**Figure 3:** Different forms of physical activity in the last seven days according to (a) gender, (b) age, (c) educational level and (d) socio-geographical status for all 27 European Union member states (2005)

Figure 3(a) shows the physical activity levels according to gender. Apparently women do not seem to compensate for their lower sporting activity levels by occupational physical activity or self-powered transport. However, women do have higher scores than men with respect to household physical activity. This might be an indication of a possible compensation mechanism for women. Although sporting activity percentages are lower for women than for men, women might compensate for it through household activities such as vacuuming/mopping, digging/planting, lifting/carrying or other chores of similar exertion (Kay 2000; Nomaguchi & Bianchi 2004). Contrary to our expectation, this compensation mechanism does not hold for self-powered transport such as shopping or bringing children to school by bike or on foot. Figure 3(b) shows the physical activity levels according to age. Not surprisingly, we see high rates of occupational physical activity for the active population (from age 25 to age 54). However, in contrast to our expectation, the data give no indication of the elderly compensating for their sporting inactivity by being physically active in and around the house. In Figure 3(c) the physical activity levels are shown according to the level of education. We expected those Europeans with a lower educational level to have higher levels of occupational physical activity than those with a higher educational level (Trost et al. 2002). However, this was not the case since the data show higher levels of occupational activity (including walking, carrying/lifting and other activities of similar exertion at work) for those individuals with a higher educational level. Finally, Figure 3(d) shows the physical activity levels according to socio-geographical status. The data confirm our hypothesis and give a first indication of a possible compensation mechanism for individuals living in rural areas or villages. Although sporting activity levels are lower for rural than for urban subjects, rural individuals might compensate for it through household activities such as vacuuming/mopping, gardening/do-it-yourself work, lifting/carrying or other chores of similar exertion.

To summarise, it seems that a possible compensation mechanism for sporting inactivity occurs only in the subgroups of women and rural individuals. Their lower levels of sporting activity seem to be counterbalanced by higher levels of household physical activity. For the subgroups of elderly and individuals with a lower educational level, no indications for possible compensation mechanisms could be found.

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## DISCUSSION

In Europe, as in the rest of the world, physical activity is associated with a reduction in obesity, all-cause mortality and numerous diseases (Inchley et al. 2005; Kafatos et al. 1999). As a result, regular physical activity is strongly recommended for its health benefits by several organisations, including the European Commission (2007a, 2007b, 2008). The European Union uses a very broad definition of physical activity that includes different contexts of physical activity, among which are leisure time physical activity or sport, occupational physical activity, household physical activity and self-powered transport. However, many sports have a distinct advantage over other types of physical activity by being sufficiently physically demanding to meet the intensity required for health benefits. Therefore, the present article has paid specific attention to sporting activity and its stratification patterns, based on the most recent Eurobarometer survey covering the 27 European Union member states ( $N = 26688$ ). In addition, sporting activity has been interpreted in the light of other forms of

physical activity. The results show that on average 61% of European citizens are active in recreation, sport or leisure-time activities. This means that in 2005, four out of ten Europeans were still not exposed to sporting activity, even by the broad definition of sporting activity used in the Eurobarometer survey. Moreover, our bivariate results are entirely consistent with previous studies (Collins & Kay 2003; Lamprecht & Stamm 1995; Hartmann-Tews 2006; Scheerder & Van Tuyckom 2007) and show that sporting activity in the 27 European Union member states (2005) is geographically as well as socially stratified. This implies that particular subgroups of non-sportive citizens can be distinguished - Southern- and Eastern-Europeans on the one hand, and women, elderly, individuals with a lower educational level and rural citizens on the other hand. This empirically indicated social structuring of sport participation might be put down to a less advantageous and insufficient opportunity policy. Despite 30 years of the *Sport for All* movement, contrasts still exist in sport involvement. At the beginning of the 21<sup>st</sup> century, active involvement in sport is still related to social position and individual background characteristics. This implies that the democratization of sport practices is not yet realized. These social differences in sport participation can partly be explained by Bourdieu's (1979, 1991) field theory on habitus and taste. Bourdieu argues that classes pursue a hegemonic battle of 'classificatory struggles' whereby they seek to distinguish themselves from each other by occupation, education, and through commodities which include both objects and experiences such as sport and holidays. Together these elements create a certain 'class culture', or 'habitus' as Bourdieu terms it, which provide the basis for class reproduction and differentiation. The critical part of Bourdieu's work is that this domination remains, but it should be reconceptualised in a world of consumption, i.e. domination is now mediated by 'taste'. According to Bourdieu, sports are perceived as valued resources to express dominant social values and are consequently used as symbolic codes of taste and style (Scheerder et al. 2002). Our results indicate that the field of sport remains a 'site of symbolic struggles' between social positions. Those who are poorest in cultural capital are least likely to actively participate in sport generally. However, we hypothesized that certain compensation mechanisms would exist, namely that these specific groups would compensate for their sporting inactivity by being physically active in other domains. However, with respect to geographical stratification, no such compensation mechanisms were found. With respect to social stratification, these mechanisms did occur in the subgroups of women and rural citizens. Their lower levels of sporting activity were counterbalanced by higher levels of household physical activity, including vacuuming/mopping, digging/planting, lifting/carrying and other chores of similar exertion. For the subgroups of elderly and individuals with lower educational levels no indications for such compensation mechanisms were found.

The previously mentioned rise in obesity and decline in levels of physical activity have clear and important public health implications. The results of the present study, in particular the identification of inactive subgroups - without compensation mechanisms - within the 27 European Union member states show that there is still a huge challenge to be faced if we are to make Europe an active sporting union. In accordance with the guidance documents of the WHO, the European Union and its member states suggest that to derive a health benefit from physical activity it needs to be of at least moderate intensity for at least 30 minutes a day and five days a week (European Commission 2008). However, outside of sporting activity, the opportunities to promote other

types of physical activities are rather limited. Household physical activity and physical activity through self-powered transport were mentioned by nine out of ten Europeans already. However, based on these results, no conclusions can be made with regard to the intensity or duration of activity. Moreover, we need comprehensive knowledge of the underlying structure of the possible compensation mechanisms for women and rural citizens. After all, demographics and many cultural drivers are pushing us towards a more sedentary rather than a more active sporting lifestyle union. An increase in elderly citizens, and a decrease in activity derived through housework and self-powered transport are just two examples. In addition, it is difficult to envisage public intervention policies aimed specifically at promoting gardening or do-it-yourself tasks. Occupational physical activity was indicated by 54% of the respondents, so theoretically there might be room for improvement. However, here again the trend for physically demanding jobs is decreasing. Moreover, apart from using the stairs instead of the elevator, or from jogging during lunch time, it sounds rather ridiculous to formulate government recommendations aimed at increasing the physical burden of jobs. Therefore, we suggest the important contribution of sport to health primarily through the extent to which it contributes towards increasing physical activity, although there is also evidence to suggest that the social engagement aspects of sport are beneficial in their own right. However, from a health perspective, sensitization campaigns should not only focus on traditional channels such as sport clubs, but also on other - not-competitive - forms of physical activity, such as recreational jogging or cycling groups.

One of the major limitations of the present study is that the Eurobarometer questionnaire does not allow us to distinguish between different forms of household work, self-powered transport, or occupational activity. It might be possible that for elderly a compensation mechanism is at work with respect to gardening but not to vacuuming and mopping. Unfortunately, these subtle differences could not be scrutinized within the present survey. Furthermore, it is difficult to adequately compare the findings in this study with other studies due to different operationalisations of the different forms of physical activity. For example, in comparison to several national studies, the present Eurobarometer-survey uses a very broad definition of sporting activity, namely 'physical activity from recreation, sport and leisure time activities' with relatively high sporting percentages as a result. Moreover, the data from this study are limited by the lack of assessment of the exact time spent on sporting activity, physical activity through self-powered transport, household and occupational physical activity. As already mentioned, the percentages tell us nothing about the *intensity* of activity. Only subjects who referred having a total lack of physical activity were defined as inactive. However, it must be kept in mind that a high proportion of the people who perform any of the forms of physical activity do not consider it as 'regular' physical activity. This yields an overestimation of the total percentage of subjects being physically engaged. In addition, although the sample size and sampling strategy should provide information that reflects the situation in each country and across Europe, the cross-sectional design used limits the causal inferences that can be drawn from the data, trends and associations should be interpreted with caution. In addition, there might have been some variation between countries in how respondents understood what was covered by the different forms of physical activity. Among researchers there has been a lack of clarity as to what is meant by

sport and physical activity (see Gratton 1999), and this might be confusing for the general public as well. In addition, with a reference period of seven days, weather influences might give some bias in the results.

Nevertheless, the present article is the first of its kind to explore the geographical and social stratification of physical activities - based on the most recent large-scale survey available - from a complete European Union perspective and with reference to other forms of physical activity. Moreover, the strength of this article based on Eurobarometer data lies in its relative, not in its absolute character. However, additional (multivariate) quantitative and qualitative research is necessary to understand the underlying structure behind the possible compensation mechanisms found for women and rural subjects. For example, whether or not compensation mechanisms differ across European Union member states should be further explored, as well as whether those for women differ according to age, or whether those for rural individuals differ according to gender or age, etc. Moreover, since the geographical stratification of sporting activity could not be explained by the menu of physical activities, future research should include some country characteristics such as the Human Development Index (HDI), GDP per capita, etc., as well as policy-related variables such as the type of welfare state (Heinemann 2003) and the type of sport policy system (Camy et al. 2004; Petry et al. 2004) to explain the geographical variations in sporting activity across European member states.

Because of the previously mentioned high levels of household physical activity and self-powered transport and societal trends towards an inactive society, sporting activity needs to play an important role in the future for *all* inactive subgroups. After all, in order to achieve their proposed target, the European Union will need to get those who are currently doing some *compensational physical activity* to do some or more sporting activity. In addition, they will need to convert a large number of people who do not compensate for their sporting inactivity at all into regular sport participants. For this purpose, necessary resources and key stakeholders not only need to be identified, but more importantly the social and environmental barriers for sport participation need to be addressed, in particular with regard to the identified subgroups of sporting inactive citizens (European Commission 2008).

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## CHAPTER 4: CLASSIFICATION

### PAPER 7: SIX SPORTING WORLDS. A CLUSTER ANALYSIS OF SPORT PARTICIPATION IN THE EU-25

**A slightly different version of this paper is forthcoming in *Quality & Quantity* (Van Tuyckom 2012).**

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#### INTRODUCTION

There is growing interest in inequalities in health status within and between member states of the European Union (European Commission 2003). Much attention goes thereby to cross-national differences with respect to life expectancy, morbidity, (premature) mortality and disablement (Day, Pearce & Dorling 2008; Murray et al. 2006; Ruger & Kim 2008; Shelton, Birkin & Dorling 2006). However, also behavior-related risk factors such as tobacco smoking, alcohol consumption, drug abuse, inadequate diet, sexual behaviors and (lack of) physical activity should be taken into account. In the present article, special attention goes to this last factor. Physical activity is a fundamental means of improving physical as well as mental health. Unfortunately, for many people it has been removed from everyday life, with dramatic consequences for health and well-being (Cavill, Kahlmeier & Racioppi 2006).

As a tool for health-enhancing physical activity (HEPA), although not enough recognized, the sport movement has a greater influence than every other movement. Sport is an area of human activity that greatly interests citizens of all over the European Union and has enormous potential for bringing them together, reaching out to all, regardless of age, gender or social origin (Van Tuyckom & Scheerder 2008). Over the last 30 years, the Council of Europe has been active in promoting participation in sport. The Sport for All Charter, ratified in 1975 by the then ten members, was one of the first policy initiatives of the Council of Europe. *Sport for All* relates to a comprehensive sport policy which attempts to extend the beneficial effect of sport on health, social, educational and cultural development to *all* sections of the community (Council of Europe 1975, 1980). Whereas in North America, the term 'sport' is generally used to refer to physical activity that is governed, structured and competitive, the central idea of *Sport for All* in the European Charter includes not only sport as such, but also and especially multiple forms of recreational physical activities - or leisure time physical activity as opposed to occupational physical activity - (Hartmann-Tews 2006; Van Tuyckom & Scheerder 2010).

However, structural formation and modification of the sport system proceeded at different rates and in different directions. Consequently, the above idea of *Sport for All* is differently reflected in the participation profiles of the different European Union member states (Houlihan 1997; Petry, Steinbach & Tokarski 2004; Tokarski et al. 2004). The aim of this article is not to gain understanding of the social processes which lie behind these general trends (see therefore Hartmann-Tews 1996 among others), but instead to give a clear view of this international variation in sport participation.

When (policy) researchers want to compare these differences in sport participation between European countries, nations are often placed in traditional groupings, based on for instance proximity or population size (Day, Pearce & Dorling 2008). As such, Belgium is often compared with the Netherlands (Scheerder & Breedveld 2004), Germany with France (Hartmann-Tews 1996), Portugal with Spain (Marivoet 2002), and so on. Others view cross-national differentiation in sport participation from a broader historical framework, referring to the history of 'national physical cultures' from the end of the nineteenth century onwards - e.g. Nordic, British, Mediterranean or Germanic culture - (Elias & Dunning 1986; Guttmann 1996; Mandell 1984).

However, the question is whether these groups of nations based on traditional parameters or historical national physical cultures are *nowadays* still the most comparable as far as sports participation is concerned? In a recent report, Camy and colleagues (2004) tried to update the above mentioned classifications by identifying four main 'configurations' (see Elias 1970) that *current* national sport systems can take within the European Union: (i) the *bureaucratic configuration* - comprising Belgium, Cyprus, Czech Republic, Estonia, Finland, France, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Slovakia, Slovenia, and Spain - characterized by the active role of public authorities in regulating the system; (ii) the *missionary configuration* - comprising Austria, Denmark, Germany, Italy, Luxembourg and Sweden - characterized by the dominant presence of a voluntary sports movement with autonomy to make decisions; (iii) the *entrepreneurial configuration* - comprising Ireland and the United Kingdom - characterized by the regulation of the system arising from the social/economic 'demand' for sport; and (iv) the *social configuration* - only comprising the Netherlands - characterized by the presence of social partners within a multi-faceted system.

However, when looking at recent studies on sport participation from a European, cross-national perspective (Hartmann-Tews 2006; Van Tuyckom & Scheerder 2008), Camy's configurations based on current sports systems do not seem very applicable. For example, the United Kingdom and Ireland seem to score very differently with regard to sport participation, as do Italy and Sweden or Portugal and Lithuania (European Commission 2005; Van Tuyckom & Scheerder 2008). But what countries should then be compared with each other? To answer this question, nations should be grouped independently of any presumed association to identify those that appear to be the most comparable in some self-determining way. In the present article, we seek to show the extent to which such a view of European sporting differences governed by sport systems or historical and geographical constructs of nations may actually be misplaced when we instead group countries by their actual sport participation outcomes.

Novel approaches to country classification using cluster techniques have only recently started to emerge in the study of global health inequalities (Day, Pearce & Dorling 2008; Ruger & Kim 2006; see also Shelton, Birkin & Dorling 2006). However, there are only few studies of this kind and as previously mentioned, they consider predominantly factors such as life expectancy, morbidity, and (premature) mortality. Moreover, there is no single study exploring cross-national differences in sport participation using clustering techniques. A study such as the present one does not place nations into preconceived categories, but instead attempts to show how the European Union appears when classified by sport participation outcomes, if the outcomes themselves are used to group the nations. We utilize two separate indicators of sport participation, one referring to the organizational context and one referring to the intensity of sport participation.

With the availability of sport participation data for 25 European member states for the year 2004, it was possible to undertake a cluster analysis of sport participation measures to identify what transpired to be six sporting clusters, defined here as the 'six sporting worlds', each consisting of countries that are broadly homogeneous in terms of organizational context and sporting intensity. These sporting worlds are a novel structured representation of European differences in sport participation. Next, we clarify the data used, then we explain how the clusters were derived and describe each of them. We end by discussing the results.

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## DATA AND METHODS

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### DATA

Within the European Union member states, surveys on sport are generally developed and conducted independently of one another, which has led to differences in questionnaires, research designs, methodology and definition of terms. Such disparities render the comparison of research results problematic. Even within a single year, research conducted in one and the same country can result in significant differences in the recorded figures for sport participation to up to 40 percent (Hartmann-Tews 1996). Various factors play a role in this: the description and definition of the notions of sport and physical activity, the interview method, the sample size, the period of reference, the use of a prompt card, the number of sports mentioned and their wording, the nature of questions about the frequency, duration and intensity of the activity, and so on (Gratton 1999). In contrast, on a Europe-wide level, the Eurobarometer surveys apply standardised measurement instruments - asking the same question in all European Union countries -, which allow for cross-national comparisons between the different European member states. In particular, data regarding both the organizational context and the intensity of sport participation for 25 European member states were extracted from Eurobarometer 62.0: Standard European Trend Questions and Sport (European Commission 2004; Soufflot de Magny 2004). This survey was carried out between October and November 2004 at the request of the European Commission, Directorate-General Press and Communication Polls and covers the population of each of the then 25 European member states aged fifteen years and older ( $N=24791$ ). A multistage random sample design was applied in all countries, and all interviews were conducted face-to-face in people's homes, in the appropriate language. With respect to the data capture, CAPI (Computer Assisted Personal Interview)

was used in those countries where that technique was available. In each member state, at least 500 (Malta) and at most 1310 (United Kingdom) interviews were conducted. In each country, the intensity of sport participation was assessed by means of the question 'How often do you exercise or play sport?' Answer categories were divided between (i) very active in sports (i.e. three times a week or more), (ii) active in sports (i.e. one to two times a week; one to three times a month), and (iii) not to little active in sports (i.e. less often; never). With respect to the organizational context of sport participation, the respondents could choose between (i) fitness center, (ii) club, (iii) sports center, (iv) school/university, (v) elsewhere (which means outside of any structured organizational framework). Unfortunately however, only one answer could be marked and only the organizational context of the most played sport has been taken into account. To obtain indicators of both the intensity and organizational context of sports participation on a national level, the above-mentioned individual level data has been aggregated.

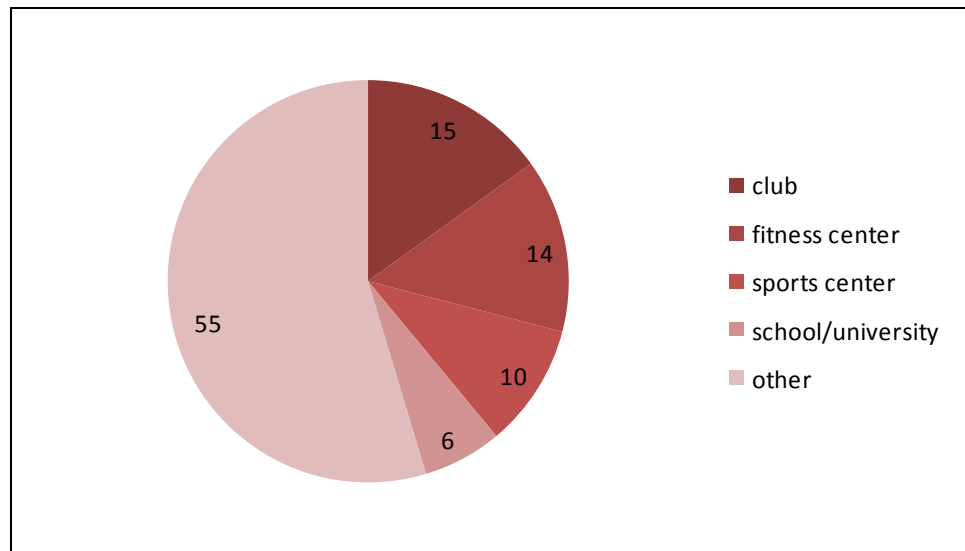
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## CLUSTER ANALYSIS

Cluster analysis measures the distance between cases on the basis of a combination of predetermined selection criteria (here: organizational context and intensity of sport participation). This distance is consequently used to identify groups of cases within which there is considerable homogeneity and between which there are clear boundaries (Aldenderfer & Blashfield 1984; Everitt, Landau & Leese 2001). Despite being a longstanding strand within the comparative social policy literature and having many obvious benefits for the classification of 'welfare regimes' (see Bambra 2004; Esping-Andersen 1990, 1999; Ferrera 1996; Korpi 2000 among others), surprisingly, it has never been applied to cross-national data on sport participation. Therefore, in this article we would like to analyze whether different sporting typologies exist within the European Union, thereby applying the clustering method.

Two forms of cluster analysis are commonly used: hierarchical cluster analysis and K-means cluster analysis (Aldenderfer & Blashfield 1984; Everitt, Landau & Leese 2001; Gough 2001). Hierarchical cluster analysis is the simplest technique. It locates the closest pair of countries (usually based on the squared Euclidean distance) and combines them to form a cluster. This algorithm proceeds one step at a time, joining pairs of countries, pairs of clusters or a country with a cluster, and continues until all cases are in one cluster. This method is called hierarchical because once countries are joined in a cluster, they remain joined throughout the rest of the analysis (Aldenderfer & Blashfield 1984; Everitt, Landau & Leese 2001; Gough 2001). In this way, the clusters emerge from the data, facilitating the emergence of sporting typologies. However, since hierarchical cluster analysis is rather a-theoretical, it is often conducted alongside K-means cluster analysis which permits the recombination of countries and clusters over repeated iterations. It requires the a priori specification of the number of clusters ( $k$ ) to be formed. The clustering begins by using the values of the first  $n$  cases as temporary estimates of the  $k$  cluster means. Initial cluster centers form by assigning each case in turn to the cluster with the closest center and consequently updating the center until the final cluster centers are identified. At each step, cases are grouped into the cluster with the closest center, then the centers are recomputed, and so on until no further change occurs in the centers (Aldenderfer & Blashfield 1984; Everitt, Landau & Leese 2001;

Gough 2001). All calculations in this article used squared Euclidean distance ( $d_{ij} = \sqrt{\sum_{k=1}^K (X_{ik} - X_{jk})^2}$ ) and standardized versions of the sporting context and -intensity variables. All analyses were carried out using SPSS version 17.0.



**Figure 1:** Organizational context of sport participation within the European Union, in percentage of sport participants

## RESULTS

Participation in sport in Europe has reached high levels. In particular, the 2004 Eurobarometer survey shows that 60% (or approximately 271 million) of the inhabitants of the 25 European Union member states stated that they participated in sport or exercise every so often. Of course, the downside is that 40% of the European population indicated that they never exercise or participate in sport at all. Moreover, the percentage of the European population doing exercise or sport falls sharply if one focuses on a regular or intensive sport participation level; only around one in six Europeans participates in sport intensively. Additionally, Figure 1 shows that throughout the European Union, fitness centers are nearly as popular as sport clubs. Of all the Europeans who participate in sport and exercise, 15% (or approximately 70 million) did so mainly at sport clubs, 14% in fitness centers and 10% in sport centers. Schools or universities provided a setting where only 6% generally played their sport. The rest, and that is more than half of all participants in sport, said that they did their exercise or sport elsewhere, this is, outside of any structured organizational framework.

The results of the hierarchical cluster analysis are shown in the proximity matrix (Table 1) and the first dendrogram (Figure 2). The proximity matrix reveals the distances between the countries when they are clustered using the different organizational context and sporting intensity measures. Table 1 shows that certain countries are closely located and quickly clustered to one another. For example, Belgium and respectively Ireland, France and Luxembourg are less than 1.5 in distance from one another, which suggests that these

countries are more similar in terms of the sport participation measures. Other countries are clearly more separate from one another. For example Finland and Portugal are 48.5 away from each other, Finland and Italy are even 61.2 apart. Perhaps most notably, is that the proximity matrix reveals that the pairings of Finland and Sweden, and Portugal, Italy and Greece are very distant from the other countries. Sweden and Finland are 6.0 away from one another, but they are much more distant from the other countries. Aside from Finland, the country closest to Sweden is Ireland, at a distance of 11.7, and Denmark at a distance of 13.2. Similarly, Portugal, Greece and Italy are close to each other and more distant from the other countries. These two pairings represent the extremes of the proximity matrix, as they are most distant from one another: Finland is 43.5 away from Greece, 48.5 from Portugal and 61.2 from Italy. The distance between Sweden and respectively Greece, Portugal and Italy is 29.0, 37.3 and 42.6.

The dendrogram (Figure 2) also highlights the separation of Sweden and Finland, and Greece, Portugal and Italy from the other countries. They do not combine with any of the other countries or clusters until a later stage of the combination process. The graphical presentation of the dendrogram also suggests - off course this is debatable since it is a subjective decision - that the hierarchical analysis of sport participation produces a typology of six sporting clusters (four broader clusters plus the two before mentioned outlying pairs). The largest cluster consists of Belgium, Luxembourg, Germany, Ireland and France, which are later joined by the pairing of Austria and the UK. The second largest cluster starts with the combination of the Czech Republic, Estonia, Slovakia and Spain, and is later combined with Lithuania, Poland, Hungary and Latvia. Cluster three consists of Cyprus, Malta and Slovenia, and cluster four of Denmark and the Netherlands. The fifth cluster consists of the pairing of Finland and Sweden, and the final cluster is that of Greece, Portugal and Italy. Interestingly, when the hierarchical analysis is rerun omitting the cases of Finland, Sweden, Greece, Portugal and Italy, the four other clusters remain fairly static (Figure 3). This reinforces the fact that in the analysis of all 21 countries, the five cases (Finland, Sweden, Greece, Portugal, Italy) are very distant from the others, but it also suggests that they are not overly influencing the nature of the other clusters.

Chapter 4: Classification

**Table 1:** Hierarchical cluster analysis proximity matrix (squared Euclidian distance)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
<b>1.Belgium</b>																									
<b>2.Denmark</b>	4,6																								
<b>3.Germany</b>	2,4	7,5																							
<b>4.Greece</b>	19,2	31,2	23,1																						
<b>5.Spain</b>	8,9	19,9	16,8	7,4																					
<b>6.Finland</b>	15,7	11,5	19,3	43,5	26,5																				
<b>7.France</b>	1,2	5,2	4,1	27,2	12,3	14,3																			
<b>8.Ireland</b>	1,3	4,4	3,5	17,7	9,0	10,3	3,2																		
<b>9.Italy</b>	28,9	40,1	41,6	12,0	11,1	61,2	36,6	31,5																	
<b>10.Luxembourg</b>	0,7	6,9	3,5	13,0	5,4	17,0	2,8	1,4	23,5																
<b>11.Netherlands</b>	6,1	4,1	9,5	26,9	19,4	26,3	9,5	8,2	29,0	8,0															
<b>12.Austria</b>	2,4	7,2	4,4	14,2	9,5	23,7	6,0	4,6	21,7	2,1	4,7														
<b>13.Portugal</b>	15,7	30,7	18,7	2,5	7,1	48,5	22,3	17,1	12,7	10,7	24,2	11,7													
<b>14.Sweden</b>	16,6	13,2	21,6	29,0	19,9	6,0	18,4	11,7	42,6	15,4	24,1	17,9	37,3												
<b>15.UK</b>	5,0	10,4	12,4	9,9	2,3	20,5	8,1	5,5	12,3	3,0	10,2	4,5	10,2	13,4											
<b>16.Cyprus</b>	12,8	24,4	13,6	15,8	10,4	18,9	14,1	9,5	40,4	9,4	33,3	17,9	16,3	19,0	14,1										
<b>17.Czech Rep</b>	4,2	16,1	9,4	13,6	3,3	28,3	6,4	7,1	17,3	2,9	13,7	5,5	8,5	26,0	4,4	13,1									
<b>18.Estonia</b>	4,7	15,4	6,5	16,7	8,6	27,3	4,8	7,7	29,6	3,6	17,7	7,2	10,7	26,3	8,3	9,0	4,4								
<b>19.Hungary</b>	17,5	37,1	19,2	18,6	12,5	45,5	17,9	20,7	34,7	13,9	38,9	20,6	11,1	43,5	18,7	10,0	9,9	5,1							
<b>20.Latvia</b>	15,6	26,4	19,1	25,4	17,6	45,2	14,1	20,3	35,8	14,0	28,3	19,3	16,8	44,6	17,6	20,3	14,0	5,2	8,7						





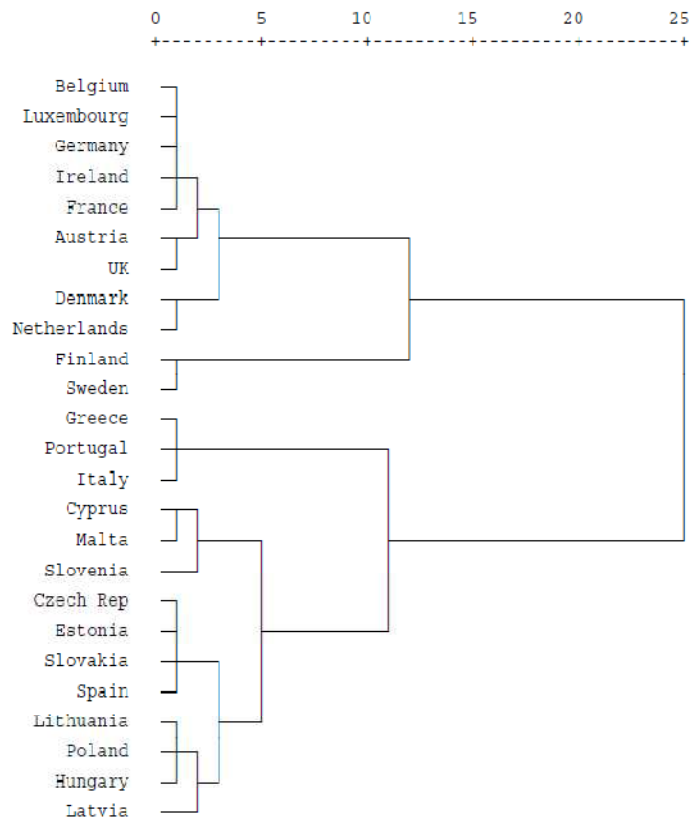


Figure 2: Hierarchical cluster analysis dendrogram (25 countries)

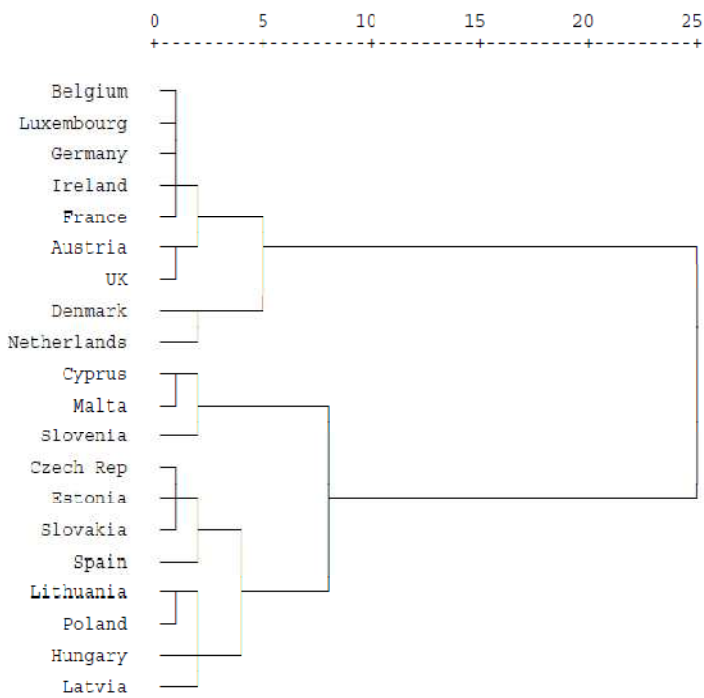


Figure 3: Hierarchical cluster analysis dendrogram (19 countries; omitting Finland, Sweden, Greece, Portugal and Italy)

The K-means cluster analysis (Table 2) is used to examine further the six-fold typology produced by the hierarchical cluster analysis. Overall, the clusters very closely resemble those produced by the hierarchical analysis. For example, Finland and Sweden are again together in one cluster (cluster 6), as well as Greece, Italy and Portugal (cluster 1), Slovenia, Malta and Cyprus (cluster 3) and Hungary, Latvia, Lithuania and Poland (cluster 4). However, the largest cluster identified by the hierarchical analysis does not remain intact in the K-means analysis. Table 2 shows that Denmark, the Netherlands and Austria fall apart into a separate cluster (cluster 2). The cluster with the Czech Republic, Estonia, Slovakia and Spain in the hierarchical analysis joins the largest cluster in the K-means analysis (cluster 5). This means that there are actually seven countries with different cluster memberships under the K-means analysis than that found in the hierarchical analysis: on the one hand the Netherlands, Denmark, Austria, and on the other hand the Czech Republic, Estonia, Slovakia and Spain.

Apart from providing support for the existence of a six-fold sporting typology in Europe, the K-means analysis also provides other useful information about the clusters, as an examination of the distances between countries and the five cluster centers shows that some cases form the basis of a particular cluster, whilst others are less closely identified with it. Countries rather central to a cluster are: Lithuania (distance from center: 0.53) in cluster four, Malta (0.88) in cluster three, and Belgium (0.99) and Luxembourg (0.45) in cluster five. Other countries are less closely associated with the cluster in which they end up, for instance Germany (2.07) and Spain (2.14) in cluster five, and Italy (2.28) in cluster one. This suggests that some countries are harder to classify than others and that their cluster membership is more fluid. It also suggests that certain core countries are fundamentally different from one another in terms of sporting typology and therefore form the basis of distinct clusters.

**Table 2:** Results K-means clustering

cluster	Country	distance
1	Greece	1,34
	Italy	2,28
	Portugal	1,43
2	Denmark	1,41
	Netherlands	1,07
	Austria	1,48
3	Slovenia	1,71
	Malta	0,88
	Cyprus	1,32
4	Hungary	1,53
	Latvia	1,77
	Lithuania	0,53

	Poland	1,28
5	Belgium	0,99
	Germany	2,07
	Spain	2,14
	France	1,63
	Ireland	1,51
	Luxembourg	0,45
	UK	1,75
	Czech Rep	1,36
	Estonia	1,60
	Slovakia	1,77
6	Finland	1,22
	Sweden	1,22

Table 3 shows the final cluster centers and how each of the sporting typology measures contribute to discrimination between the clusters. The F-statistic is calculated using analysis of variance and shows which of these measures contributes the most to discriminating between the six clusters. The larger the F-statistic, the larger the discriminating power of the variable. For example, in cluster 1 there is a clear positive influence from fitness centre and not to average active in sport (*non to average fitness sporting countries*). In cluster 2 there is a clear positive influence of club membership as well as from active participation in sport (*active club sporting countries*). In cluster 3, there is on the one hand a clear negative influence of club membership but on the other hand a positive influence of sporting in another context (*average non-organized sporting countries*). In cluster 4, there is a clear positive influence of school/university and not to average active in sport (*average school sporting countries*). In cluster 5, there are no clear influences of the organizational context and intensity variables (*active multi-context sporting countries*). In cluster 6, there is a clear negative influence of not to average active in sport and a clear positive one of very active in sports (*very active sporting countries*). The sport centre context variable contributed the least to discriminating between the clusters ( $F=1.90$ ).

Table 4 shows the distances between the final cluster centers and thereby indicates the extent to which they are similar or different from one another. In our six-fold typology, it seems that clusters three (Slovenia, Malta, Cyprus) and five (Belgium, Germany, France, etc.) are the most similar to one another (2.52). In accordance with our expectations, the two most distant clusters are one (Greece, Italy, Portugal) and six (Finland and Sweden), at a distance of 6.26.

**Table 3:** K-means final cluster centers (z-scores)

	Organizational context					Sporting intensity		
	club	fitness centre	sports centre	school/university	other context	not to average active	active	very active
<b>Cluster 1</b>	-0,58	2,03	1,36	-0,25	-1,63	0,97	-0,88	-0,79
<b>Cluster 2</b>	1,65	0,10	-0,13	-0,63	-0,97	-0,81	1,45	-0,01
<b>Cluster 3</b>	-1,15	-0,44	-0,60	-0,08	1,51	-0,03	-0,60	0,60
<b>Cluster 4</b>	-0,64	-1,01	-0,38	1,98	0,49	0,97	-0,99	-0,68
<b>Cluster 5</b>	0,37	-0,18	0,08	-0,33	-0,01	0,04	0,12	-0,17
<b>Cluster 6</b>	-0,48	0,38	-0,57	-0,87	0,71	-2,32	1,43	2,49
<b>F</b>	8.56	10.50	1.90	17.57	16.84	15.84	11.15	10.15

**Table 4:** Distances between final cluster centers

	1	2	3	4	5
<b>1</b>					
<b>2</b>	4,55				
<b>3</b>	4,81	4,47			
<b>4</b>	4,67	5,01	2,95		
<b>5</b>	3,51	2,30	2,52	3,15	
<b>6</b>	6,26	4,02	3,92	6,07	4,07

## DISCUSSION

A majority of the European population takes part in sport now and then, and around one in six persons participates in sport intensively. Sport predominantly takes place in a non-organized context and, besides this, mainly in the context of club associations and fitness centers. Evidently, the situation in each member state is the product of its own sport tradition and sporting identity. On the one hand, this has led to a fascinating cultural diversity, but on the other, it has created structural differences in sport participation between European countries. Our 'six sporting worlds' follow a classification of organizational context and intensity of sport participation for 25 European member states. Hereby, we offer a new perspective on comparing cross-national sporting activity differences using actual sporting outcomes rather than preconceived notions of the comparability of countries. As such, our analysis is the first to offer an *empirically validated* stratification of countries based on the organizational context and intensity of sport participation. Our results show that traditional ad hoc comparisons of countries considered as similar based on historical, political (policy) or geographical determinants such as Belgium and the Netherlands, Spain and Portugal, or Denmark and Finland can be misleading as these have been shown here to be rather dissimilar when grouped together by concrete sporting outcomes. Moreover, the geography of sporting inequalities shown by our cluster classification

presents homogeneous sub-regional groupings of countries. The results of the hierarchical and K-means cluster analysis produce a six-fold sporting typology of European countries. A first cluster comprises the *non to average fitness* countries where sport is more often practiced in a commercial context; a second the *active club* countries where sport occurs more in a club-related context; a third the *average non-organized* countries where sport takes more frequently place in a non-organized context; a fourth the *average school* countries where sport takes often place in a school context; a fifth the *active multi-context* countries (where sport takes place in different organizational contexts; and a sixth the *very active* countries which stand out as the countries with the largest and most wide-ranging sport movements.

The disparities between these 'six sporting worlds' are quite large, and European institutional policies and interventions to reduce these disparities can benefit through more meaningful summaries of inequality based on these actual sporting outcomes. Given the above cross-national differences, the policy strategies to increase participation in sport and physical activity need to be manifold in nature and find expression at different levels. They have to take account for the fact that the provision and intensity of sport is at a quite different level in all six sporting worlds and thus need a differentiated approach since each sporting cluster has its own problems to deal with. For instance, with respect to the non- to average fitness countries, one can debate whether sport associations should have to be sufficiently modernized in order for club life to be made more attractive to young people, or whether the future lies with new structures that stimulate young people to innovate and disseminate sporting behavior? Or with respect to the average school and non-organized countries, one can debate whether there is really a need for the reinforcement of the sport structure, namely the advancement and support for the establishment of sport associations, school sport clubs and an innovative commercial provision of sport with all the necessary facilities?

Evidently, the analysis in this article is subject to a number of limitations. First, although the Eurobarometer data were the best available, the self-reported registration of sport participation has many problems and often provides inaccurate information (Boothby 1987). Second, the whole analysis rests on data for the year 2004. Although much has changed since then, much has remained the same as well. However, it is possible that the same analysis might produce different results if repeated for other years. In addition, it is not possible to make assertions regarding trends in European sporting disparities. Given that cluster membership is dynamic, the methodology has potential for the monitoring of European sporting inequalities over time where, for instance, once similar countries become more disparate, and vice versa. Fourth, the data is constrained to 25 European member states. It would be very interesting to include data for other (non-European) countries as well. Fifth, the analysis is centered on the organizational context and intensity of sport participation. If other indicators, or more indicators, had been used the conclusions might have been different. For instance, it would be interesting to have comparative information about the differential popularization of the various branches of sport and the nature of exercise, or the way in which sporting behavior is influenced by socially imposed gender and class cultures. Sixth, cluster analysis and other statistical techniques of typology construction could be viewed as overly quantifying to the detriment of more theoretical aspects. More 'qualitative' measures that might have

been able to encapsulate aspects of institutional arrangements relevant to sport participation (such as the cross-national differences in *Sport for All* policies) could not be included in the analysis. The resulting sporting clusters are therefore unable to reflect such institutional matters. Subsequently, caution should be applied to the results and their interpretation. Seventh, the optimal number of clusters was derived from the set of nested clusters visualized on the dendrogram. Since this is a largely subjective method, there were other possible country groupings that could have been derived. Nonetheless, we have identified six broad and meaningful clusters that represent a more sensible taxonomy of European sporting differences than other, more ad hoc, classifications. Above all, this article has demonstrated the benefits of utilizing a more methodologically robust approach to typology modeling. Future attempts at classification should therefore build upon this approach and develop a more holistic means of comparing sport participation across European countries, one which takes into account not only the intensity of sport participation, but also the organizational context, and does so in a methodologically mature way.

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## CHAPTER 5: HYPOTHESIS-TESTING

### PAPER 8: MACRO-ENVIRONMENTAL FACTORS ASSOCIATED WITH LEISURE TIME PHYSICAL ACTIVITY. A CROSS-NATIONAL ANALYSIS OF EU COUNTRIES

**A slightly different version of this paper is published in *Scandinavian Journal of Public Health* (Van Tuyckom 2011).**

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#### INTRODUCTION

A growing body of research has brought to public attention the negative consequences of physical inactivity and the benefits of regular leisure-time physical activity (LTPA) for health (Brownson et al. 2001; Rütten & Abu-Omar 2004). However, it is estimated that about two-thirds of the European adult population (aged fifteen years or more) do not reach recommended levels of physical activity. Physical inactivity consequently constitutes a major public health concern and is believed to be a key reason for the rise in obesity rates (Colditz 1999). This trend is of considerable concern because of the adverse health outcomes such as premature death and the social and economic costs associated with treating the health problems related to obesity (Humphreys & Ruseki 2007). In an effort to solve this lack of LTPA problem, research in the past two decades has employed different theoretical perspectives in order to understand the factors that enhance or reduce LTPA. In particular, social cognitive models that emphasize the interaction of intrapersonal factors, micro-environmental influences and LTPA have gained empirical support (Sallis & Owen 1999; Trost et al. 2002). However, despite being identified as contributing towards LTPA, such individually-focused factors have generally been found to account for only a modest proportion of the variance in LTPA behavior. Also leading public health authorities have highlighted the necessity to go beyond these more 'traditional' efforts (Cavill et al. 2006). Rütten et al. (2001) in this regard mention the need of a *"paradigm shift away from the individual oriented approaches towards a more expanded model of health behavior change that includes higher levels of impact"*. A key feature of these 'ecologic models of health behavior' is that they emphasize LTPA as being the result of multiple influences, i.e. intra- and interpersonal but also broader physical environmental, societal, organizational and policy factors (Grzywacz & Marks 2001; Sallis & Owen 2002). However, despite the widely recognized role of governmental-level aspects for many health behaviors, the link between policy and trends in LTPA is not well understood (Rütten et al. 2001; Stahl et al. 2002). Nevertheless, changes on the policy-level can guide individual choices

and, as previously mentioned, might be a good complement to individual-level interventions *“as they can influence the lives of more people, may affect groups who are difficult to reach with traditional approaches, can have longer lasting effects on behavior change by shaping social norms, and may be cost-effective”* (Rabin et al. 2006). Although there is a growing agreement among researchers that the modern environment is a major contribution to the current trend of decreasing LTPA, there are few studies addressing how various environmental and policy factors may fuel LTPA rates in European countries. The existing studies have focused mainly on the availability, distribution and quality of local sport and recreational facilities, as well as on features of the physical environment (Humpel et al. 2002, 2004; Rütten et al. 2001; Seefeldt et al. 2002; Stahl et al. 2002; Sugiyama et al. 2009; Wicker, Breuer & Pawlowski 2009). However, these studies are limited in scope to the micro-environment of individuals and provide no information on European patterns and correlates. Since there is a growing agreement that the modern environment fuels both increased food consumption and decreased LTPA, we also looked for studies on environmental correlates of obesity. Although very limited as well, we found one study identifying macro-environmental factors associated with obesity prevalence in different European countries (Rabin, Boehmer & Brownson 2006). This study has been an excellent guide in selecting some of the relevant macro-environmental indicators.

The purpose of the present study is twofold: (i) to describe the geographical patterns of LTPA in the European Union, and (ii) to determine whether there is an association between LTPA and macro-environmental factors including indicators of economic, physical and policy domains. In order to address these aims, a correlational study of European Union countries was conducted whereby LTPA was evaluated in relation to national indicators of the economic, physical (including food and urbanization) and policy environments. For this purpose, aggregate country level data were assembled from several international databases (for description and sources, see Table 1). Given the sparse literature related to this second step, this study should be considered as purely exploratory. Evidently, further research will be needed to understand whether and how policy and governance characteristics influence LTPA rates within the European Union.

**Table 1:** Description and summary statistics (median, minimum, and maximum) of the variables included in the analysis with their sources (all year 2005)

Indicator	Source	Description	Median	Min	Max
<b><i>Leisure time physical activity</i></b>					
<b>Total</b>	EB64.3	Percentage of population being physically active in leisure time (some + a lot), based on national samples, self reported LTPA	18,9	8,4	30,9
<b>Male</b>	EB64.3	Percentage of male population being physically active in leisure time (some + a lot)	22,2	11,1	30,9
<b>Female</b>	EB64.3	Percentage of female population being physically active in leisure time (some + a lot)	16,3	5,8	30,9
<b><i>Economic variables</i></b>					
<b>GDP</b>	HFA	Gross domestic product, US\$ per capita	22358,0	3109	61752
<b>Real GDP</b>	HFA	Real gross domestic product, PPP\$ per capita	23381	9032	60228
<b>Public sector expenditure on health</b>	HFA	Public sector expenditure on health as % of total government expenditure	13,6	6,0	19,2
<b>Students in tertiary education</b>	UNECE	Includes post-secondary education leading to an award not equivalent to a First university degree, a first university degree or equivalent, or a post-graduate university degree	38,6	5,8	58,9
<b>Unemployment rate</b>	HFA	Unemployment rate in %	7,7	4,4	17,7
<b><i>Food variables</i></b>					
<b>Available calories</b>	HFA	Average number of calories available per person per day (kcal)	3472	2779	3746
<b>Available fat</b>	HFA	% of total energy available from fat	35,5	26,3	41,8
<b>Available fruits and vegetables</b>	HFA	Average amount of fruits and vegetables available per person per year (in kg)	203,7	129,7	422,7
<b><i>Urbanization variables</i></b>					
<b>Urban population</b>	HFA	% of urban population	69,1	51,0	97,2
<b>Population density</b>	HFA	Average population density per km <sup>2</sup>	108,4	15,5	1261,0
<b>Total passenger cars</b>	UNECE	Passenger vehicles (per 1000 population)	455,4	149,1	644,4

<b>New passenger cars</b>	UNECE	New passenger car registrations (per 1000 population)	29,5	0,3	93,9
<b>Paved roads</b>	WDI	Paved roads (% of total roads)	98	23	100
<b>Forest area</b>	WDI	Forest area in km <sup>2</sup> (% of total area)	32,1	0,9	66,5
<b><i>Policy variables</i></b>					
<b>Voice and accountability</b>	WGI	Extent to which citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media	1,2	0,4	1,8
<b>Political stability</b>	WGI	Likelihood that government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism	0,8	0,2	1,6
<b>Government effectiveness</b>	WGI	Quality of public services, civil service and degree of its independence from political pressures, quality of policy formulation and implementation, and credibility of government's commitment to such policies	1,1	-0,1	2,2
<b>Regulatory quality</b>	WGI	Ability of government to formulate and implement sound policies and regulations that permit and promote private sector development	1,2	0,2	1,8
<b>Rule of law</b>	WGI	Extent to which agents have confidence in and abide by rules of society, in particular quality of contract enforcement, property rights, police and courts, as well as likelihood of crime and violence	1,1	-0,2	2,0
<b>Control of corruption</b>	WGI	Extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests	1,0	-0,2	2,4
<b>Average governance indicator</b>	WGI	Calculated as the arithmetic mean of the six average indicators for each country	1,1	0,0	1,9

## DATA AND METHODS

### MEASURES

#### Leisure time physical activity

The dependent variables were self-reported overall and gender-specific LTPA rates (i.e. percentages of population being physically active in their leisure time) derived from the most recent Eurobarometer survey in which LTPA was assessed (Papacostas 2005). Eurobarometer 64.3: Foreign Languages, Biotechnology, Organized Crime, and Health Items was carried out in November 2005 at the request of the European Commission, Directorate-General Press and Communication Polls and covers the population of the respective nationalities of the European Union member states, resident in each of the member states and aged fifteen years and older ( $N=26688$ ). The survey was also conducted in Bulgaria and Romania, an interesting detail since at that time they were still preparing for accession to the European Union. The basis sample design applied in all states is a multi-stage, random probability one. All interviews were conducted face-to-face in people's homes, in the appropriate national language. With respect to the data capture, CAPI (Computer Assisted Personal Interview) was used in those countries where that technique was available (Papacostas 2005). In each member state, at least 500 (Malta) and at most 1557 (Germany) interviews were conducted. LTPA was assessed by means of the question: 'In the last 7 days, how much physical activity did you get from recreation, sport and leisure time activities?' Answer categories were (i) a lot, (ii) some, (iii) little, and (iv) none. For analytical purposes, this original question is dichotomised whereby respondents who answered 'none' or 'little' were defined as not (or little) physically active in their leisure time; those who answered 'some' or 'a lot' were defined as physically active in their leisure time. Unfortunately, no conclusions can be made regarding the vigorousness or duration of LTPA.

#### Macro-environmental factors

For all 27 European member states, indicators for the macro-environment were selected from international databases of health, economic and other governmental organizations. Consistent with the study of Rabin, Boehmer & Brownson (2006), we distinguished between economic, policy, and physical (in this article further categorized into food and urbanization) indicators. Summary statistics (median, minimum, maximum) for the different indicators can be found in Table 1.

### DATA ANALYSIS

To visualize the geographical pattern of LTPA across the 27 European Union member states, data was mapped using EuroOffice Map Chart Professional 2008. To examine the association between each of the independent macro-environmental variables and LTPA as a continuous dependent variable, bivariate linear regression models were employed. Separate analyses were done for the overall, male, and female groups. Six variables

(gdp, real gdp, available calories, urban population, and population density) were log transformed to achieve normality. Given the exploratory nature of this study, analyses relied on an alpha level equal to 0.10. All analyses were performed using the SPSS 17.0 software package.

## RESULTS

### LEISURE TIME PHYSICAL ACTIVITY PATTERNS

First of all, from Table 2 we notice striking differences between the European member states with respect to LTPA in 2005, with percentages ranging from 22,1-61,9% among males, 11,5-61,7 among females, and 16,8-61,7% for the combined genders. With more than six out of ten citizens aged fifteen and older being physically active in their leisure time, Finland is the most active nation. Remarkably, in contrast with research from 2004 in which sporting activity was assessed, the other Scandinavian countries are not among the leaders in the present survey. Sweden (49,5%) and Denmark (41,5%) are merely in the eighth and eleventh place respectively. Greece and Romania are least with less than two out of ten citizens being physically active in their leisure-time. On average, 39% of the European adults - 43% for males and 36% for females - indicate some or a lot physical activity from recreation, sport or leisure time activities in the last seven days. In general, LTPA declines when moving from north to south in Europe (Figure 1). Citizens from more Northern locations and from Scandinavian countries on average exceed their continental colleagues from the Mediterranean Sea area. In addition, Eastern-Europeans generally score less well in the LTPA sphere than Western-Europeans, with a few exceptions. Moreover, we found a general trend of lower LTPA rates for women compared to men in almost all member states. These results are in large part congruent with findings from previous studies into European LTPA (Hartmann-Tews 2006; Van Tuyckom & Scheerder 2010a, 2010b; Van Tuyckom, Scheerder & Bracke 2010).

**Table 2:** Leisure time physical activity (some + a lot) for overall, male and female groups in 27 European member states (in %)

Country	Leisure time physical activity		
	Total	Male	Female
Belgium	44,121	46,045	42,231
Denmark	41,528	43,396	39,511
Germany	53,613	57,020	50,822
Greece	16,800	23,888	11,518
Spain	37,808	44,749	32,522
Finland	61,773	61,871	61,706
France	45,771	52,222	40,541
Ireland	51,837	52,194	51,554

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<b>Italy</b>	33,199	39,633	29,180
<b>Luxembourg</b>	49,597	55,340	45,517
<b>Netherlands</b>	57,823	58,560	57,087
<b>Austria</b>	50,201	53,196	47,358
<b>Portugal</b>	21,255	24,938	18,739
<b>Sweden</b>	49,525	49,742	49,257
<b>United Kingdom</b>	38,902	44,712	33,624
<b>Cyprus</b>	33,800	41,509	28,125
<b>Czech Republic</b>	34,311	37,342	31,694
<b>Estonia</b>	31,168	35,736	28,834
<b>Hungary</b>	35,108	44,417	28,969
<b>Latvia</b>	30,031	31,378	29,288
<b>Lithuania</b>	52,615	51,781	53,115
<b>Malta</b>	32,064	36,364	29,940
<b>Poland</b>	32,012	36,047	28,881
<b>Slovakia</b>	29,417	32,832	27,258
<b>Slovenia</b>	39,220	44,346	35,192
<b>Bulgaria</b>	30,974	34,328	27,866
<b>Romania</b>	18,191	22,145	14,943
<b>EU-average</b>	38,988	42,805	36,121



**Figure 1:** Geographical distribution of leisure time physical activity in 27 European member states; ranging from low LTPA (black) to high LTPA (white)

#### MACRO-ENVIRONMENTAL FACTORS

The relationship between overall, male and female LTPA and each of the independent macro-environmental variables across the 27 European member states, i.e. the unstandardized ( $b$ ) and standardized linear regression coefficients ( $\beta$ ) along with their 90% CI are presented in Table 3. Statistically significant associations were observed between overall LTPA and gross domestic product (GDP), real domestic product (real GDP), public expenditures on health, available fat, available fruit and vegetables, urban population, total and new passenger cars, and all variables from the policy domain. Associations for male LTPA were similar to overall LTPA with one exception: the coefficient for available fruits and vegetables was not significant. Associations for female LTPA were similar to overall LTPA except that the coefficients for available fat and urban population were not significant. The magnitude of the coefficient estimates suggests slightly stronger associations for male than for female LTPA in all except one case, political stability. Independent variables not significantly associated with LTPA in any of the three groups include students in tertiary education, unemployment rate, available calories, population density, forest area, and paved roads.



**Table 3:** Relationship between overall, male, and female leisure time physical activity and each of the independent variables across 27 European member states; (un)standardized coefficients and 90% CI's

Indicator	Overall LTPA			Male LTPA			Female LTPA		
	<i>B</i>	<i>B</i>	90% CI	<i>b</i>	<i>β</i>	90% CI	<i>b</i>	<i>β</i>	90% CI
<i>Economic variables</i>									
GDP (ln)	4,178	0,599	2,272 – 6,083	4,132	0,650	2,482 – 5,781	4,151	0,552	2,009 – 6,293
Real GDP (ln)	8,231	0,626	4,732 – 11,731	8,166	0,682	5,170 – 11,162	8,181	0,577	4,225 – 12,136
Public sector expenditure on health	0,736	0,337	0,033 – 1,438	0,660	0,331	0,018 – 1,303	0,771	0,327	0,010 – 1,532
Students in tertiary education	-0,031	-0,067	-0,188 – 0,126	-0,058	-0,139	-0,201 – 0,084	-0,011	-0,022	-0,181 – 0,159
Unemployment rate	-0,451	-0,241	-1,072 – 0,171	-0,421	-0,246	-0,986 – 0,145	-0,475	-0,235	-1,146 – 0,196
<i>Food variables</i>									
Available calories (ln)	5,108	0,071	-19,559 – 29,775	7,895	0,120	-14,492 – 30,283	2,909	0,037	-23,751 – 29,570
Available fat	0,497	0,368	0,070 – 0,925	0,590	0,481	0,222 – 0,958	0,416	0,286	-0,060 – 0,892
Available fruits and vegetables	-0,034	-0,354	-0,064 – -0,003	-0,025	-0,287	-0,053 – 0,003	-0,040	-0,391	-0,072 – -0,008
<i>Urbanization variables</i>									
Urban population (ln)	11,713	0,341	0,678 – 22,747	11,256	0,359	1,267 – 21,245	11,860	0,320	-0,138 – 23,858
Population density (ln)	-0,522	-0,081	-2,713 – 1,668	-0,142	-0,024	-2,145 – 1,862	-0,799	-0,115	-3,154 – 1,556
Total passenger cars	0,024	0,443	0,007 – 0,040	0,025	0,506	0,010 – 0,039	0,023	0,399	0,005 – 0,041
New passenger cars	0,146	0,459	0,049 – 0,242	0,142	0,491	0,056 – 0,229	0,147	0,429	0,041 – 0,253
Paved roads	-0,029	-0,120	-0,110 – 0,052	-0,021	-0,095	-0,095 – 0,053	-0,039	-0,150	-0,126 – 0,048
Forest area	0,029	0,083	-0,091 – 0,150	0,016	0,049	-0,095 – 0,126	0,040	0,106	-0,090 – 0,171
<i>Policy variables</i>									

Chapter 5: Hypothesis-testing

<b>Voice and accountability</b>	10,840	0,678	6,823 – 14,857	10,001	0,686	6,376 – 13,627	11,356	0,658	6,919 – 15,794
<b>Political stability</b>	8,809	0,565	4,419 – 13,199	7,351	0,517	3,198 – 11,504	10,039	0,597	5,433 – 14,644
<b>Government effectiveness</b>	7,513	0,770	5,384 – 9,641	6,843	0,769	4,899 – 8,787	7,893	0,750	5,513 – 10,274
<b>Regulatory quality</b>	10,993	0,711	7,275 – 14,710	10,026	0,711	6,637 – 13,415	11,671	0,699	7,596 – 15,746
<b>Rule of law</b>	6,494	0,705	4,264 – 8,725	6,013	0,716	4,010 – 8,015	6,783	0,683	4,303 – 9,263
<b>Control of corruption</b>	5,836	0,739	4,020 – 7,651	5,335	0,741	3,685 – 6,985	6,116	0,718	4,092 – 8,140
<b>Average governance indicator</b>	9,022	0,750	6,301 – 11,742	8,199	0,747	5,707 – 10,690	9,549	0,736	6,544 – 12,554

Note: statistical significant associations in *italics*

## DISCUSSION

In this study, we examined LTPA data (from 2005) for 27 European Union member states and found that still four out of ten European citizens are not physically active in their leisure time. Moreover, there are some apparent differences between Northern- and Western-European countries on the one hand and Southern- and Eastern-European countries on the other hand. This finding is consistent with previous studies suggesting a decline in LTPA when going from north to south and from west to east in Europe, with a few exceptions (Hartmann-Tews 2006; Van Tuyckom & Scheerder 2010a, 2010b; Van Tuyckom, Scheerder & Bracke 2010). These differences in LTPA have led to a fascinating cultural diversity which is distinctive to Europe, but also to structural inequalities in the opportunities for individuals to be physically active in their leisure time. Our findings regarding the economic characteristics of a country suggest that there is significantly more LTPA in countries with a higher GDP, real GDP, and a higher public sector expenditure on health. These results are consistent with previous research from 2004 showing that the percentage of the population that never participates in sport is significantly related to the degree of affluence in the country concerned: as the GDP per capita for the European Union member states increases, so does the percentage of those who take part in sport (Van Bottenburg, Rijnen & Van Sterkenburg 2005). This positive correlation between health and income per capita is one of the best-known relationships in international development. Although all the European countries in our study are considered technologically advanced, income per capita and LTPA have a positive relationship probably owing to an increased demand for fitness in the more affluent European countries (such as the Scandinavian countries) leading to better 'services that promote good health' such as LTPA opportunities, etc. (Van Bottenburg, Rijnen & Van Sterkenburg 2005).

Second, our results show a higher rate of LTPA in countries with higher per capita availability of fat, and lower per capita availability of fruits and vegetables, but no association with available calories. Rabin, Boehmer & Brownson (2006) attribute these findings to the limitation of food balance sheets to describe the actual consumption of individuals (Bloom & Canning 2000) and argue for the use of data from household surveys or nationally representative food consumption surveys. However, such data are unavailable - or at least not comparable - for the majority of the countries.

Third, there is a growing evidence that land-use characteristics and transportation patterns affect the levels of LTPA (Pomerleau et al. 2003). Most European metropolitan areas have high-density, centralized land-use patterns that promote physical activity. In our study, we used the percentage of urban population, the population density, the forest area, and the number of total and new passenger cars as proxy measures of a country's level of urbanization, assuming that the more (densely populated) European urban regions a country has, the higher the LTPA rates will be. Our results suggest indeed that countries with a higher percentage of urban population have higher LTPA rates, however this only holds for the overall group and for males. Moreover, both the percentage of total and new passenger cars showed a significant association with both overall, male and female LTPA, confirming the hypothesis that higher levels of urbanization in European countries increase LTPA rates. For the other proxy variables, no association could be found. These findings are

consistent with Canadian, US and German data suggesting that a (perceived) lack of adequate infrastructure is one important barrier to LTPA. Hence, the distance and access to physical fitness facilities (sport halls, outdoor sport grounds, indoor swimming pools, fitness centers, etc.) and other urban design factors (traffic, lighting and sidewalk maintenance) are of great importance in influencing population rates of LTPA (Sallis & Owen 2002; Wicker, Breuer & Pawlowski 2009).

Fourth, we included six aggregated indicators addressing different aspects of the quality of governance of a country. As in the study of Rabin, Boehmer & Brownson (2006), significant coefficients for all six indicators were observed, both for the overall group as for the male and female groups. Although the complexity of the indicators makes it difficult to interpret the results, the present findings suggest higher levels of LTPA in countries that can be described, among others, by more independent media and a higher capacity of the government to effectively formulate and implement sound policies. It seems that a better stability and higher effectiveness of a government provides better opportunities for policy makers to focus on key public health problems such as physical activity and obesity. This was already the case after World War II, when many (stable) West-European countries developed a noticeably active government policy with regard to sport and LTPA. An important aim of this *Sport for All* policy was to inspire as many citizens as possible to get involved in sportive action and to take part in physical activities. Stahl's comparative case study confirms the positive effects of such a LTPA-friendly policy orientation on better infrastructure for LTPA and consequently better LTPA behavior (Stahl et al. 2002). Nevertheless, policy makers need more than anecdotal evidence on the relationship between the policy environment, governance characteristics and LTPA, to which this study hopes to contribute.

To the best of our knowledge, no previous study on LTPA has included such a wide variety of macro-environmental indicators, including governmental characteristics. Despite this major strength, the use of a cross-sectional design introduces potential biases and can, among others, not establish temporality. Moreover, our conclusions are limited to country-level associations, ignoring within-country variations and individual-level associations. Future research should therefore implement a multilevel research design. In addition, our data are restricted to physical activity in leisure time, and any inferences pertain only to this form of activity. Consequently, the mentioned effects may be contradictory. For example, a factor hampering LTPA at the cultural level may at the same time increase their propensity to become physically active in other settings such as during gardening or household work. Research from 2004 has shown that high percentages of sport participation go hand in hand with relatively low levels of physical activity beyond the leisure sphere (Van Bottenburg, Rijnen & Van Sterkenburg 2005). According to this study, Scandinavians, for instance, seem to be involved in sporting activities to a large extent while (or possibly because) they are comparatively inactive at work, in and around the house or when moving from place to place. However, results from a 2007 European study into LTPA do not seem to confirm these 'compensation mechanisms' (Van Tuyckom & Scheerder 2010b). What is certain, is that demographics (i.e. an increase in elderly citizens) and many cultural drivers (i.e. a decrease in activity derived through housework and self-powered transport; a declining trend for physically

demanding jobs) are pushing us towards a more sedentary rather than a more active lifestyle union. However, outside of LTPA, the opportunities to promote other types of physical activities are rather limited. It is difficult to envisage public intervention policies aimed specifically at promoting gardening or do-it-yourself tasks. Moreover, apart from using the stairs instead of the elevator, or from jogging during lunch time, it sounds rather ridiculous to formulate government recommendations aimed at increasing the physical burden of jobs. Therefore, we suggest the important contribution of sport to health primarily through the extent to which it contributes towards increasing physical activity, although there is also evidence to suggest that the social engagement aspects of LTPA are beneficial in their own right (Van Tuyckom & Scheerder 2010b). Also, the duration of LTPA has not been assessed so that no conclusions with regard to the intensity can be made. Although the Eurobarometer data were the best available, the self-reported registration of LTPA might under- or overestimate LTPA and may vary across gender, race, age, and education subgroups (Boothby 1987). Moreover, there might have been some variation between countries in how respondents understood what was covered by LTPA. Among researchers there has been a lack of clarity as to what is meant by sport and physical activity, and this might be confusing for the general public as well. The question 'in the last 7 days, how much physical activity did you get from recreation, sport and leisure-time activities' might have a different connotation in different countries. Methodologically, this concerns the problem of instrumental (metric or linguistic) equivalence (Van Tuyckom, Scheerder & Bracke 2010). In addition, with a reference of period of seven days, weather influences might also give some bias in the results. However, objective data is not available in all European countries, or at least not in sufficient detail for cross-national comparison. Furthermore, the quality of data identified from international databases might differ depending upon the accuracy and methodology used by reporting countries. To fully grasp the between-country differences in LTPA rates across the European Union, we claim, inspired by Rabin, Boehmer & Brownson (2006), for the development of an internationally comparable database of environmental and policy variables, including food production and marketing, media activity, transportation and urban planning laws, as well as national LTPA campaigns. Again, the findings from this study should not be used to draw any final conclusions but rather to generate hypotheses for further research making use of stronger study designs.

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## APPENDIX

Originally, the models estimated were hierarchical generalized linear models (HGLM). Specifically, Bernoulli models with a logit link function were estimated using the software Hierarchical Linear Models (HLM) for Windows (version 6.08). However, one of the reviewers suggested, given the explorative nature of the paper, to estimate aggregate linear regression models instead (as is ultimately done in the paper). Multilevel analysis allows variance in the outcome variable to be analyzed at multiple hierarchical levels, and is consequently

appropriate for nested data (such as the Eurobarometer surveys). In linear regression, on the other hand, all effects are modeled to occur at a single level.

In Table 4, the original multilevel Bernoulli regression results are presented. To a large extent, the results are the same. What is different, is that the multilevel models suggest that the probability to participate in LTPA is significantly lower in countries with higher unemployment levels, both in the overall model as in the gender-specific models. Moreover, whereas in the aggregate bivariate regression models, urban population and the number of total and new passenger cars were not related to female LTPA levels, our multilevel Bernoulli models suggest that the probability to participate in LTPA is significantly higher in countries with higher percentages of urban population and a higher number of passenger vehicles and new passenger car registrations.

**Table 4:** Results of multilevel Bernoulli regression models; unstandardized coefficients, odds ratios and p-value

Indicator	Overall LTPA			Male LTPA			Female LTPA		
	<i>b</i>	<i>OR</i>	<i>p-value</i>	<i>b</i>	<i>OR</i>	<i>p-value</i>	<i>b</i>	<i>OR</i>	<i>p-value</i>
<i>Economic variables</i>									
GDP (ln)	0,356	1,427	***	0,343	1,410	***	0,363	1,438	***
Real GDP (ln)	0,706	2,026	***	0,683	1,980	***	0,724	2,064	***
Public sector expenditure on health	0,061	1,063	*	0,054	1,055	*	0,067	1,069	*
Students in tertiary education	-0,003	0,997		-0,005	0,995		-0,001	0,999	
Unemployment rate	<b>-0,039</b>	<b>0,962</b>	*	<b>-0,035</b>	<b>0,966</b>	*	<b>-0,042</b>	<b>0,959</b>	*
<i>Food variables</i>									
Available calories (ln)	0,437	1,548		0,655	1,924		0,247	1,281	
Available fat	0,043	1,043	*	0,049	1,050	**	0,037	1,038	
Available fruits and vegetables	-0,003	0,997	*	-0,002	0,998		-0,004	0,996	*
<i>Urbanization variables</i>									
Urban population (ln)	1,011	2,749	*	0,944	2,571	*	<b>1,063</b>	<b>2,896</b>	*
Population density (ln)	-0,042	0,959		-0,010	0,990		-0,065	0,937	
Total passenger cars	0,002	1,002	**	0,002	1,002	**	<b>0,002</b>	<b>1,002</b>	**
New passenger cars	0,012	1,012	**	0,012	1,012	***	<b>0,013</b>	<b>1,013</b>	**
Paved roads	-0,002	0,998		-0,002	0,998		-0,003	0,997	
Forest area	0,002	1,002		0,001	1,001		0,003	1,003	
<i>Policy variables</i>									
Voice and accountability	0,936	2,550	***	0,839	2,315	***	1,010	2,745	***
Political stability	0,753	2,122	***	0,615	1,849	***	0,889	2,432	***
Government effectiveness	0,649	1,914	***	0,571	1,770	***	0,705	2,025	***



<b>Regulatory quality</b>	0,966	2,629	***	0,850	2,339	***	1,069	2,911	***
<b>Rule of law</b>	0,555	1,742	***	0,502	1,652	***	0,597	1,816	***
<b>Control of corruption</b>	0,497	0,094	***	0,442	1,556	***	0,536	1,709	***
<b>Average governance indicator</b>	0,778	2,176	***	0,687	1,987	***	0,849	2,338	***

Note: \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ; differences with aggregate bivariate linear regression models in **bold**

PAPER 9: DOES COUNTRY CONTEXT MATTERS? A CROSS-NATIONAL ANALYSIS OF GENDER AND LEISURE TIME PHYSICAL ACTIVITY (LTPA) IN EUROPE

**A slightly different version of this paper is currently *under review*.**

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INTRODUCTION

One of the most well-established findings is that European men are more physically active in their leisure time than European women (Hartmann-Tews 2006; Hovemann & Wicker 2009; Rütten & Abu-Omar 2004; Van Bottenburg, Rijnen & Van Sterkenburg 2005; Van Tuyckom & Scheerder 2010). Attempts to explain these gender differences generally emphasize women's different abilities, interests and choices (Doherty & Varpalotai 2000) and consequently to not succeed in raising the problem above the level of the individual. However, the size of the disadvantage for women varies considerably across countries. Research shows that women residing in Southern countries (Portugal, Greece, Italy) have the greatest deficit with respect to leisure time physical activity (LTPA) while the levels of female participation in Scandinavian countries (Sweden, Finland, Denmark) and the Netherlands are equal to or higher than those of men (Gratton 1999; Margetts et al. 1999; Van Tuyckom, Scheerder & Bracke 2010). In addition, whereas in most countries men are in the majority as practitioners in associations and women's participation is more flexible and market oriented, there remain considerable cross-national differences (European Commission 2004). These differences prove that LTPA is a thoroughly social phenomenon, which takes place and finds its meaning within a broader societal context (Van Bottenburg, Rijnen & Van Sterkenburg 2005) and must consequently also be understood and approached as such. Therefore, in the past decades, some authors (Deem 1998; Kay 2000; Shaw 1994) have explicitly recognized the role of gender- and family-related social policy as a source of both ideological and practical influence on the way gender relations are played out in the context of leisure. They have explained women's lack of leisure in terms of the reality of their everyday lives, and gendered power relations in society in particular. Lifestyle and leisure are thus constrained by the lack of equal economic and political power between men and women. Unfortunately, in none of the existing studies on cross-national variation in gender differences in LTPA (Gratton 1999; Margetts et al. 1999; Van Tuyckom, Scheerder & Bracke 2010), this factor has been identified as preventing or reducing women's opportunities for participation in LTPA. The present article wants to address this lacuna and postulates that over and above the individual effect of gender, there might be an additional impact of a society's gender-based (in)equality distribution. Gender differences in LTPA are thus seen to arise out of societal structures. Rather than viewing gender differences as fixed, our question becomes: under what conditions are gender differences in LTPA strong, and under what conditions weak? The conditions highlighted in this article are those facilitating equal distribution of power and life opportunities for men and women in different domains, including economic participation, political empowerment, educational attainment, and health and wellbeing.

Moreover, an additional interpretation to be considered is that previous reports on cross-national gender differences in LTPA might reflect a so called ‘compositional effect’ (Diez-Roux 2002), i.e. when cross-national variation is in fact attributable to differences in group composition (the characteristics of the individuals of which the groups are comprised). Such compositional effects could erroneously lead to conclusions about contextual variation in gender differences, when in fact the differences are due to individual-level factors in several life domains such as age, marital status, educational attainment, urbanization level, employment and the presence of little children (all of which have known effects on LTPA, see Gruneau 1999; Stamm & Lamprecht 2005; Scheerder, Vanreusel & Taks 2005; Van Tuyckom & Scheerder 2010; Wilson 2002). Unfortunately, previous studies have not ruled out such factors as likely explanations for the variability of gender differences. Consequently, the contextual (‘the difference a place makes’) and the compositional (‘what’s in a place’) are often confounded (Subramanian, Kawachi & Kennedy 2001).

The present study examines both compositional and contextual sources of cross-national variation of gender differences in LTPA among European adults, using data from the 2005 Eurobarometer survey. The article is structured according to three main objectives. The *first* is to address the amount of gender differences in LTPA across countries. The *second* is to examine compositional effects of individual-level factors on cross-national variation in gender differences in LTPA. The *third* is to present relationships between macro-level factors (gender-based (in)equality) and gender disparities in LTPA.

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## METHODS

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### SAMPLE

Eurobarometer 64.3 (2005) is one of the most recent available Eurobarometer surveys in which LTPA was assessed in all 27 European member states. A multistage random sample design was used and to ensure national representative samples, post-stratification weights were applied in each country according to demographic factors (gender, age, and town size) using the most recent census data (Papacostas 2005). Data on individuals aged 18 and older were selected ( $N = 25745$ ), yielding at least 473 (Cyprus) and at most 1512 (Germany) conducted interviews (see Table 1).

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### MEASUREMENT

Individual level factors. The dependent variable in the analysis, LTPA, was assessed by means of the question: ‘In the last 7 days, how much physical activity did you get from recreation, sport and leisure-time activities?’ Answer categories are divided between a lot, some, little and none. For analytical purposes, a dichotomous outcome was created, with respondents answering ‘none’ defined as physically inactive in their leisure time, all others as active. The independent variables age, marital status, educational attainment (age when finished education), geographical status, employment and presence of little children were introduced into the equations to control for cross-national differences in the composition of LTPA-determining characteristics.

Macro-level factors. Two international composite measures of gender-based (in)equality were introduced: the United Nations Development Programme's Gender Empowerment Measure (GEM) and the World Economic Forum's Gender Gap Index (GGI). The GEM captures gender differences in life opportunities in three areas: (i) economic participation, measured by women's and men's percentage shares of positions as legislators, senior officials and managers; and by women's and men's percentage shares of professional and technical positions, (ii) political participation, measured by women's and men's percentage shares in parliamentary seats, and (iii) power over economic resources, measured by women's and men's estimated earned income (PPP US\$). The GGI complements and expands on the GEM in that it combines quantitative data sets with qualitative measures from the Executive Opinion Survey of the World Economic Forum, a survey of 9000 business leaders in 104 countries. The GGI focuses on five domains: (i) economic participation, measured by male and female unemployment levels, levels of economic activity, and remuneration for equal work, (ii) economic opportunity, measured by duration of maternity leave, number of women in managerial positions, availability of government-provided childcare, wage inequalities between men and women, (iii) political empowerment, measured by the number of female ministers, share of seats in parliament, women holding senior legislative and managerial positions, number of years a female has been head of state, (iv) educational attainment, measured by literacy rates, enrolment rates for primary, secondary and tertiary education, average years of schooling, and (v) health and wellbeing, measured by effectiveness of governments' efforts to reduce poverty and inequality, adolescent fertility rate, percentage of births attended by skilled health staff, and maternal and infant mortality rates.

For technical details on the GEM, see [http://hdr.undp.org/en/media/HDR\\_20072008\\_Tech\\_Note\\_1.pdf](http://hdr.undp.org/en/media/HDR_20072008_Tech_Note_1.pdf). For the GGI, see Hausmann, Tyson & Zahidi (2007). For both measures, higher scores reflect higher levels of gender-based equality.

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## STATISTICAL ANALYSIS

In the present article, the following questions are raised: (i) Nationally, how is gender related to LTPA?; (ii) Having taken account of individual, compositional characteristics, does the between-country variation in LTPA still vary differently for men and women?; (iii) How do country-level characteristics measuring gender-based (in)equality account for the gender variation in LTPA between countries? Unfortunately, most existing methodologies are problematic in the manner in which contextual factors are implemented. The more recent multilevel methodologies, however, provide a comprehensive framework to empirically address the key contextual considerations of our research question (Diez-Roux 2000; Van Tuyckom & Scheerder 2010). By performing a multilevel analysis, the clustered structure (individuals at level-1 and countries at level-2) is taken into account, and accurate estimations of individual standard errors are obtained. Moreover, by explicitly maintaining countries as a contextual level, it is reasoned that important processes of social, political and/or economic nature operating at this level might have a bearing on gender differentials in LTPA.

A three-step sequential modeling strategy is adopted with complexity being increased in every successive model. The focus of each of the models is described below.

*Unconditional or null model:* Before estimating the individual-level multilevel models, it is appropriate to begin by estimating a model with no predictors at either level to test whether significant variation in LTPA exists across countries (and consequently multilevel modeling is appropriate). Moreover, in order to understand how much of the overall variance in LTPA is attributable to either the individual or the country level, it is useful to calculate the intraclass correlation coefficient (ICC)<sup>1</sup> which measures the proportion of the variance of the dependent variable that exists between countries.

*Individual-level model controlling for compositional effects:* Cross-national variation in gender differences could occur as a result of known individual risk factors for gender differences in LTPA. To test for such compositional effects, gender differences are adjusted for age, marital status, educational attainment, employment, urbanization level and presence of little children. If the pattern of variation in gender differences reflects a compositional effect related to (one of) these factors, we would expect a reduction in the variation after controlling for these individual-level factors.

*Cross-level model:* To examine the impact of national-level gender-based (in)equality characteristics, a series of cross-level interaction models are tested. For presentation purposes, countries are grouped in low, medium and high based on the tertile scores of the relevant macro-level indicators. To test whether significant cross-level interactions exist, interaction terms between gender and the country subgroups are computed for both gender-based (in)equality measures and tested against the main effect model.

Since the response variable has two possible outcomes, logistic multilevel (Bernoulli) models based on a logit-link function are used. Models were fitted using the Hierarchical Linear Modeling (HLM) 6.08 software (Raudenbush, Bryk & Congdon 2000). The probability of LTPA occurrence is estimated by calculation of multivariate odds ratios.

Before analyzing gender-based inequality in LTPA in a multilevel framework, the total LTPA percentages for each country, those for men and women separately, and women's LTPA rate as percentage of men's were

$$\rho = \frac{\tau_{00}}{\tau_{00} + \sigma^2}$$

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1 The intraclass correlation coefficient for linear multilevel models is obtained by the following formula:

where  $\sigma^2$  is the individual-level variance. However, in nonlinear models, such as our Bernoulli model, this formula is less useful because the individual-level variance is heteroscedastic (Raudenbush & Bryk, 2002). Snijders & Bosker (1999)

$$\rho = \frac{\tau_{00}}{\tau_{00} + \pi^2/3}$$

describe an alternative definition of the ICC for nonlinear models as follows: . This definition treats the dependent variable as an underlying latent continuous variable following a logistic distribution of which the variance is  $\pi^2/3$ .

computed. In addition, the gender differences in LTPA were examined using the  $\chi^2$  measure in SPSS 17.0. The results of these analyses are presented in Table 1.

**Table 1:** Sample details and LTPA percentages for the 2007 Eurobarometer survey

Country	N	total	♂	♀	♀/♂	Pearson $\chi^2$
Finland	982	81,10	79,60	82,10	1,03	0,985
Netherlands	994	77,50	76,80	78,10	1,02	0,165
Austria	981	76,80	80,00	73,80	0,92	6,833**
Lithuania	958	75,10	74,80	75,20	1,01	0,228
Germany	1512	75,00	77,80	72,80	0,94	4,836*
Slovenia	985	73,20	75,80	71,10	0,94	2,938
Ireland	968	72,20	73,40	71,30	0,97	0,699
Sweden	1021	70,50	69,50	71,80	1,03	0,659
Latvia	933	70,00	71,30	69,30	0,97	0,080
Luxembourg	472	68,80	73,30	65,50	0,89	3,472
Belgium	964	63,50	65,70	61,40	0,93	1,375
Bulgaria	953	62,60	67,60	57,90	0,86	7,725**
Denmark	1011	62,40	64,70	59,90	0,93	2,391
Czech Republic	995	61,90	66,90	57,60	0,86	10,752***
Italy	969	61,80	70,60	56,20	0,80	21,885***
Slovakia	1029	60,40	66,20	56,70	0,86	7,628**
Spain	987	60,10	66,90	55,00	0,82	11,941***
United Kingdom	1287	57,30	62,70	52,40	0,84	12,438***
Poland	950	56,90	63,30	52,00	0,82	12,297***
France	986	56,70	62,70	51,90	0,83	13,580***
Cyprus	473	54,80	66,00	46,50	0,70	18,012***
Estonia	955	54,60	58,30	52,80	0,91	1,104
Hungary	990	52,10	61,30	46,00	0,75	19,935***
Greece	979	49,20	57,10	43,30	0,76	18,328***
Malta	483	46,90	51,50	44,60	0,87	1,376
Romania	960	43,50	49,20	38,90	0,79	10,628***
Portugal	968	39,80	45,90	35,60	0,76	9,122**
<b>Total</b>	<b>25745</b>	<b>60,44</b>	<b>64,77</b>	<b>57,03</b>	<b>0,88</b>	<b>171,529***</b>

Note: \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$

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**RESULTS**


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**LTPA DIFFERENCES ACROSS COUNTRIES**

The countries in Table 1 are ranked according to their total LTPA values, with Finland as the most active nation: more than eight out of ten Finns aged eighteen and older do some sort of LTPA. Portugal and Romania are last with only around four out of ten adult citizens begin physically active in their leisure time. In general, LTPA seem to decline when moving from north to south in Europe, and Eastern-Europeans generally seem to score less well than Western-Europeans (with Lithuania, Slovenia, and to a lesser degree Latvia as exceptions). Moreover, for 23 of the countries, men have higher LTPA scores than women. This gender gap is, however, only significant (at  $p \leq .05$ ) in fifteen of these countries. Moreover, the size of the gender differences varies considerably across countries, being largest in Cyprus (19,5%). What is more, for four countries in our sample (i.e. Sweden, Finland, the Netherlands and Lithuania), women appear to have higher LTPA scores than men. This 'positive' gender difference is, however, in none of the countries significant. For men, the highest LTPA score is found in Austria (80,00%) and Finland (79,60%) whereas women report the highest level of LTPA in Finland (82,10%) and the Netherlands (78,10%). The least LTPA is found for both men and women in Romania and Portugal.

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**MULTILEVEL MODELS**
**Unconditional or null model**

The results of our unconditional model shows that statistically significant variance in LTPA exists at the country level (Variance Component Intercept = 0,238 with  $p \leq .001$ ), making it clear that the multilevel nature of LTPA should not be ignored. Moreover, the proportion of the variance in LTPA that exists between countries is considerable: 6,75% ( $100 \times 0,238 / (0,238 + 3,29)$ )<sup>2</sup>. As noted by other authors (Steenbergen & Jones 2002), the individual level usually accounts for a great deal of the variance when data is measured at the individual level. Moreover, the variance found here is congruent with previous studies into LTPA in Europe (see Van Tuyckom & Scheerder 2010) but may well be an artefact of not taking into account key compositional characteristics. This is corrected for in the model below, which represents a simple multilevel model where the level-2 gender variation is estimated after allowing for, and conditional on, selected individual, compositional effects.

**Individual-level model: controlling for compositional effects**

Table 2 shows the odds ratios of gender on LTPA before and after adjustment for compositional effects. After allowing for individual characteristics, a  $\chi^2$  test shows that significant variation in gender differences in LTPA

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<sup>2</sup> The ICC after including individual-level variables is:  $\rho = \frac{0,170}{0,170 + \pi^2 / 3} = 0,049$

between countries remains even though the amount of variation decreased a little from 0.034 to 0.033<sup>3</sup>. This indicates in other words that the variation in gender differences in LTPA cannot be accounted for by individual confounders alone and hence country-context matters.

**Table 2:** Odds ratios of gender (base category = males) for reporting LTPA, before and after adjustment for compositional effects

<b>Unadjusted OR</b>	0,736***
<b>[95% CI]</b>	[0,678 – 0,799]
<b>Variance components</b>	0,034***
<b>Adjusted OR</b>	0,786***
<b>[95% CI]</b>	[0,721 – 0,857]
<b>Variance components</b>	0,033***

Note: \*\*\*  $p \leq 0.001$

#### Cross-level models

Before turning to the cross-level models, an exploratory aggregate bivariate analysis showed that women's LTPA rate as percentage of men's was positively related to both the GEM (Spearman  $\rho = 0,543$  with  $p \leq 0.001$ ) and the GGI (Spearman  $\rho = 0,683$  with  $p \leq 0.001$ ), indicating that in countries characterized by more gender-based equality, the LTPA rates of women tend to approach those of men. Our multilevel analyses confirm that the OR's of gender on LTPA vary across country subgroups (see Table 3). In countries characterized by low or medium gender-based equality, significant gender differences in LTPA can be noticed, with European women reporting being around 30 percent less physically active in their leisure time compared to men (with  $p \leq 0.001$ ). Moreover, in countries characterized by high levels of gender-based equality, differences between men and women even disappear.

**Table 3:** Odds ratios of gender (base category = males) for reporting LTPA, for subgroups defined by national level indicators (low - middle - high), after adjustment for compositional effects

	<b>Gender Empowerment Measure</b>	<b>Gender Gap Index</b>
<b>OR low</b>	0,714***	0,660***
<b>[95% CI]</b>	[0,645 – 0,791]	[0,595 – 0,732]
<b>OR middle</b>	0,751***	0,774***
<b>[95% CI]</b>	[0,684 – 0,824]	[0,703 – 0,852]
<b>OR high</b>	0,912	0,919
<b>[95% CI]</b>	[0,825 – 1,008]	[0,837 – 1,009]

Note: \*\*\*  $p \leq 0.001$

<sup>3</sup> The ICC after including both individual-level variables and the GEM is  $\rho = \frac{0,109}{0,109 + \pi^2 / 3} = 0,032$



## DISCUSSION

By studying samples from all European Union countries, the present study showed that the magnitude of gender differences in LTPA varies cross-nationally, a finding that is consistent with some recent European studies on gender and LTPA (Hartmann-Tews 2006; Hovemann & Wicker 2009; Rütten & Abu-Omar 2004; Van Tuyckom, Scheerder & Bracke 2010). Compared to these studies, the major strength of our analyses was that a more powerful statistical method was used. Adopting multilevel methodologies gives a much stronger basis for making judgments about cross-national variability. Through controlling for potential confounders (age, marital status, educational attainment, urbanization level, employment and presence of little children), it was found that the cross-national variation of gender differences in LTPA was highly robust for compositional effects. The key finding, however, was that gender differences in LTPA varied as a function of gender-related characteristics at the macro-level. In countries characterized by a high level of equal opportunities between men and women in several life domains, gender differences in LTPA even seemed to be absent, net of all individual-level effects. National gender-based (in)equality thus seem to have implications for the way in which men and women construct their individual (and household) lifestyles, and fundamentally affects the broader context in which LTPA occurs. Our results show that especially countries with gender-empowering social policies constitute a social context that has positive consequences for gender disparities in LTPA. Removing inequality between men's and women's participation in leisure time activities will therefore require far more than simply European-wide mass media campaigns aimed at convincing women to become physically active in their leisure time. Instead of such individually-oriented approach, public health policy should adopt a society-level perspective in addressing gender disparities in LTPA. Moreover, research from such macro-angle should provide a much more nuanced and detailed understanding of the implications for LTPA of countries' social policies aimed at narrowing unequal opportunities in several life domains between men and women.

To the best of our knowledge, no previous study on LTPA has looked at gender disparities from a multilevel perspective. Despite this major strength, however, we should also note some limitations. First, the external validity of the findings might be difficult to ascertain. Although intentionally two different macro-level indicators of gender-based (in)equality were included (the GEM and the GGI), their conceptual basis has been questioned by some authors on the grounds that they are composites of conceptually very different indicators (see for example Dijkstra 2002). As a tool for testing hypotheses about very specific mechanisms, these indicators might indeed be of relatively limited heuristic value. Nevertheless, in the context of this study, both indicators proved to be useful and support the view that macro-level gender-related factors need to be taken into account when studying gender differences in LTPA from a cross-national perspective. And although exploratory analyses with the subcomponents of the GEM and the GGI provided more or less similar results, a natural next step for future studies would be to incorporate particular national, political, economical, cultural, education- and health-based factors as moderators of cross-national gender differences in LTPA. Second, cross-national comparison of data such as in the present study might involve several sources of bias, among which method bias. However, although inevitable variation in the data collection exists (e.g., influence from the

reviewer), the available documentation (Papacostas 2005) suggests no bias with respect to the countries' adherence to the protocol. Third, although our analyses were controlled for geographical status (a proxy indicator of within-country regional differences), from an empirical perspective it would be interesting to evaluate the relative contribution of gender-based (in)equality at different contextual levels such as regions or communities. Unfortunately, although extensions of the debate fit perfectly within our multilevel framework, regional data on this subject is not available. Fourth, our study relies on cross-sectional data so that the implications of change over time could not be assessed. In this regard, longitudinal studies might be interesting to both confirm and extend our cross-sectional findings.

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PAPER 10: MODERNIZATION AND SPORT PARTICIPATION IN 27 EUROPEAN MEMBER STATES IN THE LIGHT OF BECK'S INDIVIDUALIZATION THESIS

**A slightly different version of this paper is forthcoming in *Sport participation in Europe. From facts to sheets* (edited by Scheerder et al. 2011) (Van Tuyckom 2011).**

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## INTRODUCTION

Individualization and the consequences for sport

The process of individualization is regarded by many as one of the most important socio-cultural developments of the postwar period. However, far from being a recent development, individualization was already an issue with which the founding fathers of social science (i.e. Durkheim, Simmel, Weber) were concerned. Recently, however, some authors (the most important are Ulrich Beck, Anthony Giddens and Scott Lash, see Beck, Giddens & Lash 1994) have claimed that the current process of individualization differs in important aspects from the modernization process that took place a century ago. Modernity is undergoing profound changes, with fundamental consequences for the social world, life forms and social interactions. It ultimately prompts the transition towards a new phase of (post-industrial) modernity of which individualization is one of the defining characteristics, and which has been described as 'Risikogesellschaft' (Beck 1986) or 'Erlebnisgesellschaft' (Schulze 1993). Individualization is both the consequence and the motor of processes of change in late-capitalist societies. This power to self-change is what Beck calls 'second or reflexive modernity' (Beck & Beck-Gernsheim 2000), and means that "*a change of industrial society which occurs surreptitiously and unplanned in the wake of normal, autonomized modernization and with an unchanged, intact political and economic order implies the following: a radicalization of modernity, which breaks up the premises and contours of industrial society and opens paths to another modernity*" (Beck 1994: 3).

Although the overriding importance of individualization for the present phase of modernity has been stressed by Beck and others, it is not easy to derive a clear definition of individualization from their writings. Therefore, in the following, we try to infer some concrete elements from the discussion on individualization. In sum, individualization stands for social de-standardization, for a de-structuring of social allocations. The development of the welfare state - with its increased standard of living, massive educational expansion, increased mobility, growing freedom and development of the tertiary sector - has replaced many traditional institutions like the family, the local community, the church and social classes as the defining collectivity of people's identity (de Beer 2007). In today's complex consumer societies, class consciousness or ritualized status passages become barely interpretable. The actors can no longer rely on tradition, but instead have to organize individual life courses and they are self-responsible for the composition of their biography (Schwier 2003). The de-structuring of traditional institutions thus prompts people towards a self-directed way of living. According to

Müller (1992: 33), to a considerable extent, *“eine Biographisierung des Handelns und Erlebens”* is taking place, as *“für Flexibilität und Kreativität, die neuen Gütespiegel eines guten Lebens, [es gibt] noch keine Katechismen“*. Each individual is searching for identity, self-development and personal joy at his/her own risk, and appearing conflicts (e.g., an unhappy love or unemployment) are largely interpreted as personal failures. The opportunities and restrictions for the creation of a personal biography - and their associated social restrictions - thus contain ‘riskante Freiheiten’ (Beck & Beck-Gernsheim 1994).

Sport-related research has endorsed this individualization theory almost without any reservations (Bette 1993, 1999) since throughout the second half of the twentieth century, sport has changed considerably in character. The seemingly unrestrained growth of mass sport, the increasing inclusion of women and elderly, the rapidly changing sport scenes, the increase in significance of a slim and healthy, individually fashioned body as well as the multitude of sport-related motives and interests are all indicators making the image of a de-structured sport in an individualized society extremely plausible. However, the growing literature on de-structuring and individualization of sport activities lacks a firm empirical underpinning. Therefore, Baur & Braun (2001) have launched some assumptions that can be examined under the scrutiny of empirical data. The assumptions can be summarized with the following keywords: (i) sportization of lifestyles, (ii) de-institutionalization of sport participation, (iii) ‘multiplication’ of sporting contexts, and (iv) socio-structural de-structuring of sport participation. We will discuss each of these below.

First, with the increasing variability of the current sport scene, the chances have increased for people to find sport practices which they can coordinate with other affairs (e.g., household, children, etc.) in quite individual combinations and incorporate into their lives. Since everyone can choose his/her own way of being involved in sport, many researchers assume that sport involvement has become a regular part of the daily life of people. Second, in the course of individualization in postmodern societies, institutions and organizations have lost their dominating force and people are increasingly participating in sport in a more informal way. Apart from club-based sport organizations (which still remain an important cornerstone for the practice of sport in Europe), people increasingly began to practice sport in a more spontaneous and individualized fashion, with as a result that jogging, cycling or skateboarding in the streets, badminton in the parks and volleyball on the beach - later followed by fitness and aerobics at home or in the gyms - all became part of the extensive package of practiced sport available. These offer more ‘individualistic sport opportunities’ because people can arrange their informal sport activities themselves and integrate them into their lives, giving them more flexibility. Third, the pluralized sport culture offers a multitude of opportunities so that people can arrange their sport activities themselves, compatible with their own individual lifestyle and consistent with their own interests. The *homo optionis* in post-traditional societies is forced to create a ‘do-it-yourself biography’ and the ‘sport hopping patchwork sport player’, playing badminton in a sport club, going to the fitness club for power training, going surfing in the weekend, etc. seems to become the new prototype (Schwier 2003). With the expanding sporting options, the concentration on a single sporting context (e.g., the sport club) is given up in favor of more varied contexts. Fourth, the disintegration of socio-structural and socio-cultural differentiations are considered typical in

individualized societies. Also in the field of sport it is assumed that clearly defined social differences (e.g., age, gender, educational attainment, etc.) tend to disappear. While it was once not perceived as appropriate for, for instance, (elderly) women to take part in sport and exercise, throughout the course of the twentieth century, the behavioral norms liberalized and sporting behavior became a positively valued phenomenon (Nagel 2003). Nowadays, sport has become an integral part of our society and seems to have perpetuated all social groups.

In this paper, we will examine each of the above assumptions within a cross-national European Union context. However, although it endeavors to remain founded upon common values and principles, the European Union does not wipe out the historical, social and institutional peculiarities of individual member states. Even though all member states can be classified as post-modern societies, their developmental paths are highly influenced by their unique cultural, political or environmental characteristics. This proposition - known as the *divergence hypothesis* of modernization theory (see Horowitz 1966; Moore 1966; Odum 1971) - stands in opposition to the idea that socio-economic, cultural and political development is a unilinear process taking on almost identical forms in all societies with regard to various characteristics such as labor force structure, level of development, technology, urbanization level, etc. - known as the *convergence hypothesis* of modernization theory (see Inkeless & Rossi 1956; Lenski & Lenski 1987; Rostow 1960). In line with the divergence hypothesis, we expect individualization processes to have different consequences in each of the European Union member states, depending upon their degree of modernization. Unfortunately, modernization is a key concept on which sociologists will never fully agree. In general, it refers to social changes that occur when traditional societies transform into modern ones through sub-processes such as industrialization, urbanization, democratization, bureaucratization, etc. Therefore, some authors stress the development of industrialization and technology (Nolan & Lensky 2008), while others emphasize the greater division of labor and the accompanying increase in interdependency (Elias 2000) or focus on urbanization (Poggi 1990). In this paper, we will not go into this debate, but will instead look at several measurable aspects of modernization and their relationship with sport participation (as is also done by Van Tuyckom 2011).

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## DATA AND METHODS

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### MEASURES

*Sport-related variables.* The dependent variables are self-reported measures of (i) sport participation in general, (ii) sport participation in fitness centers, (iii) sport participation in clubs, (iv) sport participation in parcs or out in the nature, and (v) uni- or multi-context sport participation. They are all derived from the most recent Eurobarometer survey in which sport participation was assessed. *Eurobarometer 72.3: Sport and physical activity* (European Commission 2010) was carried out in October 2009 at the request of the European Commission and covers the population of the respective nationalities of the European Union member states, aged fifteen years and older. A multi-stage, random probability sample design is applied and all interviews were conducted face-to-face in people's homes. Data on individuals aged eighteen and older were selected

( $N=26013$ ), yielding at least 477 (Cyprus) and at most 1512 (Germany) conducted interviews (European Commission 2010).

Sport participation in general is assessed by means of the question 'How often do you exercise or play sport?' Answer categories were: five times a week or more, three to four times a week, one to two times a week, one to three times a month, less often, and never. For analytical purposes, the original question is dichotomized with respondents answering 'never' defined as not participating in sport, and all others as sport participants. As for the context of sport participation, respondents are asked where they engaged in sport. 'In a fitness center', 'in a club' and 'in a parc, out in the nature' were among the answer categories. In addition, a variable is created measuring whether respondents were participating in sport in one or in multiple contexts.

*Modernization-related variables.* A first set of modernization indicators are economic variables, i.e. GDP per capita, public sector expenditure on health, students in tertiary education, and unemployment rate. A second set are variables related to urbanization, i.e. urban population, population density, total passenger cars, paved roads, and forest area. A third set of modernization indicators are policy variables, i.e. voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, control of corruption, and an average governance indicator. For all 27 European member states, common indicators for modernization were selected from international databases of health, economic, and other governmental organizations. Summary statistics (median, minimum, maximum) and sources for the different indicators can be found in Table 1 (see also Van Tuyckom 2011).

*Control variables.* The individual-level variables age, educational attainment (i.e. age when finished education) and gender are introduced to control for cross-national differences in the composition of sport participation-determining characteristics.



**Table 1:** Description and summary statistics (median, minimum, and maximum) of the variables included with their sources (all year 2005)

Indicator	Source	Description	Median	Min	Max
<i>Economic variables</i>					
<b>GDP</b>	HFA	Gross domestic product, US\$ per capita	22358,0	3109	61752
<b>Public sector expenditure on health</b>	HFA	Public sector expenditure on health as % of total government expenditure	13,6	6,0	19,2
<b>Students in tertiary education</b>	UNECE	Includes post-secondary education leading to an award not equivalent to a First university degree, a first university degree or equivalent, or a post-graduate university degree	38,6	5,8	58,9
<b>Unemployment rate</b>	HFA	Unemployment rate in %	7,7	4,4	17,7
<i>Urbanization variables</i>					
<b>Urban population</b>	HFA	% of urban population	69,1	51,0	97,2
<b>Population density</b>	HFA	Average population density per km <sup>2</sup>	108,4	15,5	1261,0
<b>Total passenger cars</b>	UNECE	Passenger vehicles (per 1000 population)	455,4	149,1	644,4
<b>New passenger cars</b>	UNECE	New passenger car registrations (per 1000 population)	29,5	0,3	93,9
<b>Paved roads</b>	WDI	Paved roads (% of total roads)	98	23	100
<b>Forest area</b>	WDI	Forest area in km <sup>2</sup> (% of total area)	32,1	0,9	66,5
<i>Policy variables</i>					
<b>Voice and accountability</b>	WGI	Extent to which citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media	1,2	0,4	1,8
<b>Political stability</b>	WGI	Likelihood that government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism	0,8	0,2	1,6
<b>Government effectiveness</b>	WGI	Quality of public services, civil service and degree of its independence from political pressures, quality of policy formulation and implementation, and credibility of government's commitment to such policies	1,1	-0,1	2,2

<b>Regulatory quality</b>	WGI	Ability of government to formulate and implement sound policies and regulations that permit and promote private sector development	1,2	0,2	1,8
<b>Rule of law</b>	WGI	Extent to which agents have confidence in and abide by rules of society, in particular quality of contract enforcement, property rights, police and courts, as well as likelihood of crime and violence	1,1	-0,2	2,0
<b>Control of corruption</b>	WGI	Extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests	1,0	-0,2	2,4
<b>Average governance indicator</b>	WGI	Calculated as the arithmetic mean of the six average indicators for each country	1,1	0,0	1,9

## ANALYSIS

The effects of national-level characteristics on individual-level outcomes can be conveniently evaluated via the use of a hierarchical linear model (HLM), a statistical procedure enabling net effects to be estimated at one level of analysis while controlling for variation at another level. This procedure thus enables to estimate country-level effects while controlling for cross-country variations in the composition of individual-level characteristics (Raudenbush & Bryk 2002). For instance, the proportion of women finished school after the age of 21 might exceed the proportion of men finished school after the age of 21 in some countries, but falls below in others. Differences in the average gap in sport participation across countries may partly reflect variations in the educational gender gap. By controlling for education in level 1, we eliminate this possible effect, i.e. the sport participation levels of males and females with the same level of education in all countries are compared.

Before estimating a two-level model, it is appropriate to ask whether in fact significant variation in the dependent variable across contextual units (here countries) exists and, if so, what proportion of the total variance is accounted for by the country level. To gauge the magnitude of variation between countries in sport participation, it is useful to begin by estimating an unconditional or empty model, that is, a model with no predictors at either level (Raudenbush & Bryk 2002). This produces point estimates for the grand mean as well as provides information on the variance at the individual and country-levels. The individual-level model is thus simply

$$(\textit{sportparticipation})_{ij} = \beta_{0j} \quad (1)$$

and the country-level model is

$$\beta_{0j} = \gamma_{00} + \nu_{0j}, \nu_{0j} \sim N(0, \tau_{00}) \rho. \quad (2)$$

This model is equivalent to a one-way ANOVA with random effects. Here  $\gamma_{00}$  is the average log-odds of sport participation across the 27 European countries (grand mean), while  $\nu_{0j}$  is the variance between countries in country-average log-odds of sport participation. The results from the empty model for sport participation in general are  $\gamma_{00} = 0.362$  (se=0.121),  $\hat{\tau}_{00} = 0.603$  (se=0.777). Thus, for a country with a random effect  $\nu_{0j} = 0$ , the expected log-odds of participation in sport is 0.362, corresponding to an odds of  $\exp(0.362) = 1.437$  or a probability of  $\exp(0.362) / (1 + \exp(0.362)) = 0.590$ . This result shows that on average, six in ten adult citizens of the 27 included European member states are participating in sport. The same procedure can be done for the other dependent variables, yielding the following results: 10.32% of European adults participates in sport in the context of a fitness center, 7.80% in the context of a sport club, and 50.29% in a parc or out in the nature. In addition, 28.99% of the respondents takes part in sport in more than one context.

In addition, the results show that there exists statistically significant variance at the country-level, making it clear that the multilevel nature of sport participation should not be ignored. In order to understand how much

of the overall variance in sport participation is attributable to either the individual or the country level, it is useful to calculate the intraclass correlation coefficient (ICC)<sup>1</sup>. The ICC measures the proportion of the variance of the dependent variable that exists between countries. As noted in other research (Steenbergen & Jones 2002; Van Tuyckom & Scheerder 2010), it is not surprising that the individual level accounts for a great deal when data are measured at the individual level, as in the case of the present study. Nonetheless, the proportion of the variance in participation in sport in general that exists between countries is very large: 15.44% (that is  $100 \times 0.603 / (0.603 + 3.29)$ ). Thus, 15% of the variance in general sport participation is between countries and 75% of the variance is at the individual level. The same procedure can be done for the other dependent variables, yielding the following ICC's: 15.71% for sport participation in the context of a fitness center, 16.65% for sport participation in the context of a club, 10.55% for participation in a parc or out in the nature, and 6.37% for participation in more than one context. These results is congruent with previous research into sport participation in Europe (Van Tuyckom & Scheerder 2010) and imply the need for more research aimed at explaining this cross-national variation.

Our two-level model can be represented by a set of equations, as follows:

$$(sportparticipation)_{ij} = \beta_{0j} + \beta_{1j}(men)_{ij} + \beta X + \varepsilon_{ij} \quad (3)$$

At the individual level, the dependent variable is sport participation of individual  $i$  in country  $j$ , and  $\beta_{0j}$  is the intercept denoting the average sport participation level. 'Men' denotes whether the individual is male (coded as 1) or female (coded as 0), and its coefficient  $\beta_{1j}$  represents the average gap in sport participation between men and women. The vector  $X$  denotes other individual-level explanatory variables (i.e. educational attainment and age),  $\beta$  denotes their coefficients, and  $\varepsilon_{ij}$  is the error term. This equation allows the intercept,  $\beta_{0j}$ , and the gender effect,  $\beta_{1j}$ , to vary across countries (i.e. to be random) while the effects of all the other variables are constrained to be the same across countries (i.e. to be fixed). At the second level, country-level characteristics (in this example only GDP per capita) explain these random effects, as presented in equation 4:

$$\beta_{0j} = \gamma_{00} + \gamma_0(GDPpercapita) + v_{0j} \quad (4)$$

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<sup>1</sup> The intraclass correlation coefficient for linear multilevel models is obtained by the following formula:  $\rho = \frac{\tau_{00}}{\tau_{00} + \sigma^2}$  where  $\sigma^2$  is the individual-level variance. However, in nonlinear models, such as our Bernoulli model, this formula is less useful because the individual-level variance is heteroscedastic (Raudenbush & Bryk 2002). Snijders & Bosker (1999) describe an alternative definition of the

ICC for nonlinear models as follows:  $\rho = \frac{\tau_{00}}{\tau_{00} + \pi^2/3}$ . This definition treats the dependent variable as an underlying latent continuous variable following a logistic distribution of which the variance is  $\pi^2/3$ .

In equation 4,  $\beta_{0j}$  denotes countries' average sport participation level, 'GDP per capita' is the Gross Domestic Product, in US\$ per capita, and  $V_{0j}$  is the error term.

All equations are separately estimated. Since the dependent variables are binary, the models we estimate are hierarchical generalized linear models (HGLM). Specifically, we estimate Bernoulli models with a logit link function (Raudenbush & Bryk 2002: 292-296). The models presented here are estimated using the software Hierarchical Linear Models for Windows (version 6.08) developed by Raudenbush, Bryk & Congdon (2000).

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## RESULTS

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### SPORTIZATION OF LIFESTYLES

Europeans nowadays are offered a differentiated sport culture in which they can put together their very own personal sport programs. Since so many choices exist, we would expect that the number of Europeans taking part in sport is very large. Turning to the results from Table 2, we notice, however, striking cross-national differences. Sweden emerges as having more people taking part in sport (93%) than any other European nation, followed by Finland (91%) and Denmark (79%). Besides the three Nordic countries, in six other member states, sport participation percentages exceed 65%: Slovenia (72%), Austria (71%), Ireland (70%), Belgium (69%), the Netherlands (68%) and Germany (65%). At the other end, Greece (30%), Bulgaria (36%), Portugal (40%), Hungary (40%) and Poland (43%) have the fewest citizens participating in sport.

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### DE-INSTITUTIONALIZATION OF SPORT PARTICIPATION

Following the de-institutionalization hypothesis, the described sport expansion would have to take place in favor of a variety of informal sport activities, i.e. in parcs, out in the nature. Again, Table 2 shows striking differences with respect to the settings in which citizens in the different member states choose to exercise. Exercising at a fitness center is most popular among Swedish respondents (27%), followed by those in the Netherlands (19%), Italy (18%), Finland (18%), Denmark (18%), Cyprus (17%) and Ireland (15%). Meanwhile, respondents in Hungary (2%), France (2%), Poland (3%), Lithuania (3%), Latvia (3%), Romania (4%), Slovenia (5%) and Estonia (5%) use fitness centers the least in the European Union. Sport clubs are particularly well used in the Netherlands (22%), Denmark (17%), France (16%), Germany (16%), Austria (14%), Ireland (13%), Luxembourg (13%), Belgium (13%) and Finland (12%), although they are not popular options in Greece (2%), Hungary (2%), Malta (2%), Romania (2%), Bulgaria (2%), Spain (2%) and Italy (3%). Finally, 84% of respondents in Slovenia say they exercise in parcs or outdoors, followed by 79% of those in Finland, 68% in Estonia, and 66% in Denmark and 65% in Austria. In contrast, this form of exercise is least popular in Greece (28%), Romania (29%), Malta (31%), Lithuania (36%) and Hungary (37%).

### 'MULTIPLICATION' OF SPORTING CONTEXTS

Those who want to keep up with 'trends' can no longer concentrate on one sport (or sporting context); variability is much more in demand. Sportization has been associated with a multiplication of sport activities, meaning that Europeans get involved in different sporting contexts. However, here again, Table 2 shows apparent cross-national differences across European Union member states. In Finland, 49% of people say they take part in sport in two or more contexts, while 48% of Danish and 41% of Slovenian and 41% of Bulgarians say the same. Those countries with the smallest proportions of multi-context users are Italy (11%), Portugal (17%), Romania (17%), Malta (18%) and Belgium (19%).

**Table 2:** Sport participation percentages for each of the 27 European Union member states (sorted by general sport participation level)

	sport participation				
	in general	in a fitness center	in a club	in a parc, out in the nature	in 2 or more contexts
Greece	30,2%	11,8%	1,70%	27,9%	25,0%
Bulgaria	36,2%	8,7%	2,40%	47,0%	40,5%
Portugal	39,6%	11,4%	5,00%	41,6%	16,8%
Hungary	40,0%	2,0%	1,90%	37,2%	21,2%
Poland	42,8%	2,6%	4,60%	45,0%	21,0%
Italy	45,7%	17,8%	3,40%	40,5%	10,5%
Romania	47,6%	3,6%	2,20%	29,1%	17,3%
Cyprus	48,2%	16,9%	3,90%	46,5%	26,9%
Latvia	51,8%	3,3%	4,10%	52,2%	25,9%
Lithuania	52,9%	2,8%	4,10%	35,9%	30,1%
Estonia	54,4%	5,0%	8,00%	67,9%	38,0%
Spain	56,3%	10,4%	2,40%	53,9%	33,3%
Malta	58,5%	6,6%	2,10%	30,6%	17,9%
Czech Republic	59,6%	10,3%	4,80%	60,2%	34,0%
United Kingdom	61,3%	11,7%	9,40%	43,2%	24,2%
Slovakia	61,4%	12,4%	4,20%	47,5%	30,7%
France	62,4%	2,2%	15,80%	52,9%	28,9%
Luxembourg	63,3%	7,5%	12,70%	57,9%	23,9%
Germany	65,3%	11,3%	15,60%	61,9%	33,1%
Netherlands	68,2%	18,8%	22,10%	42,6%	32,6%
Belgium	69,3%	6,6%	12,60%	39,1%	18,8%
Ireland	70,4%	15,4%	13,10%	44,7%	26,3%
Austria	70,9%	12,4%	13,90%	64,5%	33,5%
Slovenia	72,2%	4,5%	4,90%	84,2%	41,2%
Denmark	79,2%	17,5%	17,10%	66,6%	48,4%
Finland	91,2%	17,6%	11,60%	78,9%	48,7%
Sweden	93,3%	27,4%	6,50%	57,3%	32,7%

## SOCIO-STRUCTURAL DE-STRUCTURING OF SPORT PARTICIPATION

With the 'pluralization' of sport culture and the increasing availability of options, opportunities to take part in sport have opened up for everyone. This has led some researchers to state that social differences in sport involvement are leveled out. An analysis of the socio-demographic data reveals strong differences with respect to overall sport participation (see Table 3). First, men take more part in sport than women (OR 1,718 with  $p \leq .001$ ). Second, there is a strong link between education and sport participation: higher levels of education go hand in hand with higher sport participation levels. Third, sport participation steadily decreases with age (OR ranging from 0,706 to 0,377 with  $p \leq .001$ ). Moreover, the same conclusions can be drawn for club-sport participation. Contrary to our assumptions, one can thus not recognize in sport, that socio-structural differentiation criteria have become irrelevant. The pluralization of the sport culture does not automatically implies the leveling out of tendencies in sport involvement in general or in sport clubs. However, when looking at more individualized, informal ways of participating in sport, the picture changes. For participation in fitness centers, for instance, Table 3 shows that less male than female respondents participate (OR 0,117 with  $p \leq .001$ ). However, fitness center participation also increases with education and decreases with age. With respect to sport participation in a parc or out in the nature, education is no longer significant. Moreover, here again, women exceed their male counterparts (OR 0,632 with  $p \leq .01$ ). In addition, people are more likely to use outdoor spaces as they grow older (OR ranging from 1,278 to 1,950 with  $p \leq .001$ ).

## ROLE OF MODERNIZATION

First, the findings regarding national economic characteristics suggest that the probability to take part in sport is significantly higher in countries with higher levels of GDP per capita (OR 1,693 with  $p \leq .001$ ), public expenditure on health (OR 1,112 with  $p \leq .001$ ) and a lower employment rate (OR 0,946 with  $p \leq .05$ ). These results are consistent with previous research showing that the percentage of the population that never participates in sport is related to the degree of affluence in the country concerned (Van Bottenburg, Rijnen & Van Sterkenburg 2004; Van Tuyckom 2011). In sum, the sportization of lifestyle thus seems to depend upon the country's level of affluence. Sport participation in a fitness center is influenced by GDP per capita (OR 1,682 with  $p \leq .01$ ), participation in a sport club by GDP per capita (OR 2,059 with  $p \leq .001$ ) and public expenditure on health (OR 1,163 with  $p \leq .001$ ). Particularly interesting, however, is that none of the economic variables is associated with sport participation in a parc or out in the nature and sport participation in multiple contexts. When taking more individualized features of sport participation (de-institutionalization and 'multiplication' of sporting contexts) into account, it thus seems that a country's wealth is no longer determining.

Second, there is growing evidence that urbanization affects the levels of sport participation (Van Tuyckom 2011). In this study, we used the percentage of the urban population, the population density, the forest area, the number of paved roads and the number of total passenger cars as proxy measures of a country's level of urbanization, assuming that the more (densely populated) urban regions a country has, the higher the sport participation rates will be. Our results, however, only suggest that countries with a higher number of passenger

cars have higher sport participation rates (OR 1,002 with  $p \leq .05$ ), providing only weak evidence for an association between urbanization and general sport participation. The total number of passenger cars is also the sole determinant for sport participation in fitness centers (OR 1,003 with  $p \leq .05$ ). Participation in sport clubs, on the other hand, is associated with the total number of passenger cars (OR 1,003 with  $p \leq .001$ ), as well as the urban population (OR 1,025 with  $p \leq .05$ ). Sport participation in a parc or out in the nature, on the other hand, seems to have different determinants, in particular population density and forest area: the less dense and the more forest area, the more sport participation (OR 0,999 and OR 1,023 with  $p \leq .001$ ). Moreover, population density is also related to sport participation in multiple contexts: the less dense, the more sport participation in two or more different contexts (OR 0,999 with  $p \leq .001$ ). So when taking more individualized features of sport participation (de-institutionalization and 'multiplication' of sporting contexts), it seems that population density as a proxy for urbanization, does matter.

Third, we included six aggregated indicators addressing different aspects of the quality of a country's governance. Significant associations were observed for all six indicators with sport participation in general, participation in a fitness center and participation in a sport club. Participation in a parc or out in the nature, on the other hand, is related with only four of the indicators. Moreover, none of the indicators is related with sport participation in multiple contexts, suggesting that governance effectiveness does not matter in this regard. Although the complexity of the indicators makes it difficult to interpret the results, the findings in Table 3 suggest higher levels of sport participation in general, in fitness centers, in sport clubs and (although in a slightly lesser degree) in a parc or out in the nature in countries that can be described, among others, by more independent media and a higher capacity of the government to effectively formulate and implement sound policies. A better stability and higher effectiveness of a government thus seem to provide better opportunities for policy makers to focus on key public health problems such as physical activity. This was already the case after World War II, when many (stable!) West-European countries developed a noticeably active government policy with regard to sport. An important aim of this *Sport for All* policy was to inspire as many citizens as possible to get involved in sportive action and to take part in physical activities. The comparative case study by Stahl and colleagues (Stahl et al. 2002) confirms the positive effects of sport-friendly policy orientations on better sport infrastructures with higher sport participation rates as a result. Moreover, Ottesen (2004) showed that in the Scandinavian countries, characterized by a social democratic welfare system, the universal and egalitarian idea(s) have permeated not only general but also sport-specific policies throughout the years. This has led to a broad diversity of sport facilities as well as public and private infrastructure, aimed not only at children and youth, but also at adults and people from all social layers.



**Table 3:** Results of multilevel Bernoulli regression models, individual- and country-level effects

	sport participation				
	in general	in a fitness center	in a club	in a parc, out in the nature	in 2 or more contexts
<b>INDIVIDUAL-LEVEL EFFECTS</b>					
<b>Intercept</b>	1.178***	0.117***	0.081***	0.632**	0.416***
<b>Men</b>	1.282***	0.899*	1.516***	1.017	0.945
<b>Educational attainment (ref.cat.=finished school younger than age 15)</b>					
Finished school between age 16 and 19	1.705***	1.862***	1.348*	1.022	1.106
Finished school after age 20	3.119***	2.995***	2.049***	1.053	1.324***
Still studying	3.826***	2.567***	1.833**	0.896	1.610***
<b>Age (ref.cat.=18-24)</b>					
25-34	0.739**	0.794**	0.706***	1.278***	0.963
35-44	0.547***	0.579***	0.581***	1.536***	0.928
45-54	0.414***	0.412***	0.459***	1.541***	0.888
55-64	0.328***	0.292***	0.454***	1.909***	0.782*
65+	0.213***	0.227***	0.377***	1.950***	0.695***
<b>COUNTRY-LEVEL EFFECTS</b>					
<b>Economic variables</b>					
GDP per capita (log)	1.693***	1.682**	2.059***	1.194	1.057
Public expenditure on health	1.112***	1.033	1.163***	1.024	1.001
Students in tertiary education	0.997	0.988	0.983	1.007	1.009
Unemployment rate	0.946*	0.928	0.938	1.014	1.010
<b>Urbanization variables</b>					
Urban population	1.019	1.011	1.025*	0.994	0.998
Population density	1.000	1.000	1.000	0.999***	0.999***
Total passenger cars	1.002*	1.003*	1.003***	1.001	1.000
Paved roads	1.000	1.000	1.008	1.001	0.999
Forest area	1.013	1.004	0.993	1.023***	1.010
<b>Policy variables</b>					
Voice and accountability	3.901***	2.642**	6.182***	1.584	1.337
Political stability	3.622***	1.655	2.547**	1.748	1.365

Government effectiveness	2.699***	1.864**	3.207***	1.531***	1.351
Regulatory quality	3.319**	2.828***	5.080***	1.779*	1.541
Rule of law	2.409***	1.743**	2.869***	1.394*	1.223
Control of corruption	2.284***	1.621**	2.525***	1.436**	1.297
Average governance indicator	3.345***	2.086**	4.040***	1.652**	1.396
<b>INTRACLASS CORRELATION COEFFICIENTS</b>	15.44%	15.71%	16.65%	10.55%	6.37%

Note: \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$

## DISCUSSION

In this paper, we investigated sport participation levels across the 27 European Union member states within a multilevel framework, departing from Beck's individualization thesis and with a special focus on the role of modernization with respect to the assumed (i) sportization of lifestyles, (ii) de-institutionalization of sport participation, (iii) 'multiplication' of sporting contexts, and (iv) socio-structural de-structuring of sport participation. We conclude that the assumed *sportization of lifestyles* is still not reserved for everyone. Moreover, all assumptions appear to differ substantially across countries. Our second research question asked to what extent the different assumptions vary according to the national degree of modernization. Our findings indicate that modernization indeed contributes to cross-national differences in sport-related outcomes. In particular, the results show that living in countries with higher levels of GDP per capita has positive repercussions to both sport participation in general and participation in fitness centers. However, when looking at individualized features of sport participation (de-institutionalization and 'multiplication' of sporting contexts), a country's level of affluence is no longer determining. However, population density as a proxy of urbanization pops up as a determining factor (the less urbanization, the more sport participation out in the nature, and the more participation in two or more different sporting contexts). Finally, also a good quality of a country's governance seems to be beneficial for people's sport participation. A better stability and higher effectiveness of a government provides better opportunities for policy makers to focus on key public health problems, such as (the lack of) physical activity.

Unfortunately, the interrelatedness of several of the contextual indicators at the national level prevented us from fully separating the influences of several modernization variables by simultaneous estimation in a single model. Nevertheless, this study has meaningful implications for sport participation research using a multilevel framework and for research on sport and individualization in general. First, the results suggest that sport participation levels vary considerably across countries and depending on their degree of modernization. This implies that conclusions on the relationship between individualization and sport cannot be generalized to different populations on the basis of single country studies. This is consistent with the divergence hypothesis of modernization theory (Horowitz 1966; Moore 1966; Odum 1971). Second, our results show that the ways through which modernization influences sport appear to be complex and highly dependent on the exact type of

activity that is examined. Third, in order to test general hypotheses about the influence of national characteristics, distinguishing other indicators in addition to GDP per has proved to be fruitful: the findings present a more comprehensive picture of the role of modernization.

Future research should, however, deal with some limitations of the present study. First, unfortunately, our cross-sectional data did not allow us to analyze changes in sport participation over time. To adequately study how sport biographies in sport clubs, commercial sport providers or informal contexts develop and change against the background of societal modernization processes, longitudinal data is necessary. Second, the modernization indicators provide only part of the explanation for cross-national differences in sport participation. Future research should therefore also consider different forms of integration of sport and its organizations in the political constitution of a country, the way in which the parties involved in the system are co-ordinated, the complementary organization of different ways of life, the legitimacy of social relations, the meaning and function of the family, the position of women, the integration of religion, the forms and institutions of socialization and significance of sport, the employment and production structures, the varying provision of sporting facilities, etc. (see Camy et al. 2004; De Knop et al. 1996; Heinemann 1999, 2003; Tokarski et al. 2009, among others). Nevertheless, the present study indicates that further investigation of national-level indicators might contribute to a better understanding of the cross-national differences - and their underlying mechanisms - in sport participation.

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## APPENDIX

The ICC for each of the models is given in **table 4** below.

**Tabel 4: ICC for each of the models**

	sport participation				
	in general	in a fitness center	in a club	in a parc, out in the nature	in 2 or more contexts
<b>INDIVIDUAL-LEVEL EFFECTS</b>	0,172	0,174	0,168	0,104	0,065
<b>COUNTRY-LEVEL EFFECTS</b>					
<b>Economic variables</b>					
GDP per capita (log)	0,122	0,128	0,090	0,101	0,067
Public expenditure on health	0,160	0,172	0,131	0,106	0,068
Students in tertiary education	0,178	0,169	0,164	0,104	0,064
Unemployment rate	0,169	0,165	0,166	0,107	0,068
<b>Urbanization variables</b>					
Urban population	0,165	0,175	0,153	0,105	0,068
Population density	0,178	0,180	0,173	0,095	0,061
Total passenger cars	0,164	0,160	0,144	0,103	0,067
Paved roads	0,177	0,176	0,169	0,107	0,068
Forest area	0,161	0,180	0,173	0,065	0,059
<b>Policy variables</b>					
Voice and accountability	0,106	0,145	0,064	0,100	0,064
Political stability	0,108	0,169	0,144	0,094	0,064
Government effectiveness	0,075	0,139	0,058	0,089	0,057
Regulatory quality	0,117	0,144	0,079	0,095	0,059
Rule of law	0,088	0,141	0,064	0,095	0,062
Control of corruption	0,071	0,137	0,060	0,087	0,056
Average governance indicator	0,078	0,140	0,063	0,091	0,059

## CHAPTER 6: CONCLUSION AND DISCUSSION

While until the 1960s sport participation was in large part engaged in only by young, capable and achievement-oriented white males, mostly from the middle and upper social classes, over the course of time increasingly more groups became involved in sport. During the second half of the twentieth century, as levels of education and affluence generally grew, sport developed gradually into a mass phenomenon. The scepticism and resistance that sport for, for instance, the working class, women, and the elderly initially encountered, gave way to a pervasive belief that, given its positive effects, sport should be promoted for all. Therefore, sporting facilities were constructed on a large scale and sport organizations and governments stimulated the practice of sport in different European countries. Nowadays, sport has become an integral part of our society and seems to have perpetuated all social groups. Moreover, not only did participation rates increase and are sporting opportunities more diversified, sport has also been upgraded in a social and cultural sense and it seems as if all sectors in society have something to do with sport. In sum, as elaborated on in **chapter 1**, the expansion- and pluralization processes on societal level seem to correspond with a de-structuring and individualization of sport activities on the individual level. However, several national sport participation studies still describe a socially structured landscape and generally refute the idea that sport has become more democratic and egalitarian. Research into individual and cross-national differences in sport participation is therefore of great importance, both from a sociological as from a societal point of view. In this dissertation, we have aimed to provide a contribution to the literature on the assumed individualization of sport, which is criticized as being too narrow and unrealistic because it overlooks the significance of structural conditions that are even nowadays at play with respect to sport participation. We have particularly focused on cross-national differences in both the level and the social stratification of sport participation, and examined their association with contextual indicators at the national level. This with an explicit focus on the situation in the European Union.

This dissertation was divided into different chapters. The papers included in **chapter 2** were summarized under the heading of 'empirical comments'. **Paper 1** (*Survey quality and cross-national sport research. A case study of the 2007 ISSP survey*) discussed several components of survey quality by means of the 2007 ISSP survey on leisure time and sport and showed that the wide cross-national variation in sampling methods, modes of data collection and response rates leaves room for survey error with the potential to generate misleading or biased findings. In **paper 2** (*Sports - idrott - esporte - deporte - sportovní - ... The problem of equivalence of meaning in comparative sport research*), we addressed the issue of equivalence of meaning in the context of comparative sport research.

The papers included in **chapter 3** fit under the heading of ‘contextual description’. **Paper 3** (*Sport for All? Social stratification of recreational sport activities in the EU-27*) presented some insight into European citizens’ sporting activity patterns as well as the social stratification of sporting activity patterns in the EU-27. **Paper 4** (*A multilevel analysis of social stratification patterns of leisure time physical activity among Europeans*) extended paper 4 by examining the socio-demographic patterning of sporting activity among Europeans in a multilevel framework. **Paper 5** (*Gender and age inequalities in regular sport participation. A cross-national study of 25 European countries*) compared gender inequalities in sport participation across Europe, and the extent to which these vary by age. In **paper 6** (*Sport for All? Insight into stratification and compensation mechanisms of sporting activity in the EU-27*), special attention was given to sporting activity in comparison to other forms of physical activity (i.e. transport, occupation, household).

The paper included in **chapter 4** fits in the category of ‘classification’. The aim of **paper 7** (*Six sporting worlds. A cluster analysis of sport participation in the EU-25*) was to identify clusters of European nations grouped by sport participation outcomes (organizational context and intensity of sport participation in particular), in order to provide sensible groupings for international comparisons.

Finally, the papers included in **chapter 5** fit within the category of ‘hypothesis-testing’. **Paper 8** (*Macro-environmental factors associated with leisure time physical activity. A cross-national analysis of EU countries*) described European sporting patterns and identified some macro-environmental and -policy factors associated with sport participation rates at a national level. **Paper 9** (*Does country context matters? A cross-national analysis of gender and leisure time physical activity (LTPA) in Europe*) postulated that over and above the individual effect of gender on sport participation, there is an additional impact of a society’s gender-based (in)equality distribution. **Paper 10** (*Modernization and sport participation in 27 European member states in the light of Beck’s individualization thesis*) investigated sport participation levels across the 27 European Union member states within a multilevel framework departing from Beck’s individualization thesis and with a special focus on the role of modernization with respect to the assumed (i) sportization of lifestyles, (ii) de-institutionalization of sport participation, (iii) ‘multiplication’ of sporting contexts, and (iv) socio-structural de-structuring of sport participation.

In what follows, the results from the empirical papers from **chapter 3 to 5** are summarized. In addition, the limitations of our empirical research are considered. Next, attention is paid to some policy implications. Finally, some theoretical implications and opportunities for future research are discussed.



## SUMMARY OF EMPIRICAL RESULTS

As highlighted in **chapter 1**, the main attention in this dissertation was focused on the following five research questions:

- (1) To what extent does the level of sport participation differ across European Union countries?
- (2) To what extent does the level of sport participation vary according to contextual indicators at the national level?
- (3) To what extent are individual background characteristics associated with sport participation in the European Union?
- (4) To what extent does the strength of the association between individual background characteristics and sport participation differ across European Union countries?
- (5) To what extent does the strength of the association between individual background characteristics and sport participation vary according to contextual indicators at the national level?

We will shortly elaborate on these in the following paragraphs. For a detailed account of each of the five research questions, we refer to the empirical papers in **chapters 3 to 5**.

Europeans nowadays are offered a differentiated sport culture in which they can put together their very own personal sport programs. Since so many different choices exist, one would expect that the number of Europeans taking part in sport is very large. In all empirical papers, we notice, however, striking cross-national differences. In general, it can be concluded that of all European Union citizens, around 60% takes part in sport or exercise, implying that still four out of ten Europeans are not active in sport. There are, however, many differences in the nature and scope of sport participation between the member states of the European Union. The highest proportion of the population taking part in sport can be found in the Scandinavian member states, followed by the Western- and Central-European countries. There is a far lower level of sport participation in the Southern-European member states. Moreover, in the North-Western part of Europe, club-related sport is dominant and in the Southern-European countries gyms and fitness centers prevail, whereas in the new(er) member states, sport participation occurs more than averagely in a non-organizational context.

The above mentioned differences have led to a fascinating cultural diversity, which is distinctive to Europe, but also to structural inequalities in the opportunities for individuals to participate in sport. The percentage of people participating in sport is significantly related to the degree of affluence and governance effectiveness in the country concerned. For instance, as the GDP per capita, the public expenditure on health or the quality of a country's government (a measure of modernization) for the European Union member states increases, so does the percentage of individuals taking part in sport.

In addition, not only *between* but also *within* European Union member states, different patterns of inequality with respect to participation in sport could be found. In spite of its popularization, sport continues to be a socially structured activity. There is a lower degree of participation in sport within a variety of population groups, among which the most important are elderly and women. The chances of sport participation are also greater for those with a higher educational achievement or professional status. What is more, the structures in sport practices do not occur in all countries to the same degree: the magnitude of individual differences varies cross-nationally. With respect to gender, for instance, women residing in Southern countries (Portugal, Greece, Italy) appear to have the greatest deficit with respect to sport while the levels of female participation in Scandinavian countries and the Netherlands are equal or even higher than those of men. These gender differences are related to the level of affluence and the general level of gender-based equality.

## LIMITATIONS OF STUDY

Evidently, no research goes without limitations. In each of the empirical studies, certain limitations have been discussed. In the following paragraphs, only the issues most in need of some elaboration are discussed.

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### OTHER SPORT INVOLVEMENT INDICATORS?

First, throughout this dissertation, we analyzed only a single indicator of people's involvement in sport or leisure time physical activities. Our data were restricted to sport participation in general, and all inferences consequently pertain only to this form of activity. Moreover, although the Eurobarometer data were the best available, self-reported registrations might under- or overestimate the concept under scrutiny and might vary across gender, race, age, and education subgroups. Unfortunately, there is no research indicating in what sense the subjective, self-reported registration of sport participation differs from the objective, 'real' sport participation. For instance, gardening might be perceived as sport by elderly but not by youngsters. Or some might perceive contemplative activities such as yoga as sport, whereas others associate sport only with body contact and competition. Recent research into general physical activity (not limited to leisure time physical activity) shows, for instance, a difference between men and women in the comparison of objective (by means of accelerometers) and subjective (by means of the IPAQ-questionnaire) measures of physical activity (Mackay & Oliver 2011). For parental status, on the other hand, no differences were found. However, there is no evidence that these differences (according to gender or parental status, for example) vary between countries. So even though it is still an open question whether self-rated sport participation is fully comparable across social groups, it is important to stress that there is no reason to expect that differences between social groups in evaluating sport participation vary across countries. Evidently, as mentioned in several of the empirical papers, it is likely that the self-reported registration of sport participation differs between countries ('sport' can have a different connotation in different countries). As sport participation was asked by only a single question (not by a scale) in the Eurobarometer surveys, it is difficult to make any concrete statements in this regard. Nevertheless, in **paper 2** we have tried to show, by means of an exploratory factor analysis of the 'sport benefits' items of the 2004 Eurobarometer, that 'construct equivalence' is not evident. However, until now studies systematically assessing the cross-national comparability of self-ratings of sport participation across a large number of societies are lacking. Fortunately, this will probably change in the near future, as recent datasets such as the Survey on Health, Aging, and Retirement (SHARE) have included vignette experiments to deal with cross-cultural comparability problems. Nevertheless, future research should try to include other (or additional) indicators on inclusion in the sport system. It would, for instance, be interesting to have comparative information about membership rates in sport clubs, fitness centers or high school teams, but also about informal sport participation rates or about the differential popularization of the various branches of sport. This, however, means that researchers from multiple countries should join forces to obtain cross-

national comparable data on several of these indicators, as they are currently not (or only to a limited degree) available.

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#### OTHER INDIVIDUAL BACKGROUND CHARACTERISTICS?

Second, as discussed in the introductory chapter, individualization theorists like Ulrich Beck (Beck & Beck-Gernsheim 2002) suppose that in an age of mass consumption and media communication, traditional mechanisms such as gender and age are likely to have a less structuring effect on the way of thinking and behaving than in the past, and seem to be replaced by more intentional or 'symbolic' structuring mechanisms, such as consumption styles, mass media preferences and participation patterns in everyday life. The research of Moens & Scheerder (2004), for instance, shows that lifestyle factors such as media preferences and television viewing habits complement (but not replace!) traditional structural mechanisms like age, gender and socio-economic status. Therefore, these and related factors should be introduced in future research.

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#### OTHER CONTEXTUAL FACTORS?

Third, the contextual indicators adopted in this book provide only part of the explanation for cross-national differences in (the social stratification of) sport participation across the European Union. Therefore, it could be expected that investigation of other contextual indicators at the national level might contribute to a better understanding of the cross-national differences and their underlying mechanisms. Future research should consequently consider factors such as the different forms of integration of sport and its organizations in the political constitution of a country, the way in which the parties involved in the system are co-ordinated, the complementary organization of different ways of life, the legitimacy of social relations, the meaning and function of the family, the position of women, the integration of religion, the forms and institutions of socialization and significance of sport, the employment and production structures, the varying provision of sporting facilities, etc. (see Camy et al. 2004; De Knop et al. 1996; Heinemann 1999, 2003; Tokarski et al. 2009, among others).

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#### LONGITUDINAL APPROACHES?

Fourth, a major issue about our empirical papers concern their reliance on cross-sectional data, which might not accurately reflect individual changes in sporting activity over time. Nevertheless, each method has its advantages and disadvantages. Cross-sectional data of large population samples may be biased or suffer from cohort effects, but they can be collected in a relatively short period of time. Alternatively, longitudinal studies require arduous tracking of the same persons using constant methods over many years and are consequently very labour intensive and expensive, and might suffer from cohort emigration or other sources of attrition. In addition, persons followed over time might alter their behavior because the act of repeated monitoring might serve, inadvertently, as a stimulus for change. However, despite these limitations, several national longitudinal studies of sporting activity have been successfully conducted (Anderssen, Jacobs & Sidney 1996; Scheerder et al. 2006, 2008; Van Mechelen et al. 2000). Another, less expensive, option would be to collect retrospective

information on respondents sport participation behavior during childhood and adolescence in cross-sectional surveys. Unfortunately, although longitudinal or retrospective data including information on sport participation for all European Union countries would be interesting to both confirm and extend our cross-sectional findings, they are yet still to be collected.

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#### LOWER CONTEXTUAL UNITS?

Fifth, mainly driven by the available data, countries were chosen as contextual units in this book. Eurobarometer-surveys apply standardized measurement instruments so that they allow for cross-national comparisons between different countries. Nevertheless, apart from these pragmatic considerations, we believe that our focus on countries as units of analysis is justified. As discussed in **chapter 1**, notwithstanding globalization trends, sport is always embedded in a broader national cultural, political and economic context, characterized by particular beliefs, norms and values determining what kind of sporting behavior is acceptable. However, as shown in Figure 6 of **chapter 1** (the socio-ecological model for studying sport participation), we certainly not have the intention to suggest that the national level is the only relevant context for studying sport participation. Therefore, rather than arguing that the interplay between individual and contextual factors in influencing sport participation should be examined for only one contextual unit (i.e. countries), we are convinced that future research should strive at examining multiple contextual units (countries, regions, neighborhoods) simultaneously. Although these extensions fit perfectly within a multilevel framework, it requires the collection of comparable data in a large number of countries, regions, and neighborhoods, data that is currently not - or at least not in sufficient detail for comparison - available. Nevertheless, in line with the proposed socio-ecological model, we maintain that in order to obtain a comprehensive picture of how the broader social context affects individual's sport participation, it is important to recognize different contextual levels.

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#### LARGER NUMBER OF COUNTRIES?

Sixth, it should be noted that a drawback of using countries as contextual units is that the number of units available to be analyzed is necessarily rather low. This was especially the case in this dissertation as we focused on European Union countries and consequently possessed information on individuals from only 27 countries. Although this is sufficient for performing multilevel analyses with countries as the highest hierarchical level, statistical power at this level might be relatively low (Snijders & Bosker 1999). Consequently, part of the number of non-significant effects at the national level might have reached statistical significance if we would have been able to analyze larger numbers of contextual units or countries. In addition, partly because of the relatively low number of contextual units, some of the contextual indicators at the national level correlated very strongly, preventing simultaneous inclusion in the models. This has limited the possibility to draw firm conclusions on the role of these indicators in influencing sport participation levels. In sum, because of this rather low number of contextual units, we have not been able to test the hypotheses regarding the national context to their fullest potential. Nevertheless, quite substantial and robust effects at the national level (see

**paper 8** and **paper 10**) as well as interaction effects (see **paper 9**) have been found. Apparently, the associations with sport participation seem to be strong enough to be detected even in a relatively small sample of contextual units. Including a broader range of countries would consequently result in even stronger findings. Moreover, as the findings generated in this dissertation cannot be generalized to societies outside the European Union context, it would be interesting if future research would additionally focus on other parts of the world.

## POLICY IMPLICATIONS

During the second half of the twentieth century, sport has transformed into a mass phenomenon. Sport was no longer practiced in the closed circles of sport clubs, but increasingly took place in an informal, spontaneous and individualistic fashion. This development does, however, not imply that the goals of the *Sport for All* movement have been achieved. As the empirical papers in this dissertation have shown, the democratization of sport as postulated in the European Sport for All charter is certainly not (yet) completely accomplished. Houlihan (1999) has described some reasons for this (partial) failing of the *Sport for All* movement. One of these was that the sport culture has been extremely dynamic in the past 40 years. Sport has been ascribed several functions and effects and is expected to contribute to self-image and self-esteem, social ties and identity formation, socialization and integration and people's physical and psycho-social functioning (Heinemann 2005; Rittner & Breuer 2000; Van Bottenburg, Rijnen & Van Sterkenburg 2005). This created a fragmentation of sport with as a consequence that the unified view on *Sport for All* completely disappeared. The *Sport for All* idea crumbled and lacked unequivocality and recognizability. In addition, given the growing concerns about the increase in medical problems related to a sedentary lifestyle (i.e. heart and pulmonary diseases in the 1970s and 1980s, and obesity in the 1990s and 2000s), sport has increasingly become an element of health policy. Policy interventions which specifically focus on sport and leisure time physical activity due to their health benefits are, however, primarily inspired by the approaches used to tackle other problematic health behaviors such as smoking, diet, dental care or seat belt use. The main problem with these is that they attempt to bring about behavioral changes through mass media campaigns. They rely on the premise that individuals are aware of the importance of behavioral change and will alter their behavior when confronted with the consequences of it. However, interventions concentrating on the enhancement of knowledge about the value of sport and leisure time physical activity have proved to be rather ineffective, both in the short and the long term. As Van Bottenburg, Rijnen & Van Sterkenburg (2005) observe, this is not so strange as in comparison to other health behaviors such as excessive coffee drinking or the use of safety helmets, exercise and sport are much more determined by environmental, socio-economic and cultural variables (see the socio-ecological model described in **chapter 1**). As already mentioned throughout this dissertation, sport is a social phenomenon taking place and finding its meaning within a broader social context. Successful interventions in the domain of sport and leisure time physical activity should consequently recognize that they are *"changing, differentiated, social and cultural phenomena which are directly related to broader societal, technological and physical developments. They do not just deal with changing individual attitudes, but also the social, cultural and physical environment"* (Van Bottenburg, Rijnen & Van Sterkenburg 2005: 209). This demands action to be taken on different levels: the family, education, work, living environment, sport organizations, commercial sport providers, business world, media, and government. Special attention should be paid to the complex interplay between these factors both at the micro-level, meso- and macro-level (i.e. neighborhood, school, work, policy decisions at municipal, regional, national and European level, national and international sport organizations, corporations).

The European Union should, in view of its constitutional task and popular support, play a stimulating role through coordination, agenda-setting, research and funding. Given the social differentiation by which sport is characterized, policy strategies should be manifold in nature and find expression at different levels (De Knop et al. 2006). A differentiated *Sport for All* policy should take account of the fact that the provision of sport in the North-Western part of the European Union is at a different level to Southern- or Eastern-European Union regions and that sport participation is, among others, influenced by socially imposed gender cultures. Moreover, such policy should consider that older people participate less than young ones; that women are under-represented in sport clubs and over-represented in the commercial sport sector; that the urban situation is different from that in rural areas; etc. In sum, *Sport for All* interventions need to adopt a differentiated approach: differentiated according to European regions, gender, age groups, levels of educational attainment, etc. And this is exactly why it was/is essential to provide reliable and comparable information on differences in sport participation levels, not only from a national, but also from a cross-national perspective (as done in this dissertation).



## THEORETICAL IMPLICATIONS AND FUTURE RESEARCH

The empirical papers in this dissertation have shown that the expansion and pluralizing of sport participation has not totally whiped out social and geographical differences in sport engagement. As a consequence, scholars need to study sport participation within a European context without blindly accepting Beck's individualization these. Only the fact that sport has become a "*Faszinosum unserer Zeit*" (Krockow 1972: 7) cannot justify the uncritical acceptance of the theses of individualization theorists. In sum, not only a differentiation in policy (as elaborated above), but also a theoretical differentiation is needed in future research. An attempt should be made to develop an all-encompassing theoretical model making it possible to empirically question differentiated sport participation in different socio-structural contexts, taking into account both the general national socio-economic and cultural conditions and the complexity of modern sport, both the differentiation of the social structure and the differentiation of the sport world. Such attempts can be found in the work of Lamprecht & Stamm (1994, 1995, 1998) and Nagel (2003) who developed a model to explain differentiated free time (Lamprecht & Stamm) or sport activities (Nagel) taking the differentiation of the social structure into account. However, also these authors fail to look at the differentiations taking place within different types of sport or what possibilities for distinction the development of new sport arts or sporting contexts create. In what follows, we briefly discuss some points of orientation for future research.

With the increasing social openness, sport has lost much of its former distinctive character. And although merely being active in sport is not enough to distinguish oneself from others (as was the case some decades ago), sport is still particularly suited as a medium for status demonstration precisely because it has developed into a public good. Already some decades ago, Bourdieu (1979, 1991) has shown that individuals higher on the echelons of society, through a number of social processes, have cultural capital allowing to appreciate what is classified as 'highbrow' or 'legitimate' culture which dominates that consumed by the masses (i.e. non-legitimate, vulgar culture) (Weininger 2005). Moreover, to create distinction, the elite shows 'aesthetic distancing' to the culture of the masses. In that sense, cultural consumption is on elite to mass lines. For instance, certain types of sporting activities such as tennis, golf, water and winter sports - classified as highbrow or legitimate culture - are sacred among those in the higher classes, whereas others such as bowling, soccer or weightlifting are avoided through association with the masses. However, what is nowadays particularly interesting is not so much about who is practicing which sport, but who is practicing which sport *where and why*. The more sport participation has become popularized, the more important has become the quality, art and way of practicing sport. It makes a large difference whether one plays tennis in the local club or in an exclusive private club, or whether one goes skiing in the Black Forest or in St. Moritz. Examples in this regard are countless, not only in active sport but also in spectator sport. For instance, one can attend a soccer game in a covered and air-conditioned VIP-lounge or in between the hardcore fans. Differentiated analyses of these distinction mechanisms, finding their breeding ground in new trends and ways of participating in sport, are currently almost non-existing as sport sociological research has failed to look thoroughly at the inner

differentiation of different sport contexts and qualitative differences in the practice of sport. A cross-national perspective is completely lacking. Moreover, a theory that grew out of Bourdieu's work in the 1990s was the cultural omnivore-univore theory by Peterson (1992; Peterson & Kern 1996). In accordance to Bourdieu, Peterson highlighted that those higher in the social order consume more highbrow culture. But what is more, these individuals consume more of every form of cultural activity, even the popularized forms. These 'omnivores' are contrasted against a 'univore' group who consume only the popularized forms. Those in the higher social classes, through differing media channels, modernization of society and increasingly diverse social networks, are provided with the tools to develop aesthetic understanding of different genres of cultural participation, allowing them to critique it in relation to knowledge assembled, and thus allowing an omnivorousness nature to develop. Unfortunately, sport consumption (particularly from a cross-national perspective) remains largely underdeveloped, especially in relation to empirical quantitative research. Although Bourdieu already acknowledged that sporting preferences help to constitute symbolically distinguished lifestyles, much scholarly work has neglected the role of sport in class reproduction, and whether sporting lifestyles are now on omnivore to univore lines rather than elite to mass. One of the few quantitative studies in this regard in Europe was delivered by Wilson (2002) in his study of the 'paradox of social class and sport involvement', which found that those richest in cultural capital were least likely to be involved in sport associated with the masses. He concluded that those richest in cultural capital had the breath and depth of sport preferences, consistent with the cultural omnivore thesis. However, at the same time, those richest in cultural capital showed aesthetic distancing to popularized sport, suggesting limits to omnivorous behavior among the elite. Future research should extend this line of research and should also look at a polarizing of sporting preferences by other socio-demographic variables than social class. We expect sporting preferences to be explicitly structured according to age, gender, etc. alongside the more established stratification measures of education and social position.

What is also lacking, is research into how social structures, and particularly what type of social structures, develop as a consequence of the common action of individuals. Socio-structural characteristics are commonly treated as independent variables (which is also the case in this dissertation) under the assumption that social structure influences social action, but social actions can also influence social structures (Schimank 1992, 2000). This is, for instance, observable in some sport clubs, which *"aufgrund der Bedeutung des Geselligkeits-Klimas ... dem Prinzip der selbsttätigen Schichtung [folgen], denn hat sich in einem Verein erst einmal ein schichtenspezifischer Gruppenkern gebildet, so bleiben in der Regel die Angehörigen anderer Schichten weg"* (Krockow 1972: 59). (Cross-national) research should take both directions into account. In addition, it would be interesting to see how individual sport biographies in sport clubs, commercial sport settings or informal contexts develop and change against the background of societal modernization processes. However, this cannot be adequately answered with cross-sectional data. Longitudinal cross-national research would make it possible to compare sport participation rates of different age groups, gender or educational groups within the European Union over a longer period of time.

In sum, taking account of the above will lead to an ambitious and differentiated theoretical framework, in which both the differentiation of the social structure and the differentiation of the sport culture can be theoretically grasped, longitudinally analyzed and systematically related to each other.

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## APPENDIX: NEDERLANDSTALIGE SAMENVATTING

### *SPORT VOOR ALLEN: FEIT OF FICTIE? INDIVIDUELE EN CROSS-NATIONALE VERSCHILLEN IN SPORTBEOEFENING VANUIT EUROPEES PERSPECTIEF*

Na de Tweede Wereldoorlog ontwikkelden heel wat (West-)Europese landen een opvallend actief overheidsbeleid inzake sport en fysieke activiteit. Een belangrijk doel van dit *Sport voor Allen* beleid is zoveel mogelijk burgers aan te zetten tot actieve deelname aan sportieve bewegingsactiviteiten. Tot en met de jaren 1960 was sportbeoefening immers grotendeels voorbehouden voor jonge, bewegingscompetente en prestatiegerichte mannen, veelal afkomstig uit de midden- en hogere sociale klassen. Dat ook de maatschappelijke belangstelling voor sport en fysieke activiteit de voorbije decennia is toegenomen en actieve sportbeoefening is uitgegroeid tot één van de meest voorkomende vormen van vrijetijdsbesteding - in de literatuur samengevat als de 'versporting van de samenleving' en de 'vermaatschappelijking van de sport' - hoeft geen betoog. Tijdens de tweede helft van de twintigste eeuw, gekenmerkt door toegenomen welvaart, opleidingsmogelijkheden, etc. is sport geëvolueerd tot een massafenomeen. Daarenboven is het aanbod zodanig gediversifieerd dat eenieder een persoonlijke sportcocktail in mekaar kan knutselen. Sport maakt integraal deel uit van de samenleving en doordringt alle sociale groepen. Samengevat, expansie- en pluraliseringsprocessen op maatschappelijk niveau lijken samen te gaan met een de-structurering en individualisering van sportactiviteiten op individueel niveau. Echter, de popularisering van sport impliceert geenszins dat sportdeelname ook gedemocratiseerd(er) is geworden. Tal van nationale empirische studies tonen immers aan dat sportparticipatie nog steeds een sociaal gelaagd patroon vertoont naar geslacht, leeftijd, inkomen, opleidingsniveau, etc. Onderzoek naar individuele en cross-nationale verschillen in sportbeoefening is daarom van groot belang, zowel vanuit sociologisch als maatschappelijk perspectief. In dit proefschrift hebben we gepoogd een bijdrage te leveren tot de literatuur omtrent de vermeende individualisering van sportbeoefening, die bekritiseerd werd als zijnde te eng en onrealistisch omdat het voorbijgaat aan het belang van structurele (individuele en nationale) condities die ook vandaag de dag een rol blijven spelen met betrekking tot sportbeoefening. Onze focus lag in het bijzonder op cross-nationale verschillen in zowel het niveau als de sociale gelaagdheid van sportbeoefening binnen de Europese Unie, alsook op hun respectievelijke relatie met diverse contextuele indicatoren op landenniveau.

Het proefschrift is opgedeeld in verschillende hoofdstukken. De papers in **hoofdstuk 2** werden gebundeld onder de noemer van ‘empirische commentaren’. **Paper 1** (*Survey quality and cross-national sport research. A case study of the 2007 ISSP survey*) behandelde verschillende aspecten van survey kwaliteit aan de hand van de 2007 ISSP survey omtrent vrijetijd en sport, en toonde aan dat de grote cross-nationale variatie in sampling methoden, manieren van dataverzameling en mate van (non-)respons ruimte liet voor survey errors met mogelijke misleidende of foutieve bevindingen als gevolg. In de volgende papers maken we gebruik van Eurobarometer data. Eurobarometer surveys zijn gebaseerd op gestandaardiseerde instrumenten die cross-nationale vergelijkingen tussen verschillende landen mogelijk maken. Echter, alle studies die landen, regio’s of culturen vergelijken op sportgerelateerde dimensies en sportbeoefening in het bijzonder gaan uit van de assumptie van ‘equivalence of meaning’. Dit impliceert dat vergelijkingen tussen landen/regio’s/culturen enkel nuttig zijn indien ze zaken op dezelfde manier meten. Jammergenoeg is dit een onderwerp dat onderbelicht blijft in de sportliteratuur. Deze lacune werd aangepakt in **paper 2** (*Sports - idrott - esporte - deporte - sportovní - ... The problem of equivalence of meaning in comparative sport research*) door (i) het probleem van ‘equivalence of meaning’ binnen de context van comparatief sportonderzoek te bespreken, en (ii) de problemen en valstrikken gepaard gaande met ‘equivalence of meaning’ te illustreren aan de hand van exploratorische factoranalyse op basis van de 2004 Eurobarometer batterij rond voordelen van sportbeoefening.

De papers opgenomen in **hoofdstuk 3** passen onder de noemer van ‘contextuele beschrijving’. **Paper 3** (*Sport for All? Social stratification of recreational sport activities in the EU-27*) beschreef de algemene sportbeoefening van Europeanen alsook de sociale gelaagdheid van sportbeoefening binnen de EU-27, gebaseerd op bivariate analyses van de 2005 Eurobarometer data. **Paper 4** (*A multilevel analysis of social stratification patterns of leisure time physical activity among Europeans*) bouwde hierop verder door het socio-demografisch patroon van sportbeoefening bij Europeanen in een multilevel perspectief te plaatsen. **Paper 5** (*Gender and age inequalities in regular sport participation. A cross-national study of 25 European countries*) onderzocht geslachtsverschillen in sportbeoefening in Europa, en de mate waarin deze varieerden naargelang leeftijd, gebruik makend van de 2004 Eurobarometer data. In **paper 6** (*Sport for All? Insight into stratification and compensation mechanisms of sporting activity in the EU-27*) ging de aandacht naar de mate van sportbeoefening ten opzichte van andere vormen van fysieke activiteit (transport-, werk- of huishoudengerelateerd).

De paper in **hoofdstuk 4** past binnen de categorie van ‘classificatie’. Het doel van **paper 7** (*Six sporting worlds. A cluster analysis of sport participation in the EU-25*) was om clusters van Europese landen te identificeren op basis van sportbeoefening-gerelateerde uitkomsten (met name de organisatorische context en de intensiteit van sportbeoefening).

De papers in **hoofdstuk 5** tot slot passen onder de noemer van ‘hypothese-toetsend’. **Paper 8** (*Macro-environmental factors associated with leisure time physical activity. A cross-national analysis of EU countries*) beschreef sportpatronen binnen Europa en identificeerde diverse macro-omgevings- en -beleidsfactoren die



invloed uitoefenden op de mate van sportbeoefening, gebruik makend van de 2005 Eurobarometer survey. **Paper 9** (*Does country context matters? A cross-national analysis of gender and leisure time physical activity (LTPA) in Europe*) stelde vast dat bovenop het individuele effect van geslacht op sportbeoefening, er ook een bijkomende impact is van de algemene mate van gender(on)gelijkheid in een land. **Paper 10** (*Modernization and sport participation in 27 European member states in the light of Beck's individualization thesis*) onderzocht sportbeoefening in de 27 Europese lidstaten vanuit een multilevel perspectief, vertrekkend vanuit Beck's individualiseringsthese. Speciale aandacht ging daarbij naar de rol van modernisering met betrekking tot de veronderstelde (i) versporting van levensstijlen, (ii) de-institutionalisering van sportbeoefening, (iii) multiplicatie van sportcontexten, en (iv) socio-structurele de-structurering van sportbeoefening.

In wat volgt zullen de resultaten van de empirische papers uit **hoofdstuk 3 tot en met 5** kort worden samengevat. Concreet werd in deze papers uitgegaan van de volgende vijf onderzoeksvragen:

- (1) In welke mate verschilt het niveau van sportbeoefening tussen landen van de Europese Unie?
- (2) Zijn cross-nationale verschillen in sportbeoefening terug te brengen tot contextuele landenkenmerken?
- (3) In welke mate zijn individuele achtergrondkenmerken geassocieerd met sportbeoefening in de Europese Unie?
- (4) In welke mate verschilt de sterkte van de associatie tussen individuele achtergrondkenmerken en sportbeoefening tussen landen van de Europese Unie?
- (5) Zijn cross-nationale verschillen in de sterkte van de associatie tussen individuele achtergrondkenmerken en sportbeoefening terug te brengen tot contextuele landenkenmerken?

Door bovenstaande vragen te beantwoorden proberen we een beeld te schetsen van het Europese sportlandschap. Voor een gedetailleerd antwoord op elk van de vijf onderzoeksvragen referen we echter graag naar de respectievelijke empirische papers opgenomen in voorliggend proefschrift.

Europeanen hebben vandaag de dag een gediversifieerd sportaanbod ter beschikking waardoor ze een persoonlijk sportprogramma in elkaar kunnen botsen. Als gevolg kan dus verwacht worden dat sportdeelnamecijfers in de Europese Unie hoge toppen scheren. Uit onze empirische papers blijkt echter dat ongeveer 60% van alle Europeanen participeert in sport, wat impliceert dat nog steeds vier op de tien Europeanen niet actief participeert in sport. Meer nog, er treden opvallende cross-nationale verschillen op zowel wat de aard als de omvang van sportbeoefening betreft. Scandinavische landen blijken de koplopers te zijn, gevolgd door west- en centraal-Europese landen. Hekkenluiters zijn de zuid-Europese lidstaten. Daarenboven is in het noord-westelijke deel van Europa clubgeorganiseerde sport dominant, terwijl in de zuid-Europese landen fitnesscentra en sportscholen domineren. In de nieuwe(re) lidstaten wordt sport dan weer meer dan gemiddeld in een niet-organisatorische context beoefend. Deze verschillen hebben tot een fascinerende culturele diversiteit geleid, die eigen is aan Europa. Tegelijk zorgen ze echter ook voor structurele ongelijkheden in de mogelijkheden voor individuen om actief deel te nemen aan sport. Sportparticipatie blijkt

significant gerelateerd te zijn aan het nationale GDP per capita, publieke uitgaven aan gezondheidszorg, en diverse aspecten die betrekking hebben op de kwaliteit van de nationale regering. Daarnaast verschilt sportbeoefening niet alleen *tussen*, maar ook *binnen* lidstaten van de Europese Unie. De popularisering van sportbeoefening kan niet verhinderen dat sport vandaag de dag een gestructureerde activiteit blijft. Het sportieve vrijetijdsgedrag van de Europese burger blijkt namelijk sterk te verschillen in functie van een aantal traditionele socio-culturele en socio-economische karakteristieken, in het bijzonder geslacht, leeftijd, opleiding, beroepsstatus en geografische status. Meer nog, de mate van sociale gelaagdheid van sportbeoefening varieert eveneens binnen de Europese Unie. Met betrekking tot geslacht bijvoorbeeld, blijkt het verschil tussen vrouwen en mannen het grootst in zuid-Europese landen (Portugal, Griekenland, Italië). In Scandinavische landen en in Nederland participeren vrouwen dan weer evenveel (of zelfs meer) dan hun mannelijke tegenhangers. Daarenboven zijn deze geslachtsverschillen gerelateerd aan de graad van welvaart en het algemene niveau an gender-gebaseerde (on)gelijkheid in een land.

Een gedifferentieerd *Sport voor Allen* beleid dient dus rekening te houden met het feit dat het sportaanbod in noord- en west-Europa zich op een ander niveau bevindt dan in zuid- of oost-Europa, en dat sportbeoefening beïnvloed wordt door tal van historisch gegroeide factoren, waaronder sociaal opgelegde genderculturen. Bovendien moet dergelijk beleid rekening houden met een sociaal gestructureerd Europees sportlandschap waarin ouderen minder sporten dan jongeren, waarin vrouwen ondergerepresenteerd zijn in sportclubs en overgerepresenteerd zijn in de commerciële sector, waarin de situatie in steden verschilt van deze in rurale gebieden, etc. Voorliggend proefschrift heeft duidelijk gemaakt dat sport een sociaal fenomeen is dat plaatsvindt en slechts betekenis krijgt binnen een ruimere sociale context. Succesvolle beleidsinterventies in het domein van de sport mogen dus niet (louter) gericht zijn op het proberen wijzigen van individuele attitudes, maar dienen eveneens de ruimere sociale, culturele en fysieke omgeving in rekening te brengen. Dit impliceert dat speciale aandacht moet uitgaan naar het complexe samenspel tussen factoren op het micro-, meso- alsook macro-niveau (waaronder familie, onderwijs, media, bedrijfswereld, beleid, sportorganisaties, commerciële sportaanbieders, etc., allen instituties die gekenmerkt worden door tal van cross-nationale verschillen). Daarenboven moet de Europese Unie, in het kader van haar constitutionele taak en steunverlening, een stimulerende rol spelen door middel van coördinatie, agenda-setting, onderzoek en subsidies. Onderzoek dient op basis van betrouwbare en vergelijkbare informatie over verschillen in sportbeoefening gevoerd te worden, zowel vanuit lokaal-, regionaal-, nationaal- als Europees perspectief. Tot dit laatste heeft voorliggend proefschrift gepoogd een bijdrage te leveren.