

# Introduction

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The majority of previous research on individual participation in sport and physical activity in the social sciences has come from sociology, policy studies or management. Much of this research is qualitative and descriptive in nature. Other disciplines like sports medicine, sports psychology or sports training have examined individual participation in sport and physical activity from a clinical perspective, focusing on physiological and medical aspects of participation in sport and physical activity. Economic analysis of individual participation in sport and physical activity, and its relationship to health, is not well developed. To address this lack of economic research, the V Gijón Conference on Sports Economics, titled 'Sport and the Promotion of Health and Well Being', focused on economic analysis of the relationship between sports participation, health and well-being. The conference took place on 7–8 May 2010 in the auditorium of the Faculty of Trade, Tourism and Social Sciences Jovellanos of the University of Oviedo, located in Gijón, Spain. The conference was organized by Professors Stefan Késenne (University of Antwerp and Leuven), Brad Humphreys (University of Alberta) and Plácido Rodríguez (University of Oviedo).

The conference was presided over by the Rector of the University of Oviedo, Mr Vicente Gotor Santamaría. The conference opened with presentations by Mr Herminio Sastre Andrés, Vice-counsellor of Science and Technology of the Principality of Asturias; Mr Joaquín Miranda Cortina, Director of the Tourism Society of the local (Gijón) government; Mr Rafael Pérez Lorenzo, Dean of the Jovellanos Faculty, and Mr Plácido Rodríguez, representing the conference organizers. These presentations highlighted the importance of the conference focus.

This book is the outcome of the V Gijón Conference, which was organized by the Sport Economics Observatory Foundation of the University of Oviedo. Twelve researchers from Europe and North America presented papers at the conference. These authors were introduced by the following Spanish professors and researchers: Mikel Urdangarin (President

of EASM), Vicente Liern (Valencia University), Leonor Gallardo and Julio del Corral (Castilla-La Mancha University), Benito Pérez (Camilo José Cela University), Francesc Pujol (University of Navarra), Patricio Sánchez (University of Vigo), Levi Pérez, Juan Prieto and Cristina Muñiz (University of Oviedo) and José M. Sánchez (A Coruña University).

The book is of great importance, as it focuses on a relatively unexplored field in economics. It emphasizes and affirms that sport is an important determinant of the health and well-being of communities, economies and society, and that economics plays an important role in the decision to participate in sport and physical activity. The book also emphasizes why governments should continue subsidizing sport and physical activity in an environment of reduced public resources.

The chapters in this book fall into three broad areas. The first focuses on the relationship between sport and health. This issue was addressed by professors Jane Ruseski, Paul Downward, Climent Quintana-Domeque and Nazmi Sari.

In Chapter 1, Jane Ruseski and Brad Humphreys empirically investigate the relationship between participation in physical activity and health using a bivariate probit model. In this analysis, participation in physical activity is statistically identified with an exclusion restriction on a variable reflecting sense of belonging to the community. Estimates based on data from the Canadian Community Health Survey indicate that participation in physical activity reduces the reported incidence of diabetes, high blood pressure, heart disease, asthma and arthritis. Increasing the intensity and frequency of participation in physical activity appears to have a diminishing marginal impact on adverse health outcomes above the moderate level.

In Chapter 2, Paul Downward and Simona Rasciute also use a bivariate probit model to simultaneously analyse the effect of physical activity on self-reported health and well-being, using multiple waves of survey data from the UK. Their results indicate that physical activity has a positive effect on both individual health and well-being in this population. However, some activities, like cycling, have both health benefits and involve some disutility. A willingness-to-pay analysis is also performed. The results indicate a positive and significant willingness to pay for participation in physical activity and sport, but the authors argue that caution should be used when interpreting the willingness-to-pay results in the context of policy evaluation.

In Chapter 3, Jaume García Villar, Sonia Orefice and Climent Quintana-Domeque analyse the relationship between physical activity and obesity in Spain, using data from the 2006 Spanish National Health Survey. Obesity and the body mass index (BMI) are found to be negatively correlated with leisure physical activity, even when controlling for: physical effort in the

primary daily work activity, food consumption, smoking behaviour, educational level, household income, the number of children present in the home, marital status, health and dieting. The reported negative associations are similar for men and women. The intensity and type of physical activity are also negatively related to obesity, as measured by BMI, with the most strenuous exercising exhibiting the strongest correlation.

Recent epidemiological evidence shows that regular physical activity is effective in preventing several chronic diseases, and is associated with a reduced risk of premature death. In an effort to estimate the impact of physical activity on demand for hospital services, previous studies used cross-sectional data-sets. Estimated association in cross-sectional studies could be due to factors that cannot be controlled in a cross-sectional design. These factors could be time-variant or unobserved time-invariant characteristics of the individuals. Hence, the cross-sectional studies overestimate or underestimate the true effects of exercise on demand for hospital services. In Chapter 4, Nazmi Sari, using a panel data-set from Canada and panel data regression models, fills this gap in the literature. The results show that physical exercise decreases the demand for hospital services, and its marginal effect decreases as physical activity increases.

The second area focuses on the relationship between sport and labour market outcomes. The issue was addressed by Michael Lechner, Charlotte Cabane and Michael Davis.

In Chapter 5, Michael Lechner investigates the correlates of individual sports participation in Switzerland as well as the effects of sports participation on health and labour market outcomes using the first eight waves of the Swiss household panel (SHP) survey. Based on results from parametric econometric discrete choice models, better subjective health and health investments, as well as socio-economic status, are positively associated with increased participation in sport and physical activity. Furthermore, the probability of sports participation in the German-speaking part of Switzerland is much higher than in the rest of the country. The econometric analysis of the effects of participation in sport and physical activity on labour market outcomes are limited by the comparatively small sample sizes in the SHP, but nevertheless reveal positive earnings effects of participation in physical activity for men and negative effects for women.

Very little attention has been paid to the impact of sports participation on labour market outcomes in the European academic literature, even though it has received significant attention in North America. In Chapter 6, Charlotte Cabane considers sports participation as a way to improve or signal non-cognitive skills endowments in the labour market. It is known that non-cognitive skills are an important determinant of success in life, therefore Cabane analyses its impact on employment in Germany. She

tests the hypothesis that sporty people – *ceteris paribus* – have access to higher-quality jobs because of the non-cognitive skills they have gained during past participation in sport. Using objective measures of job quality, she demonstrates that participating in sport, or ‘being sporty’ matters for labour market outcomes and that its effect cannot be attributed to any other extra-curricular activities.

In Chapter 7, Michael Davis and Christian End examine the relationship between team sport success and income in the surrounding community. This study focuses on success in the National Football League (NFL) in the USA. They examine two ways that NFL team success can influence income in the local communities: consumption, that is, improved team performance leads to higher levels of buying and giving; and productivity, whereby improved team performance leads to greater workplace productivity. Using a panel data from 1969 to 2007, they analyse two different samples: the 50 largest US metropolitan areas in 2007 and any US metropolitan area with a Major League Baseball (MLB), National Basketball Association (NBA), NFL or National Hockey League (NHL) team during the sample period. While some of their results do not show the expected effect of a positive relationship between winning and economic impact, a model with real per capita income growth rate as the dependent variable reveals that there is an impact of winning on income.

The third area focuses on the relationship between sport and happiness and well-being. The issue is addressed by Brad Humphreys, David Forrest, Joseph Price, Georgios Kavetsos and Tim Pawlowski.

In Chapter 8, Haifang Huang and Brad Humphreys investigate the relationship between participation in physical activity and self-reported happiness in the USA. Four different empirical models, based on data from the Behavioral Risk Factor Surveillance System and US County Business Patterns data, all suggest that individuals living in a county with greater access to sports facilities are more likely to participate in physical activity and also report higher life satisfaction. The contribution of participation in physical activity to increased happiness is three times the size of the increased happiness associated with employment. The results indicate that both men and women gain happiness from participation in physical activity, and men appear to benefit more from participation than women.

David Forrest and Ian G. McHale examine the relationship between subjective well-being and participation in sport (narrowly defined here, to exclude non-competitive exercise activities), in Chapter 9. Analysis of survey data for more than 28000 adults in England reveals that those who take part in sport are (slightly) happier than those who do not, even after controlling for a rich variety of covariates controlling for factors such as demography, income, employment and state of health. A two-step

treatment effect model is estimated to investigate whether this positive association can be attributed to causation running from sport to happiness. Negative correlation between the error terms in step I (participation) and step II (happiness) implies that sports participants possess unobserved characteristics unfavourable to happiness such that the benefit to them from participation is in fact greater than appears from the raw data or from ordinary least squares regression. It is shown that access to sports facilities is a significant predictor of participation in sport, and therefore public provision of sport facilities can be justified in terms of the criterion that public expenditure should have a demonstrable impact on well-being.

Past studies find that high school athletes are much less likely to experience a teenage birth in the USA. Joseph Price and Daniel H. Simon show, in Chapter 10, that evidence of a link between participation in high school athletics and teen pregnancy depends crucially on the control variables included in the empirical model. They exploit the rapid expansion of sports participation among girls in the USA created by Title IX to investigate the relationship between athletic participation and teen pregnancy and find that, overall, a 10 percentage point increase in the fraction of girls playing sports in a US state increased the teen birth rate by 0.3 percentage points (about a 10 per cent increase). They also document racial differences in the effect of sports participation on the teen birth rate. The increase in the teen birth rate is most pronounced for young white women with some suggestive evidence that sport decreases teen birth rates among young black women.

Sedentary lifestyles are likely to have adverse tangible and intangible (that is, psychological) effects on individuals, including lower self-reported happiness. Focusing on the latter, Georgios Kavetsos, who unfortunately was unable to attend the conference, tests whether physical activity is related to increased levels of well-being, in Chapter 11. Tests based on cross-sectional data, including self-reported measures of individual happiness, from 34 countries confirms this hypothesis. The empirical evidence presented here suggests that higher levels of participation in sport are related to higher levels of happiness and lower levels of happiness are reported by physically inactive individuals.

In Chapter 12, Tim Pawlowski, Christoph Breuer and Jorge Leyva analyse the relationship between subjective well-being (SWB) and the availability of public sports facilities in Germany. Their empirical results indicate that the availability of public sports facilities positively influences SWB. Empirical evidence indicates that, in addition to other important factors, people are more likely to be satisfied with their life, health and leisure status, the closer they live to a public sports facility. Since governments are not only composed of benevolent politicians, in reality, the

maximization of a national happiness indicator is not the obvious ultimate goal of public policies. However, these insights might serve as inputs into the political process when deciding on the allocation of sports facilities.

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