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The outdoor mobility and leisure activities of older people in five European countries

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ABSTRACT

Many gerontological studies have dealt with the leisure activities of older people and they have generated many important theories. Although outdoor activities and mobility promote good health in old age, both decrease with increasing age as people lose physical and mental functions. This paper examines the outdoor *and indoor* leisure activities of 3,950 older adults and their variations by personal and environmental characteristics in Germany, Finland, Hungary, The Netherlands and Italy. The main dimensions of activity were established by factor analysis, and in all countries four factors were found: home activities, hobbies, social activities, and sports activities. Both similar and distinctive pursuits characterised each dimension among the five countries. 'Home activities' mainly comprised indoor activities, but the other three dimensions involved more physical mobility. The scores of various socio-environmental characteristics on the factors enabled the attributes of the participants to be profiled. Sports activities and hobbies were performed more often by younger men, by those with good physical functioning and by those who drove cars. Social activities were performed more by women and those who used public transport. Home activities were more frequently performed by those with low physical function and women.

KEY WORDS – older people, outdoor mobility, indoor and outdoor leisure activities, cross-country comparison.

Introduction

This study examines the leisure choices of elderly people in relation to their outdoor mobility in selected areas of five European countries. By

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'outdoor mobility' is meant the ability of an individual to move about, both physically or using transport, sufficiently to carry out activities outside the home. Such mobility is a prerequisite not only to obtain essential commodities and consumer goods, but also to maintain social relations and to participate in activities (Mollenkopf *et al.* 2005). The dimensions of outdoor mobility that are of interest include its patterns and the need for, use of and attitudes towards different modes of transport, all of which vary by social and economic characteristics including age, even among older people (Mollenkopf *et al.* 2004). Other dimensions of interest are the role of leisure activities in cultivating social relationships, and the constraining effect of living spaces and environments, many of which are poorly suited to the needs of older people. Decreasing mobility, which affects the individual's freedom of choice, can be caused both by impairments and environmental constraints.[1]

Conceptual background

Theoretical and empirical studies from several perspectives have emphasised the importance for older people of remaining physically and psychologically active, particularly with respect to social relationships and leisure activities. The positive association between physical activity and health among older people has been repeatedly demonstrated, in terms of physical health and functional status (Feskanich, Willet and Colditz 2002), and in terms of psychological wellbeing and life satisfaction (Heikkinen 1998). With regard to social relationships, it has been shown that social participation correlates with a reduction in the deleterious effects of stress and life-threatening diseases (Welin *et al.* 1985), with general health (Coleman and Iso-Ahola 1993), and with life satisfaction (Heikkinen 1989). An active leisure lifestyle has been positively related to many psychological outcomes, such as quality of life and wellbeing, and to positive mental health and self-actualisation (Csikszentmihalyi and Kleiber 1991; Csikszentmihalyi 1994; Iso-Ahola 1994).

Research has shown that in older people's daily lives, the dichotomy between obligatory and discretionary activities is blurred, whereas younger people sustain a sharp distinction by associating their job and family commitments with obligatory activities (Moss and Lawton 1982). It follows that for older people, the concept of 'leisure time' is not synonymous with 'free time' but rather extends to all the time devoted to pleasure and self-fulfilment (Lawton 1980, 1983). Many studies have attempted to understand the determinants of older people's leisure-time choices. Two influential but oppositional theories were adopted by some as prescriptive

models three decades ago. 'Disengagement theory' proposed that older people's gradual withdrawal from work roles and social relationships is an inevitable and rational transition in late life (Cumming and Henry 1961). As a counterpoint, 'activity theory' proposed that people age well when they participate in various rewarding and manageable daily activities. It is widely accepted that 'successful' old age can be achieved by maintaining roles and relationships (McClelland 1982). The prescriptive use of these theories has been criticised on the grounds that people are diverse and a single model is inappropriate (Phillipson 1998). Partly in reaction, 'continuity theory' proposed that people tend to carry forward their habits, preferences and lifestyle from mid- to late-life, and argued that the leisure choices made in early adulthood generally tend to be maintained throughout life, regardless of age (Cronin 1992; Lawton 1993). Social characteristics such as gender and social roles, socio-economic status and health are strongly associated with the kinds of activities that are chosen in early adult life (Henderson *et al.* 1996; Kelly 1993; Perren, Arber and Davidson 2003).

A life-span perspective is intrinsic to the 'selection, optimisation and compensation' model of the optimum types of activity and levels of engagement in later life developed by Baltes and Carstensen (1996). In their conceptualisation, a combination of the three processes describes the strategies that older people use to age well. Selection involves identifying goals; optimisation is the maximisation of achieved performance; and compensation is the process of adapting to one's limitations. Findings from the Baltes team's empirical studies suggested that people who were resource-rich (had stronger physical, intellectual, emotional and social skills) practised higher rates of selection (they focused their time or energy on a few social relationships and leisure pursuits that were especially meaningful) and optimisation (Lang, Rieckmann and Baltes 2002). In contrast, those who were resource-poor practised lower rates of selection (a lack of leisure specialisation) and optimisation but higher rates of compensation.

Recent empirical and theoretical work has given more attention to the factors that promote a healthy lifestyle and positive self-identity, and challenged stereotypes of old age overly influenced by medical models and physical decline. The use of diet and exercise to re-shape the body can be empowered with technological aids (Featherstone and Wernik 1995). According to Powell and Biggs (2000), the use of new technology helps an older person to modify their identity. Empirical research has shown that valuing youthfulness and fitness is independent of age, which might suggest one way of promoting a more positive image of old age (Öberg and Tornstam 2001). Post-modern analyses stress the differentiation

and fragmentation of everyday experience, and see the life of an older person as a day-by-day process of adjusting her or his identity (Rojek 1997). Retirement lifestyles are increasingly based on the culture of consumption and leisure (Gilleard 1996), therefore active participation in a leisure activity becomes an expression of people's social and personal identity.

Environmental gerontology has studied the influences of the environment on individual choice, as in Lawton's (1994) ecological model that pointed to the discrepancies between the needs of a person and the 'opportunity context' in which he or she lives. The model conceives participation or disengagement not as intrinsic traits but as individually modulated and influenced by the congruence between the individual's needs and what the environment offers. It has been shown that various residential, traffic and resource structures, including public services and informal support, differ in urban and rural areas (Beaulieu, Rowles and Myers 1996). Researchers in both Europe and the United States have investigated the lifestyle implications and environmental impacts of the ever-growing use of the car (Rosenbloom 2000). In spite of the great differences in car use and its urban context between the two continents, in both having the use of a car is increasingly accepted as essential for maintaining independence, at least outside large cities with good public transport (Burkart 1994). The availability of other means of transport and of services can influence leisure choices: the greater the distance between the place of residence and the location of services, the lower the need to walk as a means of mobility, and the greater the dependency of the older person on mechanical transport (Cutler and Coward 1992; Mollenkopf *et al.* 2002).

A review of research in environmental gerontology during the 1990s identified three prominent themes, namely the influence on older people's lives of the private home environment, the planned environment, and their own residential location decisions (Wahl and Weisman 2003). Interest in outdoor mobility is a recent extension of work on the influence of the private home environment, and can be regarded as a typical person-environment interaction (Wahl 2001). Mobility is the link between the individual and his social and physical environment. Outdoor mobility requires both personal physical mobility and, in most cases, access to transport, and mobility can manifest in two forms: as a secondary or derived activity, that is as a means of transport to the location of a desired activity (*e.g.* socialising or shopping), or for its own sake (the pleasure of walking, jogging or riding) (Mollenkopf 2003). Social gerontology has rarely focused specifically on the concept of outdoor mobility and leisure participation (Mollenkopf *et al.* 1997). A recent study that compared the

level of participation of two independent samples of very old people in 1992 and 2002 showed that although health was worse in 2002, the level of participation in leisure activities had increased over 10 years (Agahi and Parker 2005). The authors suggested that the explanation owed as much to environmental changes as to changes in individual health or functioning.

Study purpose and methods

The present study examines the leisure choices of elderly people in relation to their mobility. Adopting continuity theory, it is presumed that older people have diverse characteristics, behaviour, expectations and living situations and that these influence activity patterns. Health and socio-economic variables are expected to correlate with different leisure choices and to be different among these with richer and poorer resources. Urban or rural residence, the availability of the car and of public transport were all expected to influence mobility choices. To identify the dimensions of elderly people's leisure activities, a questionnaire survey was conducted in 2000 of the outdoor mobility of 3,950 men and women aged 55 or more years living at home in urban and rural areas of five European countries, with special attention to the very old.

The sample was disproportionately stratified by urban/rural areas, gender (50 % men and 50 % women) and age groups (55–74 and 75 or more years) (Bailey 1982). The stratification generated 48 sub-sample categories or cells. It was wished to obtain a minimum of 75 respondents in each cell, which implied a total sample of about 600 respondents in each participating country. Urban areas were represented by middle-sized towns with an average population of 177,000, because they constitute the majority of European cities and have similar transport and cultural facilities, including adult-education centres and sports facilities. The cities were Jyväskylä (Finland), Chemnitz (East Germany), Mannheim (West Germany), Pécs (Hungary), Ancona (Italy), and Maastricht (The Netherlands). Rural areas were represented by villages that met the following inclusion criteria: in sparsely populated areas (no more than 240 persons per square kilometre), a high share (about 30 %) of persons aged 55 or more years, an agricultural economy, and little industrial development. The sample was randomly extracted from the registry office of the municipality of each town or village.

A structured questionnaire was designed and pre-tested in each participant country, which revealed some cultural and linguistic differences that had to be resolved. A revised common questionnaire was then written in the English language and subsequently translated into the

national languages (Dutch, Finnish, German, Hungarian and Italian) by professional translators. The questionnaire includes questions about numerous aspects of mobility, and has seven thematic sections on: the respondent's living arrangements, mobility and transport; mobility and use of services; mobility and social contacts; mobility and leisure time; mobility and health; and socio-economic attributes. Some questions on outdoor mobility, daily activities, services, leisure-time activities and socio-demographic characteristics had been used in previous studies (Mollenkopf, Marcellini Ruoppila and Tacken 2004), including the Finnish Evergreen project (Heikkinen 1998), the German Welfare Survey (Zapf and Habich 1996) and the Nordic Research on Ageing Study (Avlund, Kreiner and Shultz-Larsen 1993).

Variables and measures

Activities. The respondents were asked to select the leisure activities they took part in from a list of indoor and outdoor activities. The list is similar to those activities that have in previous research been classified as formal, informal and solitary (Rubenstein 1987). Participation was measured as the dichotomous response (yes/no) to the question, 'Do you take part in [named] activity?'

Personal attributes. Sex, age (in years), level of education (less than or at least eight years), and whether the respondent lived alone or lived with others were among the personal variables. There were four dichotomous measures of personal mobility: whether or not the respondents was able to walk at least two kilometres, able to drive a car, able to use public transport, and subjectively reported mobility limitations.

Statistical analysis

The first step in the analysis was to examine the bivariate relationships between participation in activities by country using the chi-squared test for categorical variables. To identify the dimensions of the sample's outdoor mobility activities, factor analyses were run separately for each country (using principal components analysis with varimax rotation to facilitate labelling and interpretation). Following the convention, only factors with an eigenvalue greater than 1.0 were accepted (Kaiser 1960). The third step in the analysis was to compare the mean factor scores for each stratification and set of environmental variables by country, using Student's *t*-tests on the differences of means.[2] Particular attention was given in the analysis to health status, level of education, area of residence, and the ability to access different types of transport. The results enable the profiles

TABLE 1. *Profiles of the respondents by country*

Variable	Finland	Germany	Hungary	Italy	Netherlands	χ^2	*p*
Average age (years)	71.8	70.8	71.9	72.6	71.6	5.08[1]	<0.014
Standard deviation of age	9.9	8.9	8.5	9.5	9.0		
			Percentages				
Males	50.7	50.8	50.4	50.0	46.4	–	n.s.
At least 8 years of education	36.1	75.3	46.1	21.0	63.1	654.1	<0.001
Living in rural areas	50.0	50.0	50.0	50.0	51.0	0.4	n.s.
Living alone	34.0	32.7	30.6	17.5	36.4	64.1	<0.001
Drives a car	42.6	42.1	13.0	44.3	45.6	198.9	<0.001
Uses public transport	61.5	52.6	68.0	45.0	62.9	90.9	<0.001
Good health	69.7	58.3	66.9	49.0	42.7	131.9	<0.001
Able to walk at least 2 km	83.1	79.2	58.0	70.3	78.4	138.6	<0.001
Sample sizes	610	1,517	600	600	608		

Note: 1. *t* statistic.

of the participants in each of the four activity groups and in each of the five countries to be compared.

Results

Profiles of the respondents

The average age of the respondents among the five countries had a narrow range, from 70.8 years in Germany to 72.6 years in Italy, and the oldest respondent was aged 98 years. Table 1 summarises selected socio-economic characteristics of the respondents by country. The Italian respondents had the lowest share with extended education (21 %), the lowest rate of living alone (17.5 %), and the lowest percentage that used public transport (45 %). The Hungarian sample had the lowest percentages that drove a car (13 %) and the lowest share able to walk at least two kilometres (58 %), while the Dutch respondents had the lowest rate of good health (42.7 %).

Participation rates for indoor and outdoor activities

Table 2 shows the participation rates for indoor and outdoor activities by country. 'Watching TV or listening to the radio' was the most common activity, with a participation rate of 88 per cent, followed by contacts with relatives and friends (including 'Meeting friends, going to a restaurant and café', and 'Receiving visits in my home') (68 %). Other popular indoor activities were 'Being cosy at home, looking out of the window' (63 %) and 'Reading, solving riddles, collecting stamps and coins' (55 %). Socialising

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TABLE 2. *Participation rates for indoor and outdoor activities by country*

Activity	All	Finland	Germany	Hungary	Italy	Netherlands	χ^2
Meeting friends	68.1	69.5	68.8	54.5	57.8	88.6	200.8
Going to theatre, opera	24.1	45.6	19.7	11.2	10.2	39.6	369.9
Gardening	47.8	35.7	50.2	58.8	43.5	46.8	73.0
Hiking, riding a bicycle	27.0	32.3	32.9	8.1	5.0	47.2	420.0
Activities in clubs	23.7	36.6	23.0	12.3	11.5	36.2	202.2
Receiving visits at home	70.7	69.9	77.5	64.0	45.7	86.2	299.4
Being cosy at home	63.1	53.0	62.3	77.4	49.7	74.0	157.1
Reading, solving riddles	55.1	58.3	51.0	61.4	44.5	66.6	82.8
Do-it-yourself	36.7	48.9	31.0	34.2	37.2	40.6	65.7
Going for walks	49.5	52.6	60.7	24.6	52.7	39.8	254.5
Actively pursuing sports	8.8	5.8	8.6	1.5	4.7	23.1	217.9
Religious events	41.0	42.3	32.2	36.9	44.3	62.7	177.9
Watch TV, listen to radio	88.1	84.3	89.6	95.0	85.0	84.3	53.5
Sample sizes	3,950	610	1,517	600	600	608	

Note: The percentages are calculated on the total number of subjects of each country. All the tabulated chi-squared statistics were significant at $p < 0.001$.

activities such as 'Activities in clubs, associations and for retired people' were much less common, with a participation rate of 23.7 per cent. Sports activities, as reported by 'Actively pursuing sports' and 'Hiking, riding a bicycle', were the least common, with participation rates of respectively 8.8 and 27.0 per cent.

The rate of participation in some activities differed greatly by country. 'Receiving visits in my home' and 'Being cosy at home, looking out of the window' were least prevalent in Italy, possibly because the Mediterranean climate encourages outdoor activities. 'Going to theatres, the opera, concerts, movies, libraries and taking courses (commonly in arts-and-crafts)' and 'Activities in clubs, associations and for retired people' were most prevalent in Finland and The Netherlands and least common in Italy and Hungary. Apart from watching television, in Italy the most common activity was 'Meeting friends, going to restaurants and cafés', while in Hungary it was 'Being cosy at home, looking out of the windows'.

The mobility dimensions of the leisure activities

The four factor analyses of the variations in activity participation identified four dimensions in each country (Table 3). These have been labelled 'Home activities', 'Social activities', 'Hobbies' and 'Sports activities'. In all countries (with a minor exception for Italy), three variables loaded strongly on 'Home activities', namely 'Being cosy at home, looking out of the window', Watching TV, listening to the radio', and 'Reading, solving riddles, collecting stamps and coins'. The analysis for Germany identified

TABLE 3. *Strong variable loadings on rotated factors of leisure activities by country*

Factor and types of activities	Finland	Germany	Hungary	Italy	The Netherlands
			Rotated factor loadings		
Home activities					
Being cosy at home, looking out windows	0.69	0.67	0.45	–	0.68
Going out for a walk, stroll in town	–	0.65	–	–	–
Receiving visits in my home	0.54	0.65	–	–	–
Meeting friends, going to restaurants, cafés	–	0.54	–	–	–
Reading, solving riddles, collecting stamps[1]	0.51	0.42	0.50	0.67	0.70
Watching TV, listening to the radio	0.68	0.33	0.73	0.61	0.53
Eigenvalue, rank of eigenvalue	2.71, 1st	2.61, 1st	1.18, 3rd	1.10, 4th	1.12, 3rd
Explained variance (%)	21	20	9	9	9
Social activities					
Religious events, voluntary or charity work	0.74	0.74	0.55	0.70	0.69
Activities in clubs, associations for the retired	0.73	0.82	–	–	–
Meeting friends, going to restaurants, cafés	0.46	–	0.67	–	0.53
Receiving visits in my home	–	–	0.75	0.65	0.66
Being cosy at home, looking out windows	–	–	–	0.79	–
Eigenvalue, rank of eigenvalue	1.35, 2nd	1.51, 3rd	3.02, 1st	2.57, 1st	3.21, 1st
Explained variance (%)	10	9	23	20	25
Sports activities					
Hiking, riding a bicycle	0.57	0.59	0.69	0.77	–
Going to theatre, concerts, movies, libraries[2]	0.50	0.65	0.67	0.62	–
Actively pursuing sports	0.65	0.68	0.61	0.75	0.77
Going out for a walk, stroll in town	0.64	–	0.56	–	0.43
Activities in clubs, associations for the retired	–	–	0.45	–	0.74
Eigenvalue, rank of eigenvalue	1.24, 3rd	1.37, 2nd	1.38, 2nd	1.14, 3rd	1.00, 4th
Explained variance (%)	10	11	11	9	8
Hobbies activities					
Gardening	0.77	0.83	0.88	0.32	0.67
Do-it-yourself, busy with handicrafts, car, house	0.71	0.65	0.52	0.55	0.54
Going out for a walk, stroll through the town	–	–	–	0.65	–
Meeting friends, going to restaurants, cafés	–	–	–	0.65	–
Activities in clubs, associations for the retired	–	–	–	0.55	–
Going to theatre, concerts, movies, libraries[1]	–	–	–	–	0.60
Hiking, riding a bicycle	–	–	–	–	0.54
Eigenvalue, rank of eigenvalue	1.17, 4th	1.12, 4th	1.06, 4th	1.73, 2nd	1.44, 2nd
Explained variance (%)	9	9	8	13	9
Total explained variance (%)	50	49	51	51	48

Note: 1. Also collecting coins or similar. 2. Also taking courses, for example in arts-and-crafts. Loadings below 0.30 are not tabulated.

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three additional strongly loading activities, 'Receiving visits in my home' (as for the Finnish respondents), 'Going out for a walk, strolling through the town', and 'Meeting friends, going to restaurants or cafés'. The shift of some activities from one factor to another among the countries probably reflects the cultural characteristics and geographical settings that raise or lower their prevalence, with also some cultural and linguistic variations in terminology. The supplementary variables in Germany could be interpreted as private or informal activities that correlate with the indoor pursuits.

Only two variables strongly loaded on the Hobbies factor in all five countries: 'Do-it-yourself' and 'Gardening'. In Italy other strongly loading variables on this factor were 'Going out for a walk, stroll through the town', 'Activities in clubs and associations for retired people', and 'Meeting friends, going to restaurants or cafés'. In The Netherlands, the additional variables were 'Hiking, riding a bicycle' and 'Attending cultural events' (theatre, concerts etc.). This dimension describes an intermediate level of outdoor mobility associated with active interests like gardening, walking, meeting friends and going to the cinema, which require only moderate physical effort. The activity of cycling was unusually prevalent in The Netherlands; given that the country has few hills, in terms of its physical demands it could be considered analogous to walking (Gagliardi *et al.* 2004).

The 'Social activities' factor arose from diverse social pursuits, but only one variable strongly loaded on the factor in all five countries, 'Religious events, attending church, voluntary or charity work'. The other included variables were: for Finland and Germany, 'Activities in clubs, associations and for retired people'; for Italy, Hungary and The Netherlands, 'Receiving visits in my home'; in Finland, Hungary and The Netherlands, 'Meeting friends, going to restaurants or cafés'; and in Italy, 'Being cosy at home'. From the point of view of the level mobility, as with Hobbies, this factor can be considered as requiring an intermediate level.

Participation in sports requires the highest level of physical mobility. The respondents in Finland, Germany, Hungary and The Netherlands reported patterns of leisure activities that had a common factor structure, in that for each country three variables strongly loaded on this factor: 'Actively pursuing sports', 'Cultural activities' and 'Hiking, riding a bicycle'. Of these, only 'Actively pursuing sports' was a strongly loaded variable for The Netherlands. It is possible that 'Hiking, riding a bicycle' did not emerge as a strongly loaded variable in that country because cycling is more a means of transport than a leisure pursuit. Other strongly loaded variables were, 'Going out for a walk or stroll' in Finland, Hungary and The Netherlands, and in the last two countries, 'Activities in clubs,

associations and for retired people'. The different associations among the variables with the various factors in the five countries partly reflects cultural variations but also appears to have a stochastic element arising from the low numbers of active participants (Table 2). There is, however, a clear suggestion that more education associated with relatively high participation in sports and cultural activities, at least in some countries.

National variations in the factor structure

The factor analysis for each country identified four factors that could reasonably be labelled similarly but that had differing compositions or structures. To identify variations in the profiles of the respondents most strongly associated with each factor in each country, the mean factor scores were compared for the personal and environmental variables using Student's *t* tests. All the variables were significant in at least one country on at least one factor, with the exception of urban or rural area of residence. It has been shown that in both kinds of area, there is considerable variation in both the environment and personal characteristics, and that it is exceptionally difficult from routine sources to identify a reliable measure of urban/rural differences, which may explain the counter-intuitive finding that no significant differences in the leisure patterns of their older residents were found (Beaulieu, Rowles and Myers 1996; Li *et al.* 2003). Table 4 presents the significance of the *t* scores for the variable loadings of each of the variables on the four factors and by country. The table has been arranged with the Sports-activities and Hobbies factors, which had the most consistent structure across the countries, at the top, and the other two factors, which had much weaker and more inconsistent associations with the input variables below.

Sports and outdoor activities factor

The profile of those who most participated in this factor was the clearest and most consistent among the five countries, with three classificatory variables presenting significant loadings in all five countries; being able to walk two kilometres, being less than 75 years-of-age, and having received more education (Table 4). With the diverse other associations, the overall picture is that participation not surprisingly is by those who are fit, active and in relatively good health. In only Finland and Italy was there a significant association with being male.

Hobbies factor

The profile of the respondents with the strongest associations with the Hobbies factor was also relatively clear and consistent, with two variables

presenting highly significant loadings in all five countries: being less than 75 years-of-age, and able to walk two kilometres. Driving a car was also significantly associated in all the countries except Hungary (where only 13 per cent of the sample drove), while being able to use public transport was significant in Hungary, Italy and The Netherlands. The significantly associated personal attributes were broadly similar to those for the 'Sports and outdoor activities' factor, and again pointed to the most fit, active and healthy, but there were discernable differences. The influence of higher education, while significant in three countries, was overall weaker, while the influence of 'living with others' and being male was stronger. The profiles of the participants in this set of activities were least well characterised in Hungary, and the pattern of the significant characterising variables was distinctive (Table 4).

Home activities factor

By contrast, the profiles of the participants in the other two factors were much less strongly drawn and much more variable by country. For the Home-activities factor, there were only 14 very significant ($p <= 0.001$) associations with the characterising variables, compared to more than double that number for the two factors described above. Gender (female) was significantly associated ($p < 0.01$) in four countries but not Hungary. The most widespread associated personal attribute was a low level of education and being able to use public transport, which had significant ($p < 0.05$) associations in three countries, most strongly in Germany and Italy (Table 4). Higher age was significantly associated in Finland and Italy ($p < 0.05$); poor resources and poor health were significantly associated in Italy and The Netherlands ($p < 0.05$); and not driving a car was significant in Finland and The Netherlands. Concerning the respondent's living arrangement, living alone was significantly associated in Finland, Italy and The Netherlands (there was probably co-variation with average age).

Social activities factor

This profile was the least strongly revealed, as there where only eight very significant ($p <= 0.001$) associations with great variation among the countries. The few repeated associations were: being able to walk at least two kilometers, in Finland, Hungary and The Netherlands; and gender in Finland and Germany. Over all four factors, it is clear that being fit and in good health and the availability of means of transport strongly influenced the variations in leisure activities.

TABLE 4. *Significant factor loadings for the categorical variables, by country*

Factor and variables	Finland	Germany	Hungary	Italy	The Netherlands
	Level of significance of p				
Sports activities					
Male	0.02	–	–	<0.001	–
Age <75 years	<0.001	<0.001	0.04	<0.001	<0.001
More education	<0.001	<0.001	<0.001	<0.001	<0.001
Lives with others	–	–	–	<0.001	–
Drives a car	<0.001	<0.001	–	<0.001	–
Uses public transport	<0.001	<0.001	<0.001	–	<0.001
Good health	<0.001	<0.001	<0.001	–	–
Able to walk 2 km	<0.001	<0.001	<0.001	<0.001	<0.001
Hobbies activities					
Male	–	<0.001	0.03	<0.001	–
Age <75 years	<0.001	<0.001	<0.001	<0.001	<0.001
More education	<0.001	–	–	<0.001	<0.001
Lives with others	<0.001	<0.001	–	0.04	<0.001
Drives a car	<0.001	<0.001	–	<0.001	<0.001
Uses public transport	–	–	0.001	<0.001	<0.001
Good health	0.005	<0.001	0.003	<0.001	<0.001
Able to walk 2 km	<0.001	<0.001	<0.001	<0.001	<0.001
Home activities					
Male	–	–	0.006	–	–
Female	<0.001	<0.001	–	0.002	<0.001
Aged at least 75 years	0.04	–	–	0.04	–
Lives alone	<0.001	–	–	0.01	0.007
Lives with others	–	–	0.006	–	–
Lower education	–	0.001	0.001	<0.001	–
Does not drive a car	<0.001	–	–	–	0.001
Uses public transport	–	<0.001	–	<0.001	0.002
Good health	–	–	<0.001	–	–
Not in good heath	–	–	–	0.05	0.01
Able to walk 2 km	–	<0.001	<0.001	–	–
Social activities					
Female	<0.001	0.01	–	–	–
Age <75 years	–	–	0.03	–	–
More education	–	–	0.001	–	–
Drives a car	–	0.004	–	–	<0.001
Uses public transport	<0.001	–	–	–	–
Does not use public transport	–	<0.001	–	–	–
Good health	–	–	–	<0.001	–
Able to walk 2 km	<0.001	–	<0.001	–	0.02

Discussion

Limitations of the study

All cross-national social studies have difficulties making consistent comparisons of defined activities given the problems arising from different

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languages, cultures and built environments (Ragin 1987). Five different databases were created and it was necessary to run separate factor analyses in order to identify the dimensions of people's activity patterns and outdoor mobility. Our main concern was to develop a standard typology of activities across the five countries. The respondents were provided with a rather long list of the most common leisure activities and asked to select in which they participated. The list could not include all possible activities, nor avoid the taxonomic problems entailed in translations of terms among five languages.

Relationships between activities, mobility and engagement

The first objective was to identify the component dimensions of outdoor mobility patterns and to discover whether relationships could be shown between these and personal and environmental variables. The second objective was to propose a model valid for all the surveyed countries. The findings identified that four activity factors associated with different levels of mobility could be identified in all five countries. The 'Home activities' factor was mainly composed of indoor activities in all countries, and it most strongly featured among women and those living alone, with health problems, of greater age, who did not drive a car and who used public transport; in other words, those with relatively poor mobility resources and relatively low engagement in outdoor activities (Henderson, Stalnaker and Taylor 1998; Mollenkopf *et al.* 1997). The other three dimensions required a higher level of physical mobility. 'Social activities' and 'Hobbies' generally require an intermediate level of mobility, while 'Sports' activities need the highest level of physical mobility.

There were gender variations. Men participated more strongly in Hobbies and Sports activities, and women in Social activities, as other studies have found (Henderson *et al.* 1996). Hobbies and Sports activities were more strongly associated with respondents who were younger, drove cars, used public transport, of higher education and in good health and physically fit (able to walk at least two kilometres). Social activities were more strongly associated with the respondents who were in good health, physically fit and used public transport. Sports activities were engaged in by relatively few subjects and were particularly associated with men and those of higher education, who drove cars and had good health.

The results show that age and socio-economic characteristics influence activity patterns and outdoor mobility, and that 'disengagement' is linked to a lack of personal, transport and environmental resources. Women had the greater disadvantage in these respects. It should be recognised that the current prevalence of driving skills among older people, and particularly

older women, is likely to change rapidly in the coming years, but nonetheless to promote the activities and engagement of older people, promoting access to and the use of public transport continues to be of great importance. Nevertheless, it is stressed that walking is the transport mode 'of last resort'; it remains available to many older people who can no longer drive or use public transport. Environmental and transport planning should therefore give high priority to the improvement of pedestrian facilities and the removal of obstacles to walking.

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NOTES

1 The study developed from an international collaborative project, 'Enhancing outdoor mobility in later life: personal coping, environmental resources and technical support' (MOBILATE) (Mollenkopf *et al.* 2005). This interdisciplinary project aimed to increase understanding of variations in the physical and social environments on the mobility of older people.

2 East and West Germany were analysed together as Germany. SPSS for Windows 11.5 was the statistical software used to perform all analyses.

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