Summary

Growth opportunities for sport?

An explanatory model of sports participation

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Summary, conclusions and discussion

Half the Dutch population regularly participate in sport; the other half do not participate, or do so only occasionally. Why is that? Sports policymakers are looking for ways to encourage people to participate (more) in sport and exercise. Is it possible to identify characteristics of individuals or their environment which are associated with a greater probability of participation in sport? Can policy actions change these characteristics (assuming that this would indeed lead to increased participation in sport)? A theoretically-based empirical explanatory model can be of help in seeking answers to these questions. To develop such a model, the Netherlands Institute for Social Research (SCP) and the Dutch National Institute for Public Health and the Environment (RIVM) organised an expert meeting to identify the scope for such a model and to discuss the importance of the various characteristics and the extent to which they can be influenced. RIVM and SCP then carried out a joint review of international research results concerning correlations between characteristics and participation in sport and physical activity. Finally, SCP developed a model to identify characteristics which are empirically related to participation by Dutch people in sport. In this concluding chapter we summarise the results in relation to the outcomes of the expert meeting and the review, and discuss the possibilities of a number of policy scenarios (§ S.1). In section S.2 we discuss the caveats and points where the model could be improved, and in section S.3 we take a step back and view the results of this study against the broader backcloth of societal developments.

S.1 The model: outcomes and policy scenarios

Social-ecological theory as a basis for understanding the importance of characteristics

In looking to identify ways of encouraging people to participate (more) in sport and physical activity, we took social-ecological theory as a basis (Bronfenbrenner 1986; see also Bauman et al. 2012; King et al. 2000; Spence & Lee 2003). This theory provides an insight into different levels of influence and draws on knowledge from a number of research disciplines. The model is based on the assumption that characteristics that are close to the individual (such as age or motives) are more directly associated with behaviour than characteristics that are more distant from the individual (such as policy). Based on a literature review, we built as complete a picture as possible of theoretically relevant characteristics. Where available in databases, we used these characteristics in the empirical model to map their actual relationship with participation in sport. Since a model is by definition a simplified reflection of reality, the outcomes must be interpreted within the bounds of what the model is capable of. As the sports provision and sports policy for young people (aged 6-19 years) differs from that for adults (20 years and older), we developed separate models for these two groups.

Research question 1: Which personal, interpersonal, environmental and policy characteristics are related to participation in sport and the context in which that participation takes place, and what is the relative importance of these characteristics?

Socio-economic characteristics, motives and interpersonal characteristics play a major role in explaining differences in the frequency[1] and context of sports participation.[2] As expected, characteristics which are further removed from respondents, such as environmental characteristics and policy, are less closely associated with sporting behaviour.

Age and health exhibit a strong relationship with sport among both young people and adults. In the model for young people, personal motives make a strong contribution to the explanatory power in relation to both the frequency and context of sports participation. Young people who play sport frequently (i.e. ≥ 40 times/year) attach particularly high value to improving their performance and to competition, a characteristic that is also related to playing sport in an voluntary sports club. A more varied set of motives is important for adults: improving health, condition or performances and having fun while doing the activity. Also a clear relationship can be observed with the context in which adults engage in sport: health motives are closely related to participation in sport in both a commercial and an individual context, and a strong desire to improve performance is strongly correlated with participation in an voluntary sports club.

Interpersonal characteristics are represented in our model by (previous) sports participation by parents, participation by a partner where present (in the model for adults) and parental educational level (in the model for young people). For young people, the characteristics of both parents are related to frequent sports participation, and especially in an voluntary sports club. Among adults, too, following the example of others is an important factor in frequent participation in sport; having parents who took part in sport and a partner who participates in sport are both positively associated with frequency of participation. People thus follow a good role model. There is also a positive relationship between having a sporting partner and all forms of sporting context.

Characteristics related to the social and physical environment and to sports policy offer only a limited explanation for differences in sporting behaviour, as might be expected based on the theoretical framework. Both the liveability of the neighbourhood (including the social environment, safety and presence of all kinds of amenities) and characteristics of the physical environment (accessibility of sports facilities and activity friendliness environment) add little to the explanatory power of the model, and this applies for both young people and adults. Similarly, financial aspects of local authority sports policy (share of sports budget in total municipal budget, participation in Youth Fund for Sport & Culture) also add little to the explanation, as do specific policy interventions (deployment of neighbourhood sports coaches, participation in intervention programmes). One possible explanation for this is that municipal policy is employed mainly in neighbourhoods where sports participation by residents is lower. There is by contrast a clear relationship between the liveability of the neighbourhood and voluntary sports club membership, including after controlling for the effects of socio-economic characteristics of the respondent. This applies among both young people and adults.

Acceptable explanatory power

The characteristics explain a quarter of the difference in sports participation (24%) and sports context (25%) between young people, with motives and interpersonal characteristics accounting for the largest share. The explanatory power among adults is lower (16-18%), with motives once again accounting for the largest share, this time along with socio-economic characteristics. This level of explanatory power is usual for an empirical model which aims to explain social behaviour. If we return to the starting point of a social-ecological model, our analysis confirms that characteristics close to the individual, in particular, are most closely correlated with sports frequency and context, for both young people and adults. While characteristics of the physical and social environment and policy do add some explanatory power, this is limited.

Empirical findings and expert opinion complementary

If we place these outcomes alongside the conclusions of the expert meeting, we see that the experts regard all levels of characteristics (individual, interpersonal, environmental and policy) as relevant for Dutch citizens' participation in physical activity and sport. They see a much smaller distinction between the relative influence of personal and environmental characteristics, somewhat contradicting our empirical model. The reason for this lies in the fact that the experts were answering a different question. They also focused mainly on characteristics which can be influenced, and these are mainly the environmental variables; they explained which characteristics they consider important for encouraging sporting behaviour, whereas the model looks for explanations of differences in that behaviour. These two perspectives are complementary. Not all characteristics explain sporting behaviour to the same degree, but this does not mean they are unimportant in encouraging sports participation.

The experts did see clear differences in the ability of policy to influence the characteristics. They regard the physical environment as being the most open to influence: from neighbourhood playgrounds to infrastructure in the form of cycle paths and sports facilities at municipal or regional level. The experts regard the social aspects of sport and physical activity as less open to influence by policy.

Research question 2: Could more adults be persuaded to take part in sport? Which characteristics are important here and what impedes them?

The empirical model enables us to use scenarios to extrapolate the impact of changes in various characteristics, and thus to explore what the empirical effect of changes (including to policy) might be. For the first scenario we calculated what proportion of adults, given comparable characteristics, might be likely to increase their sports participation. The outcome suggests that there is indeed potential to increase the frequency of sports participation by adults, but that various obstacles stand in the way of this.

Half of adults who participate in sport to a limited extent or not at all have comparable characteristics to adults who play sport frequently, such as a younger age, good health, higher education level or the example of a sporting parent. If adults were to take part in

sport in accordance with their characteristics, both the share of people playing sport occasionally and the share doing so frequently could increase.
Adults who do not take part in sport now but would like to do so often cite health problems as an impediment. However, it is unclear whether those health problems pose an obstacle for all sports; there may be activities which are appropriate to their abilities and which might contribute to improving their health. Both non-participants and potential participants do actually believe that promoting health is an important motive for playing sport. In addition, people – and especially those who currently do not participate in sport but would like to do so – attach value to enjoyable and sociable activities. Impediments relating to time availability or priority also play a role, including for people who already participate in sport: people do not consider sport important enough or see no opportunity to make more time available to participate.

Research question 3: If the social environment were to improve, would the sports participation of young people increase?

In the second scenario attention is payed to the social environment. Sport is often used as a means of improving the social climate, but the converse is also important: if the perceived liveability of neighbourhoods is greater, does this alter the likelihood that young people will take part in sport? In the model is found that the liveability of the neighbourhood makes no difference to the share of young people who play sport frequently. There is, however, a difference in the context in which they participate in sport: young people in neighbourhoods where liveability is average or better are relatively more often active through voluntary sports clubs, while young people living in relatively disadvantaged neighbourhoods more often play sport in informal settings. The analyses of the scenario show that several characteristics at different levels of the social-ecological model are related to liveability: young people living in more disadvantaged neighbourhoods report poorer health, less often have parents who play sport themselves and more often have lower-educated parents. There is also a relationship between liveability and policy characteristics, especially as regards policy initiatives: sports policy is targeted more at municipalities containing more disadvantaged neighbourhoods: there are more 'Sport Impulse' (*Sportimpuls*) projects in these municipalities and they are more often the focus of 'JOGG' programmes aimed at promoting healthy weight in young people. This could mean that policy measures do not show up clearly in the model, or even that contradictory effects are found. In the scenario we extrapolated whether improving the liveability of the worst neighbourhoods might lead to a change in the context in which people participate in sport. The effect was very limited; the sports context is related to a concentration of characteristics which come together geographically in certain neighbourhoods but which are not necessarily related to the measured variable of liveability of those neighbourhoods.

S.2 The model: caveats

Quality of the explanatory model

The purpose of the project was to develop a theoretically-based empirical explanatory model. Our model has an explanatory power of between 16% and 18% for adults and between 24% and 25% for young people; these are usual figures in empirical research of this type. The model is robust, as is clear from the stability of the coefficients: even when new blocks of characteristics are added to the model, the significant results remain. It is, however, wise to bear in mind a number of caveats in interpreting the results. We would also like to suggest a few possibilities for improving the model.

Cross-sectional data do not enable statements to be made about causality

The results have to be interpreted within the capabilities of the model, since every model is a simplified reflection of reality. It is therefore sensible to bear in mind when interpreting the outcomes that the insights are determined by the information contained in the data sources used. One positive aspect of this model is that a lot of available data was used. However, the Leisure Time Omnibus (VTO) and the linked databases are cross-sectional, in other words provide only a snapshot of a particular moment. This means that statements can only be made about the relationships between characteristics, not about cause and effect (causality). This model is accordingly not suitable for testing whether a given would have an effect; that would require a different research design.

Caution needed in statements about underrepresented groups

The Leisure Time Omnibus is based on a survey of a sample of the Dutch population. The analyses apply a weighting for a number of population characteristics in order to correct for nonresponse and for the probability of inclusion (Banning et al. 2013; Knops et al. 2017; Roels & Knops 2015). The design of the Leisure Time Omnibus survey is intended to obtain a good picture of the 'average' Dutch person. However, this choice makes it more difficult for some groups to participate who may have more difficulty completing the questionnaire, for example people with a lower education level, first-generation non-Western migrants who do not have a command of the Dutch language, or people with a (mild) intellectual disability. It is for example known that first-generation non-Western migrants less often participate in sport (Vogels 2014), and the same applies for people with a (mild) intellectual disability (Van Lindert et al. 2017). It is therefore not possible to state with certainty that all groups in Dutch society are equally represented, and this is reflected in the outcomes of the model. Caution is therefore needed in applying the model outcomes to these groups.

Gaining an insight into branches of sport or participation in physical activity places extra demands on the model

Our model provides information on the frequency with which people play sport and the context in which they do so. A possible next step is to gain an insight at the level of individ-

ual branches of sport or forms of physical activity other than sport. Among other things, this would provide more specific management information for the various branches of sport or information on the relationship with lifestyle interventions and health promotion. It is important to realise that these two exercises impose different demands on the data. The first example (per branch of sport), which is in reality a more specific elaboration of our model, would require a larger sample, with sufficient respondents in different branches of sport. In addition, it would ideally also contain more specific environmental characteristics, related to a particular branch of sport. As regards the second example, which constitutes a generalisation of our model into a broader behavioural pattern such as other forms of physical activity, a large database is already available for adults (the health monitor produced by municipal health authorities, the Dutch National Institute for Public Health and the Environment (RIVM) and Statistics Netherlands (CBS)), and the challenge lies mainly in collecting and linking environmental characteristics to an even more differentiated form of behaviour than sport (see also Sallis et al. 2008). This is already being done with local studies (see e.g. Beenackers et al. 2011; 2013), but local differences in the various characteristics included (population profile, neighbourhood characteristics, level of amenities, policy) mean these results cannot be automatically extrapolated to the Dutch population as a whole, and thus also not to national policy. On the other hand, comparable municipalities could draw lessons from this knowledge.

Can the characteristics used be optimised?

In building the model, we made best possible use of available data. Where might optimisation be possible in the extrapolation of the model? Are there characteristics which are not included in our model, for example, or could the quality of the variables we included be improved? The review study threw up a number of characteristics which, based on international literature, are important for young people, adults and older people in relation to participation in sport and physical activity. Some of these aspects were already included in our model, such as age, health, socio-economic status, being in work or motives for participating in sport. For some characteristics we had no data available, such as motor and cognitive skills, social norms regarding sport and physical activity, and available sports materials at home or in the residential setting. Also biological or genetic data could have added value. Our model also contains no information on the influence of friends outside the family network, something which can be of particular importance for adolescents.
The lower explanatory power of environmental and policy characteristics suggests that they are of less importance for sports participation. This is probably due in part to the relative lack of differentiation in access to sport in the Netherlands: everyone has sufficient access to sports facilities, the liveability of neighbourhoods is generally average to good, and there is little differentiation as regards ease of mobility (see Van Tuyckom 2011 for a comparison with other European countries). The absence of a relationship for these variables in the model therefore does not mean that no attention needs to be devoted to them: reducing the currently good level of sports facilities in the Netherlands could have a negative impact on sporting behaviour.

One possible improvement for the empirical model could lie in improving the quality of the variables related the environmental characteristics. This could be done, for example, by including data on the distance to visited sports facilities, by expressing liveability in a different way or by linking data at district or postcode level rather than municipal level. One caveat here is that sport is not by definition tied to district boundaries; in fact for a sport such as ice-skating it will actually be more usual to cross the municipal boundary, because winters which are suitable for skating are rare and the number of indoor facilities is limited.

S.3 Value of sport in relation to social mission

Taking part in sport has numerous benefits (Van der Poel 2018). Sports participation has an individual value: participants experience pleasure or regard sport as important for their physical or mental health. However, non-participants may see this entirely differently; they do not enjoy the activity, regard themselves as not capable enough or do not feel at home practising sport. Sport also has a social value, such as contributing to a healthier society and strengthening social cohesion. In this concluding section we use the insights and possibilities generated in our model and the scenarios to further consider a number of social questions, related to the SCP research programme (2018). Specifically, we look at population ageing, the inclusive and exclusive aspects of youth sport and the balance between policy interventions and civic autonomy.

Demographic trends present challenges and opportunities

The model shows a strong relationship between the frequency with which people engage in sport and their age and health status. The scenario showed that adults cite health problems as the most important impediment to (continuing) their sports participation; at the same time, they are aware that sport is important for health. These are relevant outcomes given the changing composition of the Dutch population in the years ahead. Between now and 2040, for example, the number of people aged over 65 in the Netherlands is set to increase from 3.2 million to 4.8 million (CBS 2019). In addition, more people are forecast to be living with chronic illnesses (RIVM 2018). From a societal perspective, it is important that older people remain fit and active for as long as possible in the future, so that they are able to look after themselves, maintain social contacts and avoid loneliness. What does this population ageing and the increase in the incidence of illnesses mean for the future of sports participation?

During the preparation of the *Sport Foresight Study (Sport Toekomstverkenning)* (Van Bakel et al. 2017), no model was available to enable such scenarios to be extrapolated. However, the model that has now been developed enables the relationship between sports participation and ageing to be quantified. An initial estimate, without multivariate to correct for the other characteristics, suggests that the number of older citizens participating in sport will be substantially higher in 2040. At present, 45% over-65s participate in sport frequently. If we convert this percentage into absolute numbers, this means there will be roughly

700,000 more people aged 65 and over participating in sport in 2040 than there are today (Pulles et al. 2018). If participation in sport by older persons continues to grow as it has during the last twenty years (Van den Dool 2019), the number of older participants will increase further. The multivariate model can be used to extrapolate further how these and other characteristics, such as chronic illnesses or subjective health, are related to participation in sport by older people in the future.
What does the increase in participating older persons imply for the range of amenities available for sport and physical activity? It is known that today's older people participate in sport relatively more in healthcare settings. Although our model does not enable us to say why this is the case, there could be a relationship with the importance they attach to advice and supervision from a physiotherapist. Are there other actors who could also fulfil this function? What possibilities does the increase offer in terms of keeping older people fit and active and reducing or deferring the possible care costs? It is relevant for policy to have an insight into these aspects, so as to enable the appropriate policy focus on amenities, infrastructure and other parameters, such as funding for sport.

Consequences of different probabilities of sports participation for inclusion and exclusion

Not everyone participates in sport, and our model suggests that a variety of characteristics play a role in this. One mechanism that appears to be related to inclusion and exclusion is the competitive nature of much youth sport. For many children, the voluntary sports club is the logical place to begin their sporting career, partly because their friends are also doing so. At a certain point, however, young people turn their backs on this sporting activity, as other forms of time use take priority, such as part-time jobs (Van den Dool 2014). Young people give up sport because they begin to attach less value to competition, or because their skills cannot be adequately expressed (Spaaij et al. 2019). According to our model, regarding participation in competition or matches as important or unimportant is a key motive distinguishing between frequent and infrequent or non-participation in sport by 12-19 year-olds. Young people who attach less importance to competition participate in sport less frequent. The question is then whether young people who do not enjoy competition are adequately provided for through sporting activities where the focus is on the motives which they do consider important, such as enjoyment, sociability or health (see also KCsport 2019). This offers opportunities for both commercial sports providers and sports clubs to attract or retain groups of young people.
Sport is often cited as a means of achieving social cohesion in society, but faces challenges in this regard. Young people in more disadvantaged neighbourhoods, for example, are less often members of voluntary sports clubs, whereas the reverse is true for young people from less disadvantaged neighbourhoods. Informal sport played in neighbourhood squares and other public areas, such as 'Cruyff Courts' (small neighbourhood football fields), is of incontrovertible value for the sports participation of young people. Policy aimed at these facilities, and preferably also at activities that are organised in them, would contribute to the accessibility of sport for young people in less advantaged neighbourhoods (Breedveld et al. 2009). A similar reasoning applies for voluntary club membership,

which increases the likelihood of lifelong sports participation. However, if sport is to contribute to broader social cohesion and promote interaction between different groups in society, the question based on this analysis is whether there is adequate contact between young people playing sport 'in the neighbourhood squares' and those participating 'via the voluntary sports club'. It may be that the culture of one puts off the other group.
What does this imply for broader social cohesion? These questions are interesting in the context of the further underpinning of the societal value of sport.

Policy: balancing autonomy with intervention

In developing our model we took social-ecological theory as a basis, which posits that different levels of characteristics influence behaviour; characteristics that are closest to the individual show the strongest relationship with that behaviour (Bronfenbrenner 1986). This theory is also gaining increasing traction in policy, with an integrated approach and systems thinking being used to reflect on the achievement of desirable societal goals at various levels (see also Gezondheidsraad 2010; VWS et al. 2018; WHO 2018). Sports participation can be one such goal, but can also be used as a means to achieve other goals.
An example is the combination of youth care, education and sport to offer more participation opportunities to young people in a socially weaker position (Super et al. 2017). The sports sector can also serve as a social meeting place which counters unhealthy behaviour; for example, sports facilities that do not permit smoking, that have restaurants selling healthy food and that limit the times when alcohol can be bought help promote good health (VWS 2018). A healthy society offers benefits for employers, for example, because it increases and extends the employability of workers. There are, however, questions around how far employers should become involved in the health-related lifestyles of their employees; privacy is an important issue here (see also Centrale Raad van Beroep 2018).
This question surrounding 'interference' also applies for policy interventions. On the one hand, civic autonomy means that people are free to decide not to participate in sport or not to take enough exercise; on the other hand, their unhealthy behaviour leads to higher costs for society, for example in healthcare. This tension between autonomy in making behavioural choices and the consequences of unhealthy behaviour is apparent at both individuals and policy level. Opportunities to intervene range from doing nothing or simply monitoring, to information provision, to facilitating or encouraging particular choices or making certain choices impossible (Ministry of Finance 2016). While this last option has become more or less accepted policy as regards smoking, policy on sport and physical activity is often focused at the level of providing information and facilitating and encouraging choices by providing sports amenities and infrastructure or offering financial support for lower income groups. Is it acceptable for policy to be more coercive in promoting sport and physical activity? Or is that undesirable and should these choices be a matter for the autonomy of citizens themselves? Other questions are also relevant here, for example: 'How great is the negative impact on society of people taking too little exercise?' and 'How effective is policy in this area?'.

The government has to strike a balance between taking responsibility, not wishing to be seen as nannying and respecting individual privacy. The way this 'balancing act' is viewed has changed in recent years. In the 1990s a healthy lifestyle was mainly an individual matter and was not the subject of government regulation (Van Noije et al. 2012). Since then, living a healthy life has become a fairly dominant social norm, especially among those with a higher education level. They invest in their health for example through running, visiting the gym or yoga (see also Van Campen & Versantvoort 2014) and, as our model also confirms, see sport as an important means of promoting health. However, some members of the population will never participate in sport, take sufficient exercise or adopt a disciplined and healthy lifestyle. The scenario in which we extrapolated the probability that adult sports participation would increase showed that 17% of adults will probably never participate in sport. It is then arguable whether it is sensible to target policy interventions at this group, or whether investing in adults who can be persuaded to take up physical activity (also 17% of adults according to our model) might be more effective, both in terms of the investment and the return. An important part of this will be an integrated approach, with attention for the physical capabilities of these adults, their time constraints in relation to work, household and free time, combined with a broader conceptualisation of physical activity to include activities which devote attention to aspects such as sociability and enjoyment.

Notes

1 For young people the authors distinguished sports frequency below and above 40 times a year. For adults the frequency distinguished between less than 12 times a year, 12-39 times a year and 40 times or more a year. The difference between youngsters and adults is due to differences in numbers of respondents in the survey.

2 For young peoples context of sports participation distinguishes between informal sports context (alone or organised by themselves with friends or family), voluntary sports club or commercial sports clubs. For adults, due to a higher number of respondents, the authors could distinguish between more contexts: alone, informal settings (self-organised with friends or family), voluntary sports club, commercial sports club and other contexts (like healthcare, neighbourhood offerings, company sports).