

Lechner, Michael; Pawlowski, Tim

Research Report

SOEP-IS 2013 - On the socioeconomic effects of physical activity

SOEP Survey Papers, No. 1089

Provided in Cooperation with:

German Institute for Economic Research (DIW Berlin)

Suggested Citation: Lechner, Michael; Pawlowski, Tim (2022) : SOEP-IS 2013 - On the socioeconomic effects of physical activity, SOEP Survey Papers, No. 1089, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin

This Version is available at:

<https://hdl.handle.net/10419/253414>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by-sa/4.0/>

1089²⁰²²

SOEP Survey Papers
Series H - SOEP-IS Modules

SOEP-IS 2013 – On the socio-economic effects of physical activity

Michael Lechner and Tim Pawlowski

Running since 1984, the German Socio-Economic Panel (SOEP) is a wide-ranging representative longitudinal study of private households, located at the German Institute for Economic Research, DIW Berlin.

The aim of the SOEP Survey Papers Series is to thoroughly document the survey's data collection and data processing.

The SOEP Survey Papers is comprised of the following series:

Series A – Survey Instruments (Erhebungsinstrumente)

Series B – Survey Reports (Methodenberichte)

Series C – Data Documentation (Datendokumentationen)

Series D – Variable Descriptions and Coding

Series E – SOEPmonitors

Series F – SOEP Newsletters

Series G – General Issues and Teaching Materials

Series H – SOEP-IS Modules

The SOEP Survey Papers are available at <http://www.diw.de/soepsurveyspapers>

Editors:

Dr. Jan Goebel, DIW Berlin

Prof. Dr. Stefan Liebig, DIW Berlin and Freie Universität Berlin

Prof. Dr. David Richter, DIW Berlin and Freie Universität Berlin

Prof. Dr. Carsten Schröder, DIW Berlin and Freie Universität Berlin

Prof. Dr. Jürgen Schupp, DIW Berlin and Freie Universität Berlin

Prof. Dr. Sabine Zinn, DIW Berlin and Humboldt Universität zu Berlin

Please cite this paper as follows:

Michael Lechner and Tim Pawlowski. 2022. SOEP-IS 2013 – On the socio-economic effects of physical activity. SOEP Survey Papers 1089: Series H. Berlin: DIW/SOEP



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.
© 2022 by SOEP

ISSN: 2193-5580 (online)

DIW Berlin
German Socio-Economic Panel (SOEP)
Mohrenstr. 58
10117 Berlin
Germany

soeppapers@diw.de

SOEP-IS 2013 – On the socio-economic effects of physical activity

Module Title in SOEP Documentation: Socio-economic Effects of Physical Activity

Michael Lechner and Tim Pawlowski

Proposal for the SOEP-IS 2013

submitted by

Michael Lechner & Tim Pawlowski

Table of Content

| | |
|---|----|
| 1. Researchers | 2 |
| 2. Research Proposal | 5 |
| 2.1 Topic | 5 |
| 2.2 State of Research | 5 |
| 2.3 Research questions | 6 |
| 2.3.1 Physical activity and health | 7 |
| 2.3.2 Physical activity and education | 7 |
| 2.3.3 Physical activity and labour-market outcomes | 7 |
| 2.3.4 Physical activity and well-being | 7 |
| 2.3.5 Physical activity determinants | 8 |
| 2.4 Data requirements | 8 |
| 3. Preliminary version of the proposed survey questions | 10 |
| 3.1 English | 10 |
| 3.2 German | 13 |
| 4. References | 15 |

St. Gallen & Tübingen, December 19, 2012

1. Researchers

Prof. Dr. Michael Lechner

Swiss Institute for Empirical Economics Research (SEW-HSG)
University of St. Gallen
Varnbühlstrasse 14
CH-9000 St. Gallen, Switzerland
Phone: +41 71 224 2320
Email: Michael.Lechner@unisg.ch
www.michael-lechner.eu

*Michael Lechner studied economics at the University of Heidelberg (graduation 1989). Then he moved to the Economics Department of the University of Mannheim to finish his PhD in 1994 under the supervision of Professor Dr. Heinz König. He completed his habilitation at the same place in 1996. During these times, he spent one year at the London School of Economics (1986/7) and at Harvard University (John-F. Kennedy fellow in 1994/5). Since 1998 he is a Professor of Econometrics at the University of St. Gallen. He is also director of the Swiss Institute for Empirical Economic Research (SEW). One part of his research interests focus on developing and improving econometric methods for causal analysis in the field of microeconometrics. The other part of his research interests are related to economic questions coming from sports economics as well as labour and health economics. Michael Lechner is a research fellow of several networks, like CEPR, CESifo, and IZA, as well as being a member of the German Academy of Science Leopoldina. Currently he serves as an associate editor for *Econometric Reviews*, the *Journal of Labor Economics*, and *Labour*. He is a member of the editorial boards of *The German Economic Review* and *Foundations and Trends in Econometrics*.*

Selection of recent publications:

The performance of estimators based on the propensity score, forthcoming in the *Journal of Econometrics* (jointly with M. Huber, C. Wunsch).

The closer the sportier? Children's sport activity and their distance to sport facilities, *European Review of Aging and Physical Activity*, 8, 67–82, 2011 (jointly with A. Steinmayr, C. Felfe).

Long-Run Effects of Public Sector Sponsored Training in West Germany, *Journal of the European Economic Association*, 9, 742-784, 2011 (jointly with R. Miquel, C. Wunsch).

Do German Welfare-To-Work Programmes Reduce Welfare and Increase Work?, *German Economic Review*, 12, 182-204, 2011 (jointly with M. Huber, C. Wunsch, T. Walter).

The Effect of Disability on Labour Market Outcomes in Germany, *Applied Economics*, 43, 389-412, 2011 (jointly with R. Vazquez-Alvarez).

Does Leaving Welfare Improve Health? Evidence For Germany, *Health Economics*, 20, 484-504, 2011 (jointly with M. Huber, C. Wunsch).

The Relation of Different Concepts of Causality used in Time Series and Microeconometrics, *Econometric Reviews*, 30, 109-127, 2011.

A caseworker like me - does the similarity between unemployed and caseworker increase job placements?, *The Economic Journal*, 1430-1459, 2010 (jointly with S. Behncke, M. Frölich).

Exploiting Regional Treatment Intensity for the Evaluation of Labour Market Policies, *Journal of the American Statistical Association*, 105, 1014-1029, 2010 (jointly with M. Frölich).

- Unemployed and their Case Workers: Should they be friends or foes?, *The Journal of the Royal Statistical Society - Series A*, 173, 67–92, 2010 (jointly with S. Behncke, M. Frölich).
- Are Training Programmes More Effective When Unemployment is High?, *Journal of Labor Economics*, 27, 653-692, 2009 (jointly with C. Wunsch).
- Active Labour Market Policy In East Germany: Waiting For The Economy To Take Off, *The Economics of Transition*, 17, 661–702, 2009 (jointly with C. Wunsch).
- Long-run labour market and health effects of individual sports activities, *The Journal of Health Economics*, 28, 839–854, 2009.
- Sequential Causal Models for the Evaluation of Labor Market Programs, *Journal of Business & Economic Statistics*, 27, 71-83, 2009.
- What did all the money do? On the general ineffectiveness of recent West German labour market programmes, *Kyklos: International Review for Social Sciences*, 134-174, 2008 (jointly with C. Wunsch).
- Public employment services and employers: How important are networks with firms?, *Zeitschrift für Betriebswirtschaft*, 1/2008, 151-178, 2008 (jointly with S. Behncke, M. Frölich).

For a complete list please refer to <http://www.michael-lechner.eu>.

Prof. Dr. Tim Pawlowski

Chair for Sport Economics, Sport Management and Sport Media Research
University of Tübingen
Faculty of Economics and Social Science
Institute of Sports Science
Postal address: Wilhelmstraße 124 · 72074 Tübingen · Germany
Visiting address: Wächterstraße 67 · 72074 Tübingen · Room 101
Phone: +49 7071 29 76544
Email: tim.pawlowski@uni-tuebingen.de

Tim Pawlowski (b. 1980) studied Economics (University of Cologne), Sport Science as well as European Sport Studies (German Sport University Cologne - GSU) and earned his Ph.D. in Sport Economics in July 2009. He was appointed as Assistant Professor (W1) at GSU in April 2010 and joined the University of Tuebingen as Full Professor (W3) for Sport Economics, Sport Management and Sport Media Research in October 2012. His main fields of research are the analysis of sports demand (influencing factors / effects of sport participation) as well as the economics of (league) competitions. He was scholar in the UEFA Research Grant Program 2011/12 and conducted research projects for (amongst others) the Federal Ministry of Finance (BMF) and the Hamburger Sport-Verein e.V. (HSV).

Selection of recent publications:

- Pawlowski, T. & Breuer, C. (2012). *Die finanzpolitische Bedeutung des Sports in Deutschland*. Wiesbaden: Springer-Gabler Research.
- Pawlowski, T. (2012). *Wettbewerbsintensität im Profifußball - Eine empirische Untersuchung zur Bedeutung für die Zuschauer*. Wiesbaden: Springer-Gabler Research.
- Pawlowski, T. & Breuer, C. (2012). Expenditure elasticities of the demand for leisure services. *Applied Economics*, 44(26), 3461-3477.

- Pawlowski, T. & Anders, C. (2012). Stadium attendance in German professional football – The (un)importance of uncertainty of outcome reconsidered. *Applied Economics Letters*, 19(16), 1553-1556, doi:10.1080/13504851.2011.639725.
- Pawlowski, T., Downward, P., & Rasciute, S. (2011). Subjective well-being in European countries - On the age specific impact of physical activity. *European Review of Aging and Physical Activity*, 8, 93-102, doi:10.1007/s11556-011-0085-x
- Pawlowski, T. & Breuer, C. (2011). The demand for sports and recreational services: Empirical evidence from Germany. *European Sport Management Quarterly*, 11(1), 5-34.
- Pawlowski, T., Breuer, C. & Hovemann, A. (2010). Top clubs' performance and the competitive situation in European domestic football competitions. *Journal of Sports Economics*, 11(2), 186-202.
- Pawlowski, T., Breuer, C., Wicker, P. & Poupaux, S. (2009). Travel time spending behavior in recreational sports - An econometric approach with management implications. *European Sport Management Quarterly*, 9(3), 215-242.
- Wicker, P., Breuer, C. & Pawlowski, T. (2009). Are sports club members big spenders? Findings from sport specific analyses in Germany. *Sport Management Review*, doi:10.1016/j.smr.2009.07.001.
- Wicker, P., Breuer, C. & Pawlowski, T. (2009). Promoting sport for all to age-specific target groups – The impact of sport infrastructure. *European Sport Management Quarterly*, 9(2), 103-118.
- Pawlowski, T. & Breuer, C. (2012). Expenditures on sports products and services – Empirical Evidence. In L. Robinson, P. Chelladurai, G. Bodet & P. Downward (Eds.), *Routledge Handbook of Sport Management* (pp.354-372). Abingdon: Routledge.
- Pawlowski, T., Breuer, C. & Wicker, P. (2011). Travel time elasticities in recreational sports: Empirical findings for the professionalization in sport facility management. In H. Dolles & S. Söderman, *Sport as a Business. International, professional and commercial aspects* (pp. 53-74). Palgrave Mcmillan.
- Pawlowski, T., Breuer, C. & Leyva, J. (2011). Sport Opportunities and Local Well Being - Is Sport a Local Amenity?. In P. Rodriguez, S. Késenne, & Brad Humphreys (Eds.), *The Economics of Sport, Health and Happiness: The Promotion of Well-Being through Sporting Activities* (pp. 223-244). Edward Elgar.

For a complete list please refer to:

<http://medien2.ifs.sozialwissenschaften.uni-tuebingen.de/ifs/arbeitsbereiche/ab1/literatur/pawlowski.pdf>

2. Research Proposal

2.1 Topic

Our proposal for the SOEP-IS is focused on measuring the socio-economic effects of physical activity, i.e. activities which result in increased heart beats and increased breathing rates for a certain time (like sport or walking/cycling to work). So far, although being highly relevant for policy makers and managers, this area of research has been almost completely neglected by the scientific community due to a lack of reliable (panel) data in Germany (and other countries; for an overview see Downward, Dawson, & Dejonghe, 2009). Furthermore, due to a lack of such data, revealing a causal link between physical activity and some personal characteristics has not always been possible. Therefore, confusion exists with regard to some variables being either a “determinant” or an “effect” of physical activity.¹

In the following sections, the state of research (2.2), our research questions (2.3) and the data requirements (2.4) are presented and discussed in detail.

2.2 State of Research

Sports-related public expenditures² are commonly legitimated with the existence of market failures (externalities), such as a reduction of *health care costs* or the accumulation of *social capital* associated with sport (in a narrow sense) or physical activity (in a broader sense). However, empirical evidence validating those links in Europe is scarce and the applied measures and methods to quantify the effects lack in credibility as will be discussed in the following.

For instance, the positive impact of sports participation on the health *status* has already been largely investigated (US Department of Health and Human Services, 2008; Warburton, Nicol & Bredin, 2006; Sari, 2009; Sari, 2010). However, the reduction of health care costs associated with sports participation has - due to data availability - most often been quantified only in North America (e.g. Colditz, 1999; Katzmarzyk, Gledhill & Shephard, 2000). Since leisure time sports are very differently organized in North America than in Europe, it is difficult to infer any pattern from the American studies in order to analyze/predict the European case. Furthermore, since the opportunity costs of being physically active are not equally distributed amongst individuals (Wagner, 1987) thoroughly developed analysis based on micro data would be necessary.

Furthermore, most of the studies measuring the extent to which *social capital* is accumulated by physically active people or volunteers in non-profit sport clubs routinely employ “input” measures. For instance, the economic significance of voluntary activity in non-profit sport clubs is usually estimated by multiplying the hours spent on such voluntary activities and the average wage rate (e.g. Breuer, 2009). However, such simplifying “input” measures neglect the heterogeneous quality of social interactions in the clubs (Langer, 2006) and the possibility of reverse causality, i.e. joining sport clubs could be an expression of a certain degree of social capital (trust, see Downward, Pawlowski & Rasciute, *work in progress*). In

¹ For instance many papers routinely assume that personal income is a determinant of physical activity (e.g. Cerin & Leslie, 2008, Farrell & Shields, 2002), while others could detect that physically active people receive a higher personal income (Lechner, 2009).

² For instance, sports-related public expenditures in Germany sum up to around 10 billion Euros per year (Pawlowski & Breuer, 2012).

addition, a significant part of the literature existing on the returns of sports participation on education and labour-market outcomes again concerns American data (Barron, Ewing & Waddell, 2000; Eide & Ronan, 2001; Ewing, 2007; Lipscomb, 2007; Stevenson, 2010 or Caudill & Long, 2010).³ Studies using European data are scarce, however. Recent studies suggest that sports participation has a positive impact on children's cognitive and non-cognitive skills development (Felfe, Lechner & Steinmayr, 2010), on education (Pfeifer & Cornelissen, 2010) as well as on adult labour-market success (Lechner, 2009; Rooth 2011). Furthermore, Becchetti, Pelloni and Rossetti (2008) examine the GSOEP with the result that the relational goods, including sports participation individually and collectively increase subjective well-being (SWB). Actually, Lechner (2009) uses the GSOEP to explore (amongst others) how sports participation affects monthly earnings, health measures and subjective well-being. One of Lechner's findings suggests that physically active people (crudely defined) earn on average 1.200 Euros (per year) more than others. In addition, Rooth (2011) performs an experiment emphasizing the importance of leisure sports participation indication on curriculums in Sweden. He finds that people who mention that they are sporty have higher response rate than the others in terms of invitation to interviews. To the best of our knowledge, these are the principal European studies available on this topic.

Although these studies have clearly advanced our understanding about the socio-economic effects of physical activity, they are heavily restricted by the scarce availability of variables measuring physical activity. So far, in the GSOEP only one relevant question exists which evaluates the frequency of practicing sports on a 4-point-scale.⁴

However, since it is very likely that the effects of physical activity depend on various characteristics such as the kind of activity and the organizational format, studies based on this rough measure face the risk of ecological fallacies (Robinson, 1950) and it remains unclear which intensity and frequency of physical activity is needed to obtain those effects. Furthermore, due to a lack of information it is not always possible to reveal a causal link. Therefore, confusion exists with regard to some variables being either a "determinant" or an "effect" of physical activity. For instance, while traditional studies just claim for educational level and income as being a determinant of physical activity, recent studies could detect that significant returns of sports participation on the development of skills and labour-market outcomes exist (as discussed above for earnings).

To overcome the lack of reliable measures of physical activity, a detailed catalogue of questions is proposed for the SOEP-IS. This catalogue consists of thoroughly developed questions on the kind of physical activity, the frequency and intensity as well as the organizational format a sport is practiced and the possible persistence of activity patterns over the span of life.

2.3 Research questions

With such kind of additional information it will be possible to better understand the various factors influencing physical activity and the possible effects associated with physical activity. Therefore, we expect to find reliable answers on various related questions as will be discussed in the following.

³ A detailed literature review can be found in Felfe et al. (2011).

⁴ For instance, in the SOEP 2005 the question was as follows: "Which of the following activities do you take part in during your free time?" → "Doing sports yourself: at least once a week, at least once a month, less often, never".

2.3.1 Physical activity and health

Long term sports participation effects on health cannot be comprehended without having precise information of the nature of the practice in terms of sports types, intensity and frequency all along individual's life.

What is the optimal level of sports participation (for example using the reasoning of a health investment model along the lines of Grossman (1972))? Does the optimal level of sports participation varies with respect to the kind of sport? Is there a threshold above which sports participation has a negative impact on one's health? Furthermore, the question of healthy ageing is getting more topical and sports participation might improve the health of the elderly. But the question is to which extent? And also: is there an age (to begin or to continue with) after which practicing sport is not useful anymore?

With such kind of knowledge it might also be possible to estimate the reduction of health care costs associated with sports participation.

2.3.2 Physical activity and education

Studies using American data suggest that sports participation is an investment that students do on top of studying (Barron et al., 2000). And actually, the North American educational system highly promotes sports participation (scholarships, etc.). The European systems of education used to be very different. Having yearly precise information on individual's sport participation would allow us to study the evolution of it and the educational choices in Germany. Do sports influence educational choices or is it the other way round (Anderson, 2001)? How do sporty people use the educational system?

2.3.3 Physical activity and labour-market outcomes

North American studies outline the positive impact of sporting activities (usually during college) on adult labour-market outcomes (mainly wages). They struggle to demonstrate the existence of a causal relationship but also to precisely interpret the impact or to identify the channels. The GSOEP provides very rich panel data which contain a substantial number of information with respect to individual's labour-market position. Therefore, by adding more information on sports participation, we would be able to study the impact of sporting activities on very diverse outcomes.

First of all the question of the labour-market entry is extremely relevant since it is well-known that the first job has a determinant role in individual's career path. Then it would be interesting to analyze individual's career path and opportunities and also unemployment issues. Last, sports participation could have a non-negligible impact on labour-market exit. Because of a better health (and a better job?) sporty people would stay employed longer, but, since they are healthier and enjoy practising sport, they might retire earlier in order to benefit from their retirement time and do more sport.

2.3.4 Physical activity and well-being

Beyond the traditional economic representation of individual success (labour-market success), it is interesting to study the impact of physical activity on individual's well-being, too. Indeed, sporting activities favour a specific type of behaviour / within specific sports

some behaviour are promoted such as solidarity, tenacity, merit, etc. and they form a substantial part of individual's well-being determinants (Rasciute & Downward, 2010).

2.3.5 Physical activity determinants

Having a precise definition of individual's sports participation all along their life will allow us to better understand sporty behaviours. And this is relevant in case we find a positive impact of sports participation (thus we would want to impact / influence individual's sports participation). We expect different sporty behaviours according to age, gender, socio-economic background (see for example Bauman, Sallis, Dzewaltowski, & Owen, 2002). And the initial (childhood) sports participation might have an impact on the later participation. But the question is to which extent social background determines sports participation? Do non-sporty children become sporty adults? Do people change from doing team sports to individual sports with age (because it is easier in terms of organisation for example)?

Finally, three channels are traditionally highlighted in order to explain sports participation impact on education or labour-market outcomes. First, by improving individual's health status sporting activities improve individual's level of productivity (which leads to more success in school and on the labour-market). Second, by developing cognitive and non-cognitive skills sporting activities increase the human capital and thus the individual's productivity. Third, sports participation can be a way to socialize and then to enlarge and diversify one's social network.

Knowing the precise type of sport people do and the kind of investment they make in sport - in terms of time for example - will allow us to identify more precisely the channels at work.

2.4 Data requirements

As originally asked in the GSOEP, we are very interested in the frequency of sports participation. And since it is well-known that the length of the sporting activity is decisive we also add a respective question. Furthermore, in a time-consumption perspective it is relevant to know how much time people spend doing sports.

The cognitive and non-cognitive skills associated to sports participation depend on the type of sports people do (team sport versus individual sport, for example) but they also depend on the context. Differences may arise from differences in the intensity of the participation (competition level or not) and the environment (within a club, with friends, etc.). With respect to sports practice determinants information is already available in the GSOEP data, however, the information with respect to the sports infrastructure distance (for using such information in the context of children, see for example Steinmayr, Felfe, & Lechner (2011) is not asked every year. Therefore, we propose to collect this information yearly and in a more precise way (by asking about the means of transport and the exact time required to reach the place).

Last, we are interested in childhood sports participation. The same kind of information is already available in the GSOEP but only since 2000 and for 17 years-old respondents. Our questionnaire would allow collecting this information for each respondent which is relevant when one wants to construct the sports participation history of the individual. Furthermore, our questionnaire would permit to have more precise information with respect to the context of the sports participation.

The additional questions on sports proposed here should be asked to the entire SOEP-IS population for at least 5 years, i.e. wave E, wave I and the actual wave. Sections A to C should be included yearly while the section D should be put only once to each respondent.

We estimate that the response time needed for subjects to answer these questions will be less than 5 minutes. Computer assisted personal interviews (CAPI) can be applied, but CATI would also be possible.

Ideally, we would like to include the sports questions in the SOEP core sample. Indeed, there are a lot of research questions linking sports participation to numerous life outcomes (health, education, labour-market integration and outcomes, behaviors, etc.) that are waiting to be addressed. This information is available in the SOEP core sample but not in the SOEP-IS which by construction limits the extent of the research. It is worthwhile to outline that if these questions are included in the SOEP core sample the sports-related questions asked to children and adolescents could be removed. Therefore, it would not increase the length of the main questionnaire too much. If including these questions annually is not possible, it would be helpful if all, or at least some of them, can be included in a three year rotation.

Finally, our above mentioned data requirements are based on the assumption, that all variables inquired in the "individual question form" of the 2011 SOEP-IS will also be inquired in the 2013 (and ongoing) SOEP-IS.

3. Preliminary version of the proposed survey questions

3.1 English

A) Physical activity

Physical activity includes those activities which result in increased heart beats and increased breathing rates for a certain time. For instance, sport or walking/cycling to work as well as the shopping center belongs to physical activity.

- (1) Regarding the last seven days, how many days have you been active for at least 60 minutes per day?
→ ____ days
 - (2) Regarding a regular week, how many days are you active for at least 60 minutes per day?
→ ____ days
 - (3) How often do you actively practice sport, fitness or gymnastics?
 - a) Every day
 - b) Several times a week
 - c) Once a week
 - d) Less often
 - e) Never
 - f) I don't know.
 - g) No statement
- if (3) = a), b), c) or d) go to (4)
→ if (3) = e), f) or g) & age ≥ 18 years go to (22)

B) Most frequent sport

- (4) Regarding the whole year, which kind of sport do you practice most frequently?
→ Drop-down-choice (single sports)
- (5) How often do you usually practice this sport?
→ ____ times a week
- (6) How many minutes do you practice this sport every time?
→ ____ minutes
- (7) Do you participate in competitions regarding the sport you mentioned above, e.g. league matches, public runs or cycle races?
 - a) Yes
 - b) No
 - c) I don't know.
 - d) No statement.
- (8) Where do you generally practice this sport?
→ Drop-down choice (gym, swimming pool, park etc.)
- (9) How long do you usually need to reach your sport facility (gym, swimming pool, park etc.)?
→ ____ minutes

(10) How do you get there?

➔ Drop-down choice (car, bicycle, public transport, by foot etc.)

(11) In which organizational form do you practice this sport?

- a) Sports club
- b) Company-facilitated sports activities
- c) Commercial provider (incl. fitness center)
- d) Alone, not organized
- e) With friends or relatives, not organized
- f) Other: _____

(12) At which age did you start practicing this sport?

➔ ____ age in years

C) Second most frequent/common sports

(13) Regarding the whole year, which kind of sport do you practice the second most frequent?

➔ Drop-down choice (single sport)

(14) How often do you usually practice this sport?

➔ ____ times a week

(15) How many minutes do you practice this sport every time?

➔ ____ minutes

(16) Do you participate in competitions in the sport you mentioned above, e.g. league matches, public runs or cycle races?

- a) Yes
- b) No
- c) I don't know.
- d) No statement.

(17) Where do you generally practice this sport?

➔ Drop-down choice (gym, swimming pool, park etc.)

(18) How long do you usually need to reach your sport facility (gym, swimming pool, park etc.)?

➔ ____ minutes

(19) How do you get there?

➔ Drop-down choice (car, bicycle, public transport, by foot etc.)

(20) In which organizational form do you practice this sport?

- a) Sport club
- b) Company-facilitated sports activities
- c) Commercial provider (incl. fitness center)
- d) Alone, not organized
- e) With friends or relatives, not organized
- f) Other: _____

(21) At which age did you start practicing this sport?

➔ ____ age in years

D) Sports in childhood and adolescence

(22) If you think about your childhood and youth, which kind of sport did you practice (beyond school) most frequent?

➔ Drop-down choice (single sport)

(23) How often did you usually practice this sport?

➔ ____ times per week

(24) How many minutes did you practice this sport every time?

➔ ____ minutes

(25) Did you participate in competitions in the sport you mentioned above, e.g. league matches, public runs or cycle races?

- a) Yes
- b) No
- c) I don't know.
- d) No statement.

(26) Where did you generally practice this sport?

➔ Drop-down choice (gym, swimming pool, park etc.)

(27) In which organizational form did you practice this sport?

- a) Sport club
- b) Company-facilitated sports activities
- c) Commercial provider (incl. fitness center)
- d) Alone, not organized
- e) With friends or relatives, not organized
- f) Other: _____

3.2 German

A) Körperliche Aktivität

Unter körperlicher Aktivität verstehen wir alle Tätigkeiten, bei denen das Herz schneller schlägt und die Atmung für einige Zeit erhöht wird. Hierzu zählen beispielsweise Sport, der Fuß- oder Radweg zur Arbeit oder zum Einkaufen.

- (1) An wie vielen der letzten sieben Tagen waren Sie für mindestens 60 min am Tag körperlich aktiv?
→ ____ Tage
- (2) An wie vielen Tagen einer normalen Woche sind Sie für mindestens 60 min am Tag körperlich aktiv?
→ ____ Tage
- (3) Wie häufig treiben Sie aktiv Sport, Fitness oder Gymnastik?
 - a) jeden Tag
 - b) mehrmals die Woche
 - c) einmal die Woche
 - d) seltener
 - e) nie
 - f) weiß nicht
 - g) keine Angabe

→ wenn (3) = a), b), c) oder d) weiter mit (4),
→ wenn (3) = e), f) oder g) & Alter ≥ 18 Jahren weiter mit (22)

B) Häufigste Sportart

- (4) Welche Sportart üben Sie, das ganze Jahr betrachtet, am häufigsten aus?
→ *Drop-down-Auswahl (einzelne Sportarten)*
- (5) Wie oft üben Sie diese Sportart in der Regel aus?
→ ____ mal pro Woche
- (6) Wie viele Minuten üben Sie diese Sportart bei jedem Mal aus?
→ ____ min
- (7) Nehmen Sie in dieser Sportart auch an Wettbewerben, zum Beispiel an Ligaspielen, Volksläufen oder Radrennen teil??
 - a) ja
 - b) nein
 - h) weiß nicht
 - i) keine Angabe
- (8) Wo üben Sie diese Sportart in der Regel aus?
→ *Drop-down-Auswahl (Sporthalle, Hallenbad, Park etc.)*
- (9) Wie viele Minuten brauchen Sie in der Regel für den Weg zu diesem Sportangebot?
→ ____ min
- (10) Wie gelangen Sie zu diesem Sportangebot?
→ *Drop-down-Auswahl (Auto, Fahrrad, ÖPNV, zu Fuß etc.)*

(11) In welcher Organisation üben Sie diese Sportart hauptsächlich aus?

- a) Sportverein
- b) Betriebssport
- c) Kommerzieller Anbieter (auch: Fitness-Studio)
- d) alleine, unorganisiert
- e) mit Freunden, Bekannten, Verwandten, unorganisiert
- f) Sonstiges: _____

(12) In welchem Alter haben Sie mit dieser Sportart begonnen?

→ ____ Alter in Jahren

C) Zweithäufigste Sportart

(13) Welche Sportart üben Sie, das ganze Jahr betrachtet, am zweithäufigsten aus?

→ *Drop-down-Auswahl (einzelne Sportarten)*

(14) Wie oft üben Sie diese Sportart in der Regel aus?

→ ____ mal pro Woche

(15) Wie viele Minuten üben Sie diese Sportart bei jedem Mal aus?

→ ____ min

(16) Nehmen Sie in dieser Sportart auch an Wettbewerben, zum Beispiel an Ligaspielen, Volksläufen oder Radrennen, teil??

- c) ja
- d) nein
- j) weiß nicht
- k) keine Angabe

(17) Wo üben Sie diese Sportart in der Regel aus?

→ *Drop-down-Auswahl (Sporthalle, Hallenbad, Park etc.)*

(18) Wie viele Minuten brauchen Sie in der Regel für den Weg zu diesem Sportangebot?

→ ____ min

(19) Wie gelangen Sie zu diesem Sportangebot?

→ *Drop-down-Auswahl (Auto, Fahrrad, ÖPNV, zu Fuß etc.)*

(20) In welcher Organisation üben Sie diese Sportart hauptsächlich aus?

- g) Sportverein
- h) Betriebssport
- i) Kommerzieller Anbieter (auch: Fitness-Studio)
- j) alleine, unorganisiert
- k) mit Freunden, Bekannten, Verwandten, unorganisiert
- l) Sonstiges: _____

(21) In welchem Alter haben Sie mit dieser Sportart begonnen?

→ ____ Alter in Jahren

D) Sport im Kindes- und Jugendalter

(22) Wenn Sie an Ihre Kindheit und Jugend zurückdenken, welche Sportart haben Sie außerhalb der Schule am häufigsten regelmäßig ausgeübt?

→ *Drop-down-Auswahl (einzelne Sportarten)*

(23) Wie oft haben Sie diese Sportart in der Regel ausgeübt?

→ ____ mal pro Woche

(24) Wie viele Minuten haben Sie diese Sportart bei jedem Mal ausgeübt?

→ ____ min

(25) Haben Sie in dieser Sportart auch an Wettbewerben, zum Beispiel an Ligaspielen, Volksläufen oder Radrennen teilgenommen??

- e) ja
- f) nein
- l) weiß nicht
- m) keine Angabe

(26) Wo haben Sie diese Sportart in der Regel ausgeübt?

→ Drop-down-Auswahl (Sporthalle, Hallenbad, Park etc.)

(27) In welcher Organisation haben Sie diese Sportart hauptsächlich aus?

- m) Sportverein
- n) Betriebssport
- o) Kommerzieller Anbieter (auch: Fitness-Studio)
- p) alleine, unorganisiert
- q) mit Freunden, Bekannten, Verwandten, unorganisiert
- r) Sonstiges: _____

4. References

- Anderson, D. (2001). 'If you let me play': The Effect of Participation in High School Athletics on Students' Educational and Labor-Market Success. Working Paper.
- Barron, J. M., Ewing B. T., & Waddell, G. R. (2000). The Effects of High School Athletic Participation on Education and Labor Market Outcomes. *The Review of Economics and Statistics*, 82, 409-421.
- Bauman, A., Sallis, J. F., Dzewaltowski, D. A., & Owen, N. (2002). Toward a Better Understanding of the Influences on Physical Activity: The Role of Determinants, Correlates, Causal Variables, Mediators, Moderators, and Confounders. *American Journal of Preventive Medicine*, 23(2S), 5-14.
- Becchetti, L., Pelloni, A., & Rossetti, F. (2008). Relational goods, sociability, and happiness, Department of Communication. Working Paper No 39.
- Breuer, C. (2009). *Sportentwicklungsbericht für Deutschland 2007/2008*. (Wissenschaftliche Berichte und Materialien des Bundesinstituts für Sportwissenschaft). Köln: Sport und Buch Strauß.
- Caudill, S. B. & Long, J. E. (2010). Do former athletes make better managers? Evidence from a partially adaptive grouped-data regression model. *Empirical Economics*, 39, 275–290.
- Cerin, E. & Leslie E. (2008). How socio-economic status contributes to participation in leisure-time physical activity. *Social Science & Medicine*, 66, 2596-2609.
- Colditz, G. A. (1999). Economic costs of obesity and inactivity. *Medicine and Science in Sports and Exercise*, 31(11), 663-667.
- Downward, P., Dawson, A., & Dejonghe, T. (2009). *Sports Economics - Theory, Evidence and Policy*. Amsterdam: Elsevier.
- Eide, E. R. & Ronan, N. (2001). Is participation in high school athletics an investment or a consumption good? Evidence from high school and beyond. *Economics of Education Review*, 20, 431–442.
- Ewing, B. T. (2007). The Labor Market Effects of High School Athletic Participation Evidence From Wage and Fringe Benefit Differentials. *Journal of Sports Economics*, 8, 255-265.

- Farrell, L. & Shields, M. A. (2002). Investigating the economic and demographic determinants of sporting participation in England. *Journal of the Royal Statistical Society A*, 165, 335-348.
- Felfe, C., Lechner, M., & Steinmayr, A. (2011). Sports and Child Development. IZA discussion paper.
- Grossman, M. (1972). On the Concept of Health Capital and the Demand for Health. *The Journal of Political Economy*, 80, 223-255.
- Katzmarzyk, P. T., Gledhill, N., & Shephard, R. J. (2000). The economic burden of physical inactivity in Canada, *Canadian Medical Association Journal*, 163(11), 1435-1440.
- Langer, M. (2006). *Öffentliche Förderung des Sports. Eine ordnungspolitische Analyse* (Volkswirtschaftliche Schriften, 548). Berlin: Duncker & Humblot.
- Lechner, M. (2009). Long-run labour market and health effects of individual sports activities. *Journal of Health Economics*, 28, 839-854.
- Lipscomb, S. (2007). Secondary school extracurricular involvement and academic achievement: a fixed effects approach. *Economics of Education Review*, 26, 463-472.
- Long, J. E. & Caudill, S. B. (2001). The Impact of Participation in Intercollegiate Athletics on Income and Graduation. *The Review of Economics and Statistics*, 73, 525-531.
- Pawlowski, T. & Breuer, C. (2012). *Die finanzpolitische Bedeutung des Sports in Deutschland*. Wiesbaden: Springer-Gabler Research.
- Pfeifer, C. & Cornelissen, T. (2010). The impact of participation in sports on educational attainment - New evidence from Germany. *Economics of Education Review*, 29(1), 94-103.
- Rasciute, S. & Downward, P. (2010). Health or Happiness? What Is the Impact of Physical Activity on the Individual? *Kyklos*, 63, 256-270.
- Robinson, W. S. (1950). Ecological correlation and the behavior of individuals. *American Sociological Review*, 15(3), 351-357.
- Rooth, D. (2011). Work Out or Out of Work: The Labor Market Return to Physical Fitness and Leisure Sport Activities. *Labour Economics*, 18, 399-409.
- Sari, N. (2009). Physical Inactivity and Its Impact on Healthcare Utilization. *Health Economics*, 18, 885-901.
- Sari, N. (2010). A Short Walk a Day Shortens the Hospital Stay: Physical Activity and the Demand for Hospital Services for Older Adults. *Canadian Journal of Public Health*, 101, 385-389.
- Steinmayr, A., Felfe, C., & Lechner, M. (2011). The closer the sportier? Children's sport activity and their distance to sport facilities. *European Review of Aging and Physical Activity*, 8(2), 67-82.
- Stevenson, B. (2010). Beyond the Classroom: Using Title IX to Measure the Return to High School Sports. *Review of Economics and Statistics*, 92(2), 284-301.
- U.S. Department of Health and Human Services (2008). *Physical Activity Guidelines Advisory Committee Report*.
- Wagner, G. (1987). Sport as a means for reducing the cost of illness - Theoretical, statistical and empirical remarks. *International Review for the Sociology of Sport*, 22(3), 217-227.
- Warburton, D. E., Nicol, C. W., & Bredin, S. S. (2006). Health benefits of physical activity: the evidence. *Canadian Medical Association Journal*, 174(6), 801-809.