

The importance of policy orientation and environment on physical activity participation—a comparative analysis between Eastern Germany, Western Germany and Finland

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SUMMARY

Environmental and policy interventions are seen as boosting physical activity because they are designed to influence large groups. However, they have not been much researched and the evidence on their role is still quite limited. The purpose of this study was to investigate differences in and relationships between policy orientation, the objective and perceived physical environment, and physical activity between Finland, Eastern Germany and Western Germany. The data are taken from a public telephone survey carried out as part of the international MAREPS project (Methodology for the Analysis of Rationality and Effectiveness of Prevention and Health Promotion Strategies; Eastern Germany, n = 913; Western Germany, n = 489; Finland, n = 400), statistics of sports facilities and policy documents. Results from the survey showed that Finns are more active than Germans and that they differ in their way of practising physical activity

from Germans. Finns were more satisfied with their opportunities for physical activity and were better informed about physical programmes and measures. Finland also has the best opportunities in indoor sports facilities and outdoor sports grounds per number of inhabitants (excluding indoor swimming pools). Analysis of policy orientations showed that Finland had the most extensive 'Sport for All' policy, although West Germany's policy orientation did not differ that much from Finland's. East Germany's policy orientation was characterized by competitive sports. A policy orientation that places emphasis on the physical activity of the whole population seems to be related to better opportunities and a better infrastructure for sports and physical activity. This study suggests that there is a relationship between policy orientation, physical environment and physical activity participation.

Key words: environment; physical activity; policy; sports facilities

INTRODUCTION

Promotion of health-enhancing physical activity has attracted much attention over the past few years in Europe. Surveys have shown big differences between countries in physical activity levels, and several programmes have been implemented to increase habitual physical activity in Europe (Vuori *et al.*, 1996; European Commission, 1999). The programmes have mainly concentrated on the promotion of behaviour as

well as of health-enhancing policies and practices. The physical environment itself has not attracted as much attention in relation to physical activity, although environmental and policy interventions have had a crucial role in many of public health's successes, such as sewage legislation, food and water quality requirements, and the wearing of seat belts (Schmid *et al.*, 1995). Environmental and policy interventions

are also seen as promising in promoting physical activity insofar as they are designed to influence large groups. However, according to Sallis *et al.* they have not been fully mobilized in the promotion of physical activity (Sallis *et al.*, 1998). They are not well researched either, and evidence on their role remains rather limited (Sallis *et al.*, 1998; Ståhl *et al.*, 2001).

The purpose of this study is to investigate differences in and relationships between policy orientation, physical environment (objective and perceived) and physical activity between Finland, Eastern Germany and Western Germany. Evidence of relationships between physical environmental factors, policy factors and physical activity status was found in a previous MAREPS (Methodology for the Analysis of Rationality and Effectiveness of Prevention and Health Promotion Strategies) study. An interesting finding of the study was that these relationships became weaker when they were controlled for countries. The country variable was a more powerful predictor of sedentary behaviour than either physical or environmental policy factors (Ståhl *et al.*, 2001). The focus of this paper is to investigate this association further. Are there differences in the physical environment and/or policy orientation between countries that explain the differences found in physical activity status and behaviour?

As a methodological issue, some of the difficulties and problems that appear in comparative studies and international studies of policy orientation, physical environment and physical activity behaviour are considered. In particular, the difficulties of obtaining comparable information on the development of physical activity policy, data on sports facilities and on the implementation of policies are discussed.

PUBLIC POLICIES AND POLICY ORIENTATION

Policies and policy development are dynamic processes involving different phases (initiation, adoption, implementation, evaluation and reformulation) of the policy-making process. These phases are continuous, but not necessarily linear (Milio, 1988; de Leeuw, 1999). Milio defines public policy as a guide to government action that 'sets the range of possibilities for the choices made by public and private organizations, commercial and voluntary enterprises, and individuals' (Milio, 1988). Thus, government

policies affect every facet of living: the creation and use of goods, services, information and environments (Milio, 1988). Policy is not simply a decision, but a product of negotiations between participants (de Leeuw, 1993; Coumans and Springett, 1997). Public policy studies that concentrate only on a single policy programme have been argued to fail because of unrealistic expectations of what a single policy can achieve (Kiviniemi, 1986). Similar criticism of the expectations of what health promotion in general and health promotion interventions could achieve has been expressed recently (Macdonald and Davis, 1998). Kiviniemi has suggested that the unit of analysis should be broader, consisting of several policies or programmes (Kiviniemi, 1986). Policies do not operate in a vacuum, but there is a wide network of interaction between policies operating at any given moment. (Kiviniemi, 1986; Signal, 1998). This is one reason why single policies are difficult to define and measure.

In this study we chose 'policy orientation' as the unit of analysis. By policy orientation we mean a collection of strategies, policy statements, committee reports and scientific studies that express the will of the government. We recognize that policies operate in a natural environment and tend to have effects in the long run. Therefore, a historical perspective constituted the core of the analysis. According to Harvey and co-workers, comparative studies of physical activity and sports policies can be carried out only if the historical constructions of the state and the policies themselves are taken into account (Harvey *et al.*, 1993).

EVALUATION OF THE POLICIES AND PHYSICAL ENVIRONMENT FROM A CROSS-NATIONAL PERSPECTIVE

The literature on the evaluation of environmental and policy interventions is limited and applicable conceptual models are lacking. In addition, macrolevel interventions have inherent difficulties (e.g. experimental designs), which makes evaluation problematic. (Schmid *et al.*, 1995; Sallis *et al.*, 1998). We chose a cross-national approach to overcome and avoid some of the difficulties inherent in macrolevel evaluation. Our focus is to compare the differences in investment policies on physical activity and sport between three regions in Europe, i.e. Saxony in Eastern Germany, Northrhine-Westfalia in

Western Germany and Pirkanmaa in Finland. A country comparison was chosen because it enables us to consider a greater variety of policy orientations and perspectives than would be the case in a single country.

The regions were selected for comparison because of their different political and socio-cultural history. Eastern Germany was selected for the comparison on account of its unique history of sport and physical activity over the 20 years preceding reunification. Finland was selected because it has placed a strong emphasis on 'Sport for All', a movement concentrating more on promoting sport and physical activity in the population as a whole. Western Germany represents a mixed model of a political and socio-cultural system, and has neither had as strong an emphasis on elite sport as Eastern Germany nor promoted a Sport for All movement as systematically as that in Finland. A more general analysis of the relationships between the policy and organization of sport and physical activity and physical activity behaviour from the European perspective is presented elsewhere (Rütten *et al.*, 2001a).

SPORT AND PHYSICAL ACTIVITY POLICY ORIENTATIONS IN FINLAND AND GERMANY

The policy orientations relating to sports and physical activity facilities are described in the results sections. The investigation of policy orientations as investment is reflected not only in the construction of physical facilities but also in a more general value-laden orientation, indicating for whom the facilities are intended. The policies selected for investigation were limited to those relating to sports and physical activity. For the policy orientation analysis we reviewed official government committee reports, strategy papers, and accounts commissioned by the ministry responsible for sport and physical activity in the respective countries. Also, historical studies focused on the development of public sport and physical activity policies in these countries were included when compiling policy orientations.

METHODS

Data descriptions

The study's quantitative data consisted of statistical data on the facilities and investment

relating to sport and physical activity, and empirical telephone survey data. In Finland, the data on sports facilities were drawn from a national sports facility database (Finland's Sport Facilities Nationwide) in October 1999. In Germany, the sports and physical activity facility data were obtained from the statistics of the state ministries reflecting the situation in Northrhine-Westfalia (1988) and in Saxony (1998) (Ministerium des Innern und für Sport Rheinland-Pfalz, 1988; Sächisches Kultursministerium, 1998). In order to obtain comparable data, an estimation based on the change in numbers of sports facilities between 1976 and 1988 was used for Northrhine-Westfalia. The data on the financial investments were obtained from studies utilizing official government statistics or from official registers.

The empirical survey data came from the public survey by the MAREPS international project, which was conducted via telephone-administered, semi-standardized interviews in autumn 1997 and spring 1998 [see (Rütten *et al.*, 2000)]. This paper presents results from the following regions: Pirkanmaa (Finland), Northrhine-Westfalia (Western Germany) and Saxony (Eastern Germany). Random sampling was employed in every region selected, resulting in the samples described in Table 1. In Germany, women are modestly over-represented. The Finnish sample is relatively older in age compared with the German samples. Although there were no notable variations in mean years of schooling, more respondents from Eastern Germany had only basic school education, i.e. 9 years or less (see Table 3).

Measures

Policy orientation

Investigation into policy orientations formed the basis of this study. It served as a foundation for considering the differences and similarities in physical activity behaviour and environment for each of the areas studied. By 'policy orientation' we mean a collection of strategies, policy statements, committee reports and scientific studies that express the will of the government. We recognize that policies operate in a natural environment and tend to have long-term effects; therefore, a historical perspective constituted the core of the analysis. Investments in the sport and physical activity facilities were used as an indicator of the funding impact of policies.

Table 1: Telephone survey

| | Finland 1 ^a (Pirkanmaa) | Western Germany (Northrhine-Westfalia) | Eastern Germany (Saxony) |
|--|---------------------------------------|---|-----------------------------|
| Selected sample | 659 | 963 | 1676 |
| Final sample | 400 | 489 | 913 |
| Response rate (%) | 60.7 | 50.8 | 54.5 |
| Males | | | |
| <i>n</i> | 189 | 219 | 365 |
| % | 47.3 | 44.8 | 40.0 |
| Females | | | |
| <i>n</i> | 211 | 270 | 548 |
| % | 52.8 | 55.2 | 60.0 |
| Age (years; mean ± SD) | 54 ± 16.1 | 46 ± 16.4 | 48 ± 17.1 |
| Education (estimated years of schooling) | 11.08 | 12.46 | 11.65 |

^aIn Finland, the selected sample was determined excluding persons either not listed in the telephone directory or not identifiable from the telephone directory via the family name and address.

Physical environment

Existing facilities for sport and physical activity were selected as objective measures of the physical environment. Comparable data was available on sports halls, outdoor sports grounds and indoor swimming pools. The number of sports facilities is given in relation to the size of the local population. The sizes of the facilities were not considered.

Perceived local opportunities and awareness of opportunities

This study used the previously described 'local opportunity-scale' (Ståhl *et al.*, 2001) to measure perceived opportunities for being physically active in the area of residence and in the wider community. The scale reflects both the physical environment and services (e.g. sports clubs, exercise programmes) of the residential area and community. The item 'awareness of programmes and measures taken to further sport and physical activity' was used to describe both the perceived support from the community and the communication strategies of the organizations and communities. The results of the opportunity scale and awareness item were investigated within the active and inactive groups, respectively, in order to control for the fact that active people may make themselves more aware of physical activity opportunities than inactive persons.

Physical activity behaviour

Physical activity level, type of physical activity, activity intensity and activity setting were

selected to reflect the influence of public policy and organizational practice on behaviour. With these indicators we studied whether a relationship could be found between policies, organizational practices and people's behaviours.

The individual's physical activity was assessed by one general question: 'do you do any gymnastics, physical activity or sports?'. The measure distinguished active from inactive people, since the respondents answered either 'yes' or 'no'. The type of activity done was found out by asking respondents to report their three most commonly practised activities. Intensity of activity was measured on a five-point Likert scale (1 = not vigorously at all, 5 = very vigorously). The setting was established by providing five settings and asking whether the respondent engaged in the activity within those settings or not. The settings presented were: sports clubs, community institutions (e.g. adult education programmes), the workplace, private settings (e.g. jogging in the park) and commercial providers.

Analysis of the data

The results of the telephone survey are based on cross-tabulations by regions and physical activity status. Statistical significances in two-way cross-tabulations were calculated with the chi-square test. Results from the different data were brought together and, based on rational argumentation, the final results were summed up.

RESULTS

The effect of policy orientation on sports facility investment in Finland and Germany

In Finland, the state has financially supported municipalities (who are responsible for creating the necessary conditions for sport and physical activity) in their construction of sports facilities since 1930. Until the 1960s, the needs of the competitive sports was the main concern of these policies. During the 1960s, however, an active and comprehensive Sport for All policy began to take shape following the second national survey on sports facilities. Since then, more attention has been paid to providing equal opportunities across the population for participation in sports and physical activity (Table 2) (Finnish Society for Research in Sports and Physical Education 1984; Ilmanen, 1995; Ståhl *et al.*, 1998). In 1930 there were 1607 sports facilities in Finland; 35 years later, in 1964, this number had increased to 14 148. By 1987 it had risen to 24 959, and at present there are ~29 280 separate sports facilities in Finland. These days, local authorities own ~75% of all sports facilities (Suomi, 2000).

In the first decade after the Second World War, the rebuilding of the extensively ruined sport facility infrastructure was not considered a primary goal of reconstruction in either part of the divided country. Thereafter, the different political systems of the German Democratic Republic in the east and the German Federal Republic in the west led to significant differences in the organization of sport, and particularly in the development of sport facilities (Eulering, 2001) (Table 2).

After the reunification of Germany in 1990, a huge discrepancy was found in the situation regarding sport facilities in Western and Eastern Germany and, subsequently, a new 'Golden Plan' for Eastern Germany was developed (Deutscher Sportbund, 1992). However, in contrast to its successful West German predecessor of the 1960s, '70s and '80s, such a broad political alliance on which to found the West German Golden Plan did not exist, and therefore it still awaits full implementation. One consequence of the different sport facility infrastructures in Germany is that increasing participation in sport and physical activity, as well as raising awareness

Table 2: Key policy features and milestones concerning investments in sports facilities in Finland, West Germany and East Germany

| Country | Policy features |
|--------------|--|
| Finland | <ul style="list-style-type: none"> • In the 1960s the Sport for All movement began to emerge • In 1974 a government legislative committee was set up. It presented many arguments in favour of the Sport for All movement • In 1979 the first national sports facility plan was established • In 1980 the Sports Act (Lükuntalaki, 1979) came into force, providing norms for the building of sports facilities, emphasizing that the building of the facilities must satisfy the needs of a large group of users • In 1998 revised Sports Act (Lükuntalaki, 1998) retained municipal responsibility for creating the necessary conditions for sports and physical activity |
| West Germany | <ul style="list-style-type: none"> • In the first decade after the Second World War, the rebuilding of the extensively ruined sport facility infrastructure was not considered a primary goal of reconstruction • In the late 1950s, the promotion of sport facilities became part of a larger public policy to promote the health and recreation of the population • In 1960 the German Olympic Society presented a 'Golden Plan for Health, Play and Recreation' to the federal government, the state ('Länder') governments, the municipalities and the public. The plan provided guidelines for municipalities on how big the different types of sport facility should be. Size was dependent on the number of inhabitants • Success of the 'Golden Plan' was due to support by a broad alliance of key politicians and the financial support of the federal and state governments |
| East Germany | <ul style="list-style-type: none"> • In the first decade after the Second World War, the rebuilding of the extensively ruined sport facility infrastructure was not considered a primary goal of reconstruction • In the 1960s the political will to develop the material and technical conditions for Sport for All had also been put on the political agenda. However, despite grandiose ideological statements the plan was never implemented • Given the political priority of elite competitive sport the limited resources available for the development of sport in the GDR were focused on this specific area; in particular, the sport facility infrastructure for Sport for All was largely neglected |

of both sport facilities and sport promotion policies, appears to be a significantly more critical issue in Eastern than in Western Germany (Rütten *et al.*, 2001a; Rütten *et al.*, 2001b).

Physical activity

In this study, Finns were found to participate in physical activity more often than Germans (Table 3). In Pirkanmaa, 88% of respondents reported doing some physical activity, sport or gymnastics compared with 70% in Northrhine-Westfalia and 64% in Saxony. Eastern Germans were less active than Finns and Western Germans, but their participation was more vigorous. In Saxony, two-thirds of the active respondents practised their physical activities vigorously or very vigorously compared with less than half of the active respondents in Pirkanmaa and Northrhine-Westfalia (66% versus 46% and 49%, respectively).

Walking was the most common activity among Finns; 66% of the active respondents mentioned walking as one of their three activities (Table 4). In Germany, gymnastics and cycling were the most popular activities: 26–28% of the active respondents had mentioned these as one of their three activities. Swimming was another popular activity among Germans. Gymnastics and cycling were other popular activities among Finns.

Finns exercised spontaneously (e.g. jogging in the park), within community institutions (e.g. adult education programme) and in the workplace more often than Germans. Western Germans exercised more often in sports clubs than Finns and Eastern Germans. Eastern Germans showed less participation within community institutions and used commercial providers less than the others (Table 4).

Perception and awareness of local opportunities

Opportunities to be physically active were perceived as good by the majority of the

Table 3: Comparisons of the characteristics of the regions and respondents

| | Finland, Pirkanmaa (1999) | | Western Germany, Northrhine-Westfalia (1998) | | Eastern Germany, Saxony (1998) | | |
|---|------------------------------|------|---|------|-----------------------------------|------|------------------|
| Characteristics of the region | | | | | | | |
| Geographical area (km ²) | 14 290 | | 34 068 | | 18 338 | | |
| Population | 444 500 | | 17 974 000 | | 4 489 400 | | |
| Inhabitants per km ² | 35 | | 526 | | 245 | | |
| Variables | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | χ^2 P-value |
| Sex | | | | | | | |
| Female | 211 | 52.8 | 270 | 55.2 | 549 | 60.1 | 0.027 |
| Male | 189 | 47.3 | 219 | 44.8 | 364 | 39.9 | |
| Age (years) | | | | | | | |
| 18–29 | 30 | 7.5 | 77 | 15.8 | 145 | 16.4 | <0.001 |
| 30–44 | 93 | 23.3 | 183 | 37.7 | 247 | 28.0 | |
| 45–59 | 119 | 29.8 | 112 | 23.0 | 224 | 25.5 | |
| 60+ | 158 | 39.5 | 114 | 23.5 | 266 | 30.1 | |
| Education (years) | | | | | | | |
| 0–9 | 163 | 40.9 | 181 | 37.5 | 499 | 56.7 | <0.001 |
| 10–15 | 200 | 50.1 | 129 | 26.7 | 112 | 12.7 | |
| 16–20 | 36 | 9.0 | 173 | 35.8 | 269 | 30.6 | |
| Physical activity | | | | | | | |
| Active | 352 | 88.0 | 343 | 70.1 | 584 | 64.1 | <0.001 |
| Inactive | 48 | 12.0 | 146 | 29.9 | 327 | 35.9 | |
| Supportive environment | | | | | | | |
| Local opportunities for physical activity (scale) | | | | | | | |
| Low support | 114 | 30.6 | 136 | 32.5 | 499 | 72.4 | <0.001 |
| High support | 259 | 69.4 | 282 | 67.5 | 190 | 27.6 | |
| Informed about programmes and measures | | | | | | | |
| Poorly | 113 | 28.9 | 176 | 37.1 | 438 | 50.7 | <0.001 |
| Well | 278 | 71.1 | 298 | 62.9 | 426 | 49.3 | |

Table 4: Intensity, settings and type of the activity by regions

| Variables | Finland, Pirkanmaa | | Western Germany, NRW | | Eastern Germany, SN | | χ^2 P-value |
|--------------------------|--------------------|------|----------------------|------|---------------------|------|---------------------|
| | n | % | n | % | n | % | |
| Intensity | | | | | | | |
| Not vigorously | 77 | 22.0 | 38 | 11.1 | 101 | 17.4 | |
| Somewhat vigorously | 112 | 32.0 | 137 | 39.9 | 96 | 16.5 | |
| Vigorously | 161 | 46.0 | 168 | 49.0 | 384 | 66.1 | <0.001 |
| Settings | | | | | | | |
| Sports club | 52 | 14.8 | 138 | 41.7 | 151 | 25.9 | <0.001 |
| Community institutions | 91 | 25.9 | 32 | 10.0 | 34 | 5.8 | <0.001 |
| Workplace | 49 | 14.3 | 15 | 4.6 | 32 | 5.5 | <0.001 |
| Independent, spontaneous | 346 | 98.3 | 262 | 79.4 | 491 | 84.2 | <0.001 |
| Commercial providers | 58 | 16.5 | 55 | 17.2 | 73 | 12.5 | 0.096 |
| Type of activity | | | | | | | |
| Going for a walk | 229 | 66.8 | 28 | 8.3 | 67 | 12.0 | <0.001 |
| Gymnastics | 72 | 21.0 | 86 | 25.4 | 162 | 29.0 | 0.027 |
| Cycling | 65 | 19.0 | 89 | 26.3 | 149 | 26.7 | 0.020 |
| Swimming | 319 | 9.0 | 75 | 22.2 | 80 | 14.3 | <0.001 |
| Jogging | 55 | 16.0 | 53 | 15.7 | 57 | 10.2 | 0.014 |
| Cross-country skiing | 63 | 18.4 | 1 | 0.3 | 16 | 2.9 | <0.001 |

NRW, Northrhine-Westfalia; SN, Saxony.

Table 5: Comparison of the perceived local opportunities and informedness about programmes and measures by physical activity status and region

| | Active | | | | Inactive | | | |
|--|---------------|---------|--------|---------|---------------|---------|--------|---------|
| | Pirkanmaa (%) | NRW (%) | SN (%) | P value | Pirkanmaa (%) | NRW (%) | SN (%) | P value |
| Local opportunities for physical activity (scale) | | | | | | | | |
| Low support | 29.1 | 28.9 | 70.7 | | 41.3 | 41.9 | 75.6 | |
| High support | 70.9 | 71.1 | 29.3 | <0.001 | 58.7 | 58.1 | 24.4 | <0.001 |
| Informed about programmes and measures | | | | | | | | |
| Poorly | 27.4 | 34.7 | 46.6 | | 39.6 | 43.1 | 58.2 | |
| Well | 72.6 | 65.3 | 53.4 | <0.001 | 60.4 | 56.9 | 41.8 | 0.002 |

NRW, Northrhine-Westfalia; SN, Saxony.

respondents in Pirkanmaa and Northrhine-Westfalia (69 and 67%, respectively). In Saxony, less than one-third of respondents (28%) perceived these opportunities as good (Table 3). A comparison of the active and inactive respondents separately showed similar trends. In Pirkanmaa and Northrhine-Westfalia the respondents reported better opportunities than in Saxony, regardless of physical activity status (Table 5).

In Pirkanmaa, 71% of respondents reported themselves to be well informed of the programmes and measures taken to promote sport and physical activity. In Northrhine-Westfalia and Saxony, 63 and 49% of respondents reported

themselves to be well informed, respectively (Table 3). Comparison within the physical activity groups showed similar trends, with Finns more often reporting being well informed than the others. Western Germans reported being well informed more often than Eastern Germans (Table 5).

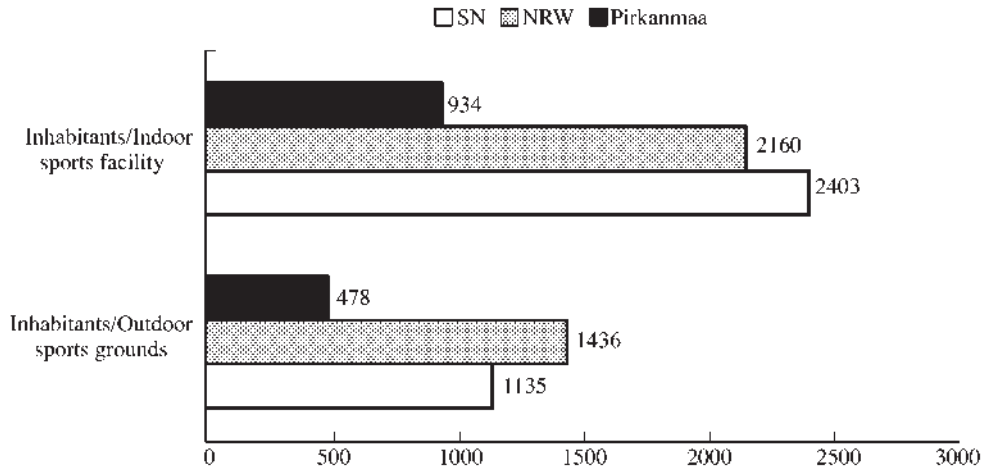
Financial investments in sports facilities

In Finland, local authorities invested a total of 4.3 billion Finnish marks (FIM) in sports facilities during the period 1960–1974, and 16.7 billion FIM between 1975 and 1990 (Table 6) (Ilmanen, 1995). In the 1990s, local authorities spent an

Table 6: Investments in sports facilities in West Germany and Finland during 1960–1974 and 1975–1990

| | Finland ^a (5 million inhabitants) | | West Germany (62.1 million inhabitants) | |
|-----------|--|-------------------|---|-------------------|
| | DM (billions) | DM per inhabitant | DM (billions) | DM per inhabitant |
| 1960–1974 | 1.4 | 280 | 17.4 | 280 |
| 1975–1990 | 5.5 | 1100 | 20.0 | 322 |

^aFinnish marks (FIM) have been converted into German marks (DM; 1 DM = 3.04 FIM). Comparative information was available only for Finland and Western Germany.

**Fig. 1:** Number of inhabitants per sports facility by region.

average 2 billion FIM annually on physical activity and sport. Although the average annual expenditure was maintained at the same level during the 1990s, an inequality in the distribution of resources has emerged. The resources have increased in larger cities with positive migration, whereas rural areas with negative migration have lost resources (Ilmanen, 1998; Sjöholm, 1998; Ståhl *et al.*, 1998; Ilmanen, 1999).

In West Germany, about two-thirds of the investment in sport facilities during the first implementation phase of the 'Golden Plan for Health, Play and Recreation' from 1960 to 1975 had been spent by the local authorities. In sum, 17.4 billion German marks (DM) were invested in West German sport facilities during these 15 years; this was followed by a further investment of 20 billion DM from 1975 to 1990 (Table 6) (Deutscher Sportbund, 1992). Comparative information for East Germany was not available.

Density of sports facilities

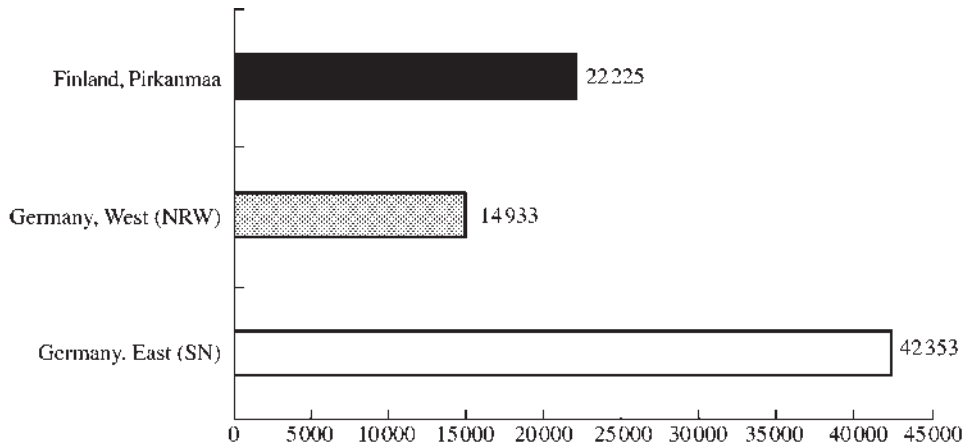
Figure 1 shows the number of inhabitants per sports site, indicating that there are more outdoor and indoor sports facilities (excluding indoor swimming pools) per inhabitant in Finland than in Germany. Theoretically, there are 934 inhabitants to one indoor sports facility in Finland, compared with 2160 inhabitants in Western Germany and 2403 in Eastern Germany. The number of outdoor sports grounds is higher than the number of indoor halls in all three localities. In Finland there was one outdoor sports ground per 478 inhabitants, compared with one sport ground per 1135 and 1436 inhabitants in Saxony and Northrhine-Westfalia, respectively. The absolute numbers of facilities are presented in Table 7.

The relative number of indoor swimming pools was highest in Northrhine-Westfalia (one per 14 933 inhabitants) and lowest in Saxony (one per 42 353 inhabitants). In Finland there was

Table 7: Number of sports facilities by regions

| | Pirkanmaa, 1990 | Northrhine-Westfalia, 1998 ^a | Saxony, 1998 |
|--------------------------|-----------------|---|--------------|
| Outdoor sports grounds | 930 | 12 513 | 3954 |
| Indoor sports facilities | 476 | 8320 | 1868 |
| Indoor swimming pools | 20 | 1204 | 106 |

^aEstimated figures based on the change in the number of sports facilities between 1976 and 1988.

**Fig. 2:** Number of inhabitants per indoor swimming pool by region.

one indoor swimming pool for every 22 225 inhabitants (Figure 2).

DISCUSSION

In this paper, we studied policy orientations in three regions differing in their sports and physical activity history. We compared their policies, existing environments for sports and physical activity, and physical activity behaviour to determine whether a relationship exists between policy, physical environment and behaviour, as suggested previously by Ståhl *et al.* (Ståhl *et al.*, 2001). There were some methodological difficulties in performing the comparison that have to be considered when interpreting the results. First, obtaining comparable information on the development of sports and physical activity policies is difficult because the detail of individual policies is not always well documented. It is equally difficult to decide which policies merit inclusion in the analysis. To overcome this problem we have gone beyond individual policies and looked for policy orientations on the basis of

the available documentation; however, this does not totally work as it is the authors that have decided what individual policies constitute a policy orientation. Secondly, the statistical information about the sports and physical activity facilities was not gathered at the same time. The data for Western Germany are 10 years older than that for Eastern Germany and Finland. To make the data more comparable we have used estimates for Northrhine-Westfalia. Thirdly, there are shortcomings typical of cross-cultural studies. The samples of the regional surveys were not equal in size and the response rates varied from one region to another (from 50.8 to 60.7%). It was only possible to obtain data on sport and physical activity facilities for indoor halls, outdoor sports grounds and indoor swimming pools; for example, comparable information could not be found on outdoor swimming facilities, rural recreation areas such as fitness/ski trails and paths, or urban pedestrian/cycle paths. The regions under investigation also differed in size and population (Table 3). For all these reasons, this study may best be considered as a pilot study examining the relationships between policies, the

objective physical environment, the perceived physical/policy environment and physical activity behaviour.

Results from the telephone survey showed that Finns were more active than Germans, and also that they differed in their physical activity behaviour. Finns can be characterized as 'walkers' who engage in physical activities at low or moderate intensity, either by themselves or as part of a programme organized by the municipality. Western Germans do either cycling, gymnastics or swimming at moderate or vigorous intensity by themselves. They are also the most eager joiners of sports clubs. Eastern Germans can be characterized as gymnasts or cyclists who perform their activities with a vigorous intensity, either by themselves or when organized by a sports club. A reason why walking was reported as the most popular form of activity among Finns and why a large proportion of the Finnish respondents reported a low or moderate level of intensity may be that older people were over-represented in the Finnish data. However, this does not make the result of no importance. On the contrary, from the health promotion and public health point of view it is extremely important that older as well as younger people do enough physical activity. Only 15% of the Finnish respondents over 60 years of age reported being physically inactive, compared with 39% in Western Germany and 37% in Eastern Germany. Another reason why walking was so popular in Finland may be the low population density and the fact that 'nature' is very close to the residents.

Finns and Western Germans were more satisfied with the opportunities they had to be physically active than Eastern Germans. The same results were found when active and inactive respondents were compared across regions. Respondents from Eastern Germany reported considerably fewer opportunities for physical activity than the others. They also reported being less informed about the programmes and measures on sport and physical activity. This can be interpreted as an indication that public policy does not support the physical activity of the general population as much as is the case in Finland or Western Germany.

Do the objective data on sport and the physical activity environment support the findings from the empirical survey data? Linking data that is different in nature, e.g. statistical and survey data, is problematic because there are no specific

methods or generally accepted principles on how to do it. Nevertheless, combining different types of data has advantages. Investigating phenomena from different perspectives gives a more comprehensive picture of that phenomena. The accumulation of knowledge provides a better foundation on which to ground future policy-making. Thus, the statistical data complement the survey data by providing another, very relevant perspective on physical activity culture. The regional statistical data showed big differences in the provision of sports and physical activity facilities. Finns have better opportunities to be physically active in terms of the number of inhabitants per indoor and outdoor sports facilities. In Germany the number of persons per indoor sports facility is over twice as high as in Finland. The differences are even bigger when comparing outdoor facilities. In Western Germany the number of persons per outdoor field is three times higher, and in Eastern Germany 2.4 times higher than in Finland. The picture looks different when comparing indoor swimming pools. The best situation is in Western Germany, as expected from the results of the population survey, which indicated the greater relative popularity of swimming compared with Eastern Germany and Finland. In Finland the number of persons per indoor swimming pool is ~1.5 times higher, and in Eastern Germany 2.8 times higher than in Western Germany.

Are there associations between public policy, environment and physical activity behaviour? Do we have enough evidence about these relationships? Bearing in mind the limitations presented earlier, we can say that we find the roles of both environment and policy important with respect to participation in physical activity. Policy orientation seems to influence both environment and behaviour. The Sport for All philosophy that Finnish policy has eagerly pursued can be seen to have resulted in high participation rates, perceived good opportunities for physical activity, and high numbers of indoor and particularly outdoor sports facilities. Correspondingly, the competitive sport-oriented policy of East Germany is yet to be reflected in people's behaviour; we have revealed a lower participation rate, an emphasis on high intensity activity, few perceived opportunities for physical activity, and a lower number of sports facilities compared with Finland. West Germany's policy orientation is between that of Finland and East Germany. This 'middle position' is evident in

many of the indicators of the study: participation rate, perceived opportunities for physical activity, intensity of physical activity, and the supply of sports and physical activity facilities. With respect to the latter indicator, Western Germany was found to have the best opportunities for indoor swimming and the worst for outdoor sports (outdoor sports grounds).

To conclude, a policy orientation that emphasizes the physical activity of the whole population seems to be related to better opportunities for sports and physical activity and the provision of a better infrastructure for the purpose. Our results suggest that these two dimensions have an association with physical activity behaviour. A future research challenge would be to repeat our study design in other countries. Similarly, it would be interesting to investigate what role pedestrian/cycle paths play as sites for practising physical activity and sport. From the population point of view, they may in fact be the best places to promote physical activity.

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ACKNOWLEDGEMENTS

This research was conducted within the MAREPS project, a Concerted Action funded within the BIOMED 2-programme of the European Union (European Commission, Brussels, Belgium, contract No. BMH4-CT96-0304). The contractor was the Technical University of Chemnitz. Associated contractors were: Limburg University Centre (Diepenbeek, Belgium); University of Jyväskylä (Jyväskylä, Finland); Netherlands Institute of Primary Health Care (Utrecht, The Netherlands); and University of Valencia (Valencia, Spain). Subcontractors were the University of Barcelona (Barcelona, Spain) and the University of Bern (Bern, Switzerland). Field work was supported by grants from: Ministry of the Flemish Community (Cabinet of the Flemish Minister of Finance, Budget and Health Policy, Brussels, Belgium); Ministries of Education, and Social Affairs and Health (Helsinki, Finland); Saxon

State Ministry of Social Affairs, Health and Family Affairs (Dresden, Germany); Health Research and Development Council (Gravenhage, The Netherlands); and Federal Office for Public Health and Federal Office for Education and Science (Bern, Switzerland).

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