

## Leisure-related mobility of elderly people: ways to sustainability

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### **Abstract**

A sustainable development of leisure mobility has two goals: avoiding traffic and satisfying leisure needs. In this respect different living areas offer varying preconditions. Therefore, within the research project FRAME (leisure mobility of elderly people) 4,500 people aged 60 years and older, living in urban, suburban and rural regions, were questioned about their leisure time activities. As expected the results show, that activities generally decrease with increasing age, but that the frequency of leisure time activities does not vary significantly from living area to living area. However, clear differences between the habitats can be found when examining the type of activity and the distances covered during leisure time; suburban seniors clearly cover the longest distances. The modal split underlines these results.

Spatial precondition for short leisure trips is the high leisure quality of a habitat. Additionally, the results of the survey suggest that leisure facilities spreading across numerous little towns do not lead to short ways. Instead, a concentration of leisure facilities which can be reached easily is recommendable. It requires the co-operation of local authorities, leisure and transportation companies.

## **1 Aspects of sustainability in leisure-related mobility of elderly people**

The quota of elderly people (60+) today amounts to 24 % in Germany. The Statistical Bureau forecasts, that already in 2030, every third inhabitant will belong to this age-group (STATISTISCHES BUNDESAMT 2003). Due to an increased life expectancy as well as a larger financial scope, car ownership and possession of driving licences, today's elderly have numerous offers for their leisure activities. As serious health problems and social constraints usually do not occur before the age of about 80, the first 10-20 years of retirement are characterised by good health and only a few occupational and/or family obligations, thus allowing an active leisure life. Leisure-related mobility among the elderly increasingly relies on private vehicles which allow for a larger range of activities, including locations that are far away and/or badly accessible by means of public transportation. However, the resulting increase in motorized leisure-related traffic has negative ecological impacts and it is necessary to think about measures which lead to a more sustainable manner of leisure mobility.

Discussions about sustainability have their roots in the ecological movement of the 1970s and 80s. Therefore, ecological objectives are still central but social and economic questions gain importance (BfLR 1996). When applying these questions to leisure mobility of elderly people two questions arise: 1. How can traffic be avoided? I. e. under which circumstances do local destinations offer an alternative to long distance leisure trips? and: 2. How can mobility be guaranteed? With increasing health problems in old age and a reduced network of friends, a decline in activity can be noticed which often is accompanied by a decrease in life satisfaction (MOLLENKOPF & FLASCHENTRÄGER 2001). Furthermore, the conditions in living areas can facilitate or complicate mobility constraints depending on the accessibility of retail and leisure facilities. Mobility is the precondition for an independent life and participation in society. Therefore, regarding a social dimension of sustainability, mobility is a central feature and a need a living space must render possible.

In this paper we try to give answers to the following questions: To what extent do different environments allow elderly people to be active? Which distances are related to leisure trips in different spatial settings? What are the conditions for long and short leisure trips?

Finally we develop recommendations for the implementation of social and ecological goals by appropriate spatial and organizational structures.

## **2 The project FRAME**

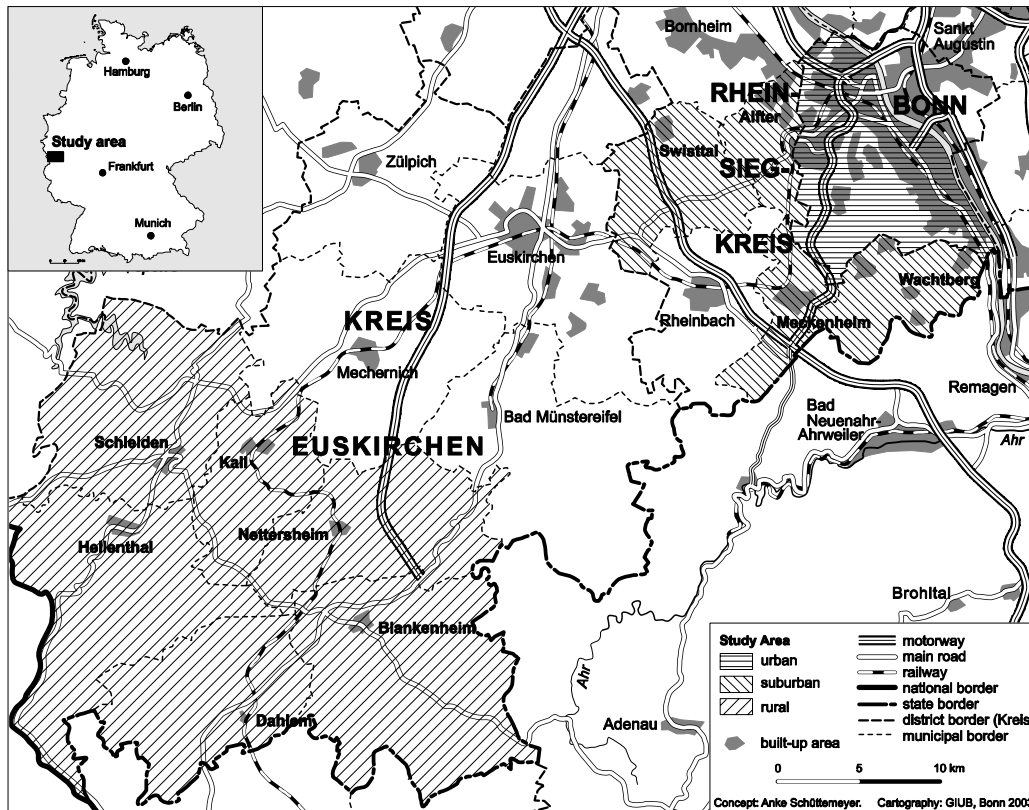
The results presented in this paper are based on the interdisciplinary project FRAME 'Freizeitmobilität aelterer Menschen' (Leisure mobility of elderly people). The German Federal Minister of Education and Research supported and financed this project between October 2000 and September 2003. It is a co-operation between the University of Bonn (Centre of Evaluation and Methods of Prof. Dr. G. Rudinger and the Department of Geography, Urban and Regional Research of Prof. Dr. R. Grotz) and the University of Dortmund (Faculty of Spatial Planning, Department of Transport Planning of Prof. Dr. C. Holz-Rau).

### **2.1 Methods**

It can be assumed, that the leisure mobility of elderly people is influenced by both personal and spatial conditions. Therefore, the research project includes all age categories of elderly people; from the 'young seniors' (60- 69 years) to the 'old seniors' (80 years and more) and different spatial conditions (urban, suburban and rural areas). The combination of supply and demand analysis in the field of leisure mobility is the core of the project. First of all, a structure analysis of the different living areas was carried through giving information about the supply of leisure facilities and the accessibility of different means of transportation. Then, leisure and transportation demands were examined as well as socio-demographic and personal aspects of the seniors living in the case study areas. A standardized questionnaire was used for personal interviews of 4,500 people between 60 and 101 years. This combination of supply and demand analysis allows to extract determinants of leisure mobility of elderly people as well as factors which determine mobility problems.

### **2.2 The case study areas**

The case study area includes the City of Bonn (300,000 inhabitants), some of the surrounding suburban municipalities and, further westwards, rural districts. This choice represents different spatial settings as they occur in Germany, which allows to transfer the results of the project FRAME to other areas in Germany.

**Fig. 1: Map of the case study areas**

### Urban area (Bonn)

Due to Bonn's status as capital of Germany for more than 40 years, the availability and accessibility of supply (retail and services) and leisure facilities as well as the range of cultural offers is very good. Bonn offers an opera, theatres and more than a dozen museums (some of them of national importance). Within the city of Bonn mainly four areas were analysed differing in the distance to the city centre, the type of housing and the quality of supply and transport.

### Suburban area

The suburban area comprises four municipalities in the "Rhein-Sieg-Kreis" (district) in a distance of six to 20 km from Bonn. Since the 1960s families moved from Bonn to suburban regions which led to an increase in the population and to intensive interconnections between the residential suburbs and the city of Bonn. Many of the former migrants have now retired (ageing in place).

The settlements of the four municipalities can be classified by their shopping, service and leisure facilities as follows:

- *Settlements with insufficient supply*: mainly pure residential settlements with a population size ranging between 200 and 3,000 people
- *Settlements with sufficient supply*: villages with retail and service supply and a minimum of leisure facilities
- *Centres*: cities in the suburban area with diverse shopping, service and leisure facilities, but without the size and importance of Bonn

### Rural area

In the rural case study areas six municipalities can be found with a total of 137 settlements or villages. They can be divided into two categories:

- *Settlements with central functions*: These eight towns are the centres of the rural area, they offer retail and service facilities as well as diverse sporting facilities, cafés, bars, restaurants and some cultural facilities or events.
- *Settlements without central functions*: 129 settlements ranging in the population size between two and 1,400 inhabitants. Correspondingly heterogeneous is the supply of leisure facilities, hardly any village offers more than a sports field or a community centre.

## **3 Social and ecological aspects of leisure mobility in different living spaces**

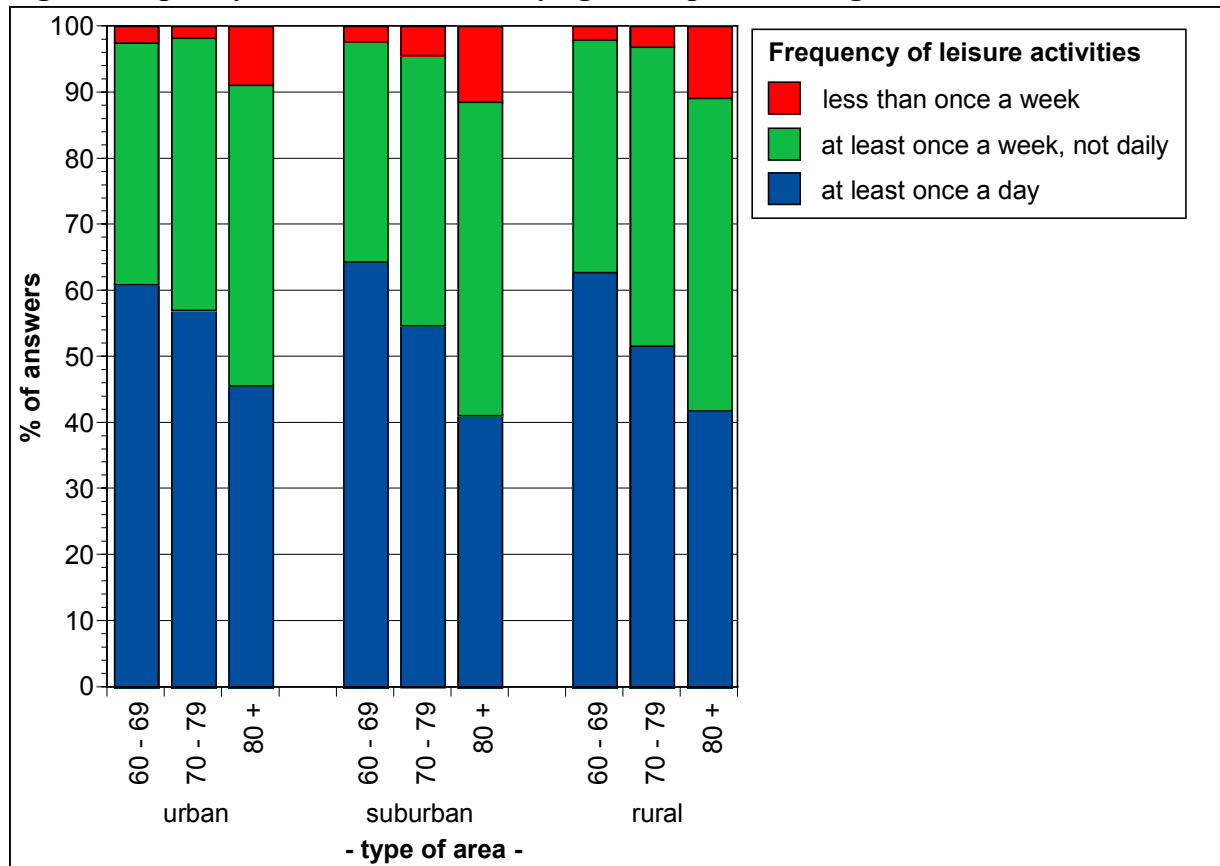
A sustainable leisure mobility aims at satisfying leisure requirements with regard to preferably short ways. Here, different living spaces offer different preconditions. The following chapter gives an overview over the differences in the leisure activities of elderly people in urban, suburban and rural areas. In a first step, we focus on social aspects, answering the question how active elderly people are in different spatial settings. In a second step, we analyse the trips made for leisure activities in the different case study areas. During the interviews elderly people were asked about their participation in 23 different leisure activities (LUBECKI & KASPER 2002).

### **3.1 Dimension of leisure activities**

Although the supply of leisure facilities in the living spaces varies strongly, the frequency of leisure activities of the senior inhabitants hardly differs. It is assumed that

accessibility and mobility problems occur during the last years of life. Problematic spatial conditions particularly affect old and less mobile seniors. Therefore, we will have a closer look at the seniors aged 80 and older.

**Fig. 2: Frequency of leisure activities by age and spatial setting**



Source: FRAME survey, 2002.

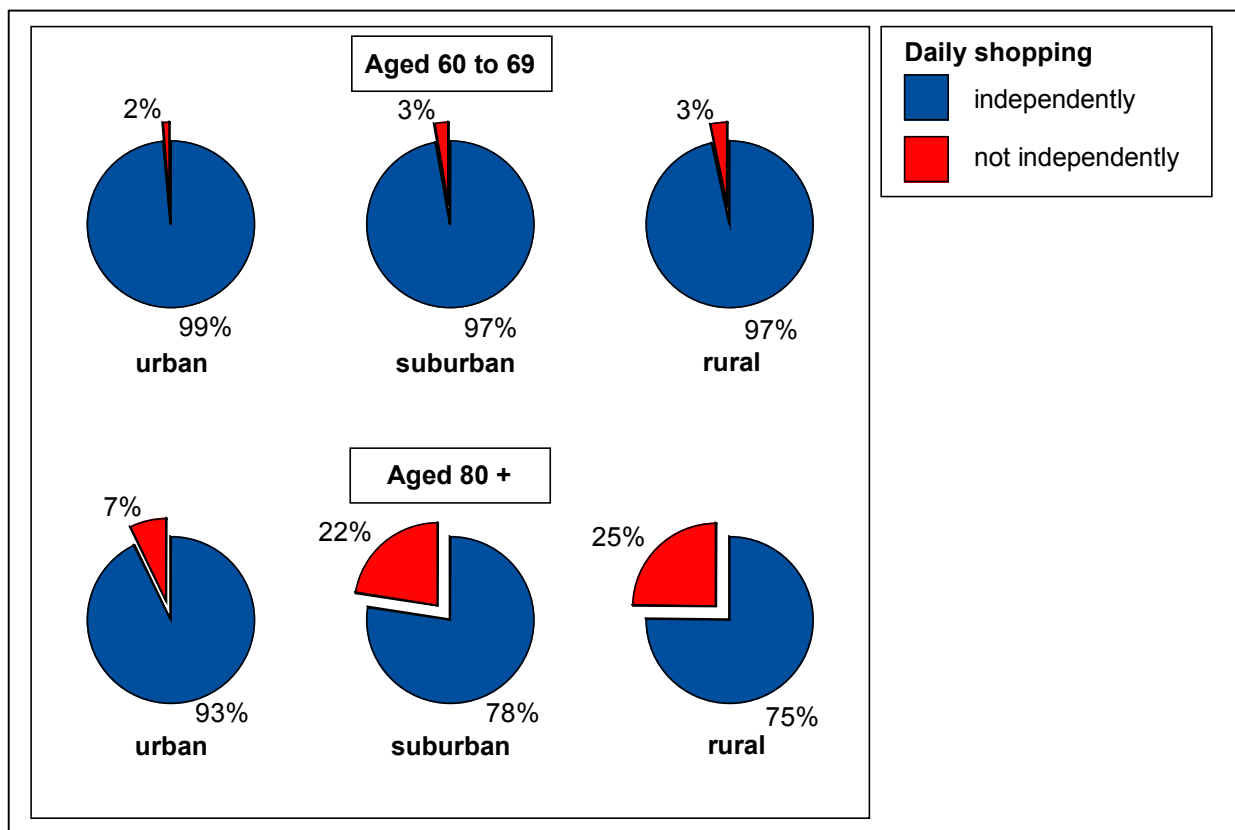
In fact, there is a decrease in activity frequency with increasing age: While 62% of the people between 60 and 70 leave their house once a day for leisure activities, it are only 45% of the old seniors (80 years and older). As this decrease can be noticed in all main case study areas (urban, suburban, rural), it can be assumed, that this is an age related phenomenon, irrespective of the living space and the local offers. In every type of case study area elderly people participate in a variety of leisure activities. None of the areas can be defined as problematic. Elderly people suffering from mobility restrictions can partly compensate for giving up one activity by participating in another more often.

In contrast to the constant activity levels in the leisure time, there are consequences of decreasing mobility and the lack of supply for shopping. The possibility to care for the

own household and to do the daily shopping is part of the independence of elderly people. Additionally it is an opportunity for social contacts. In this field we can identify problems:

Almost all seniors aged 60 to 69 in the whole case study area do their shopping on their own, but we noticed spatial differences within the category of the seniors of 80 years and older. In the urban area 93% of the elderly people in this age category do their daily shopping on their own, in contrast to people living in suburban and rural areas, where almost a quarter of the seniors depend on help, implying that independent daily life is more difficult for them than for people living in the city.

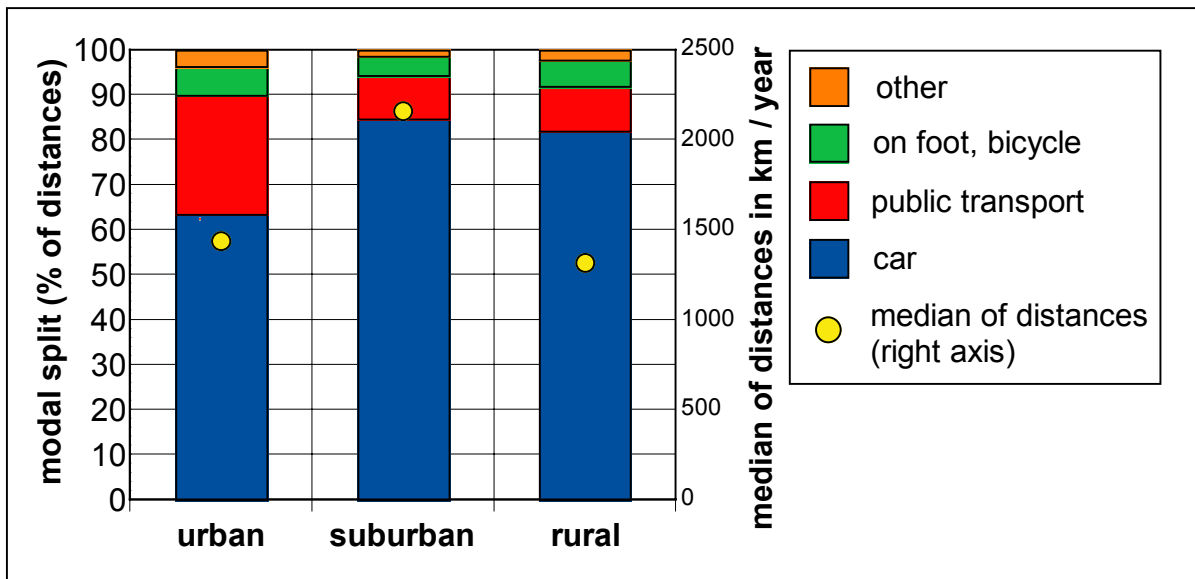
**Fig. 3: Percentage of elderly people who do their daily shopping independently**



Source: FRAME survey, 2002.

### 3.2 Leisure trips

The average (median) distance covered for leisure activities (without journeys) of elderly people is 1620 km per year and person. However, within our different case study areas the distances travelled vary clearly (see fig. 4).

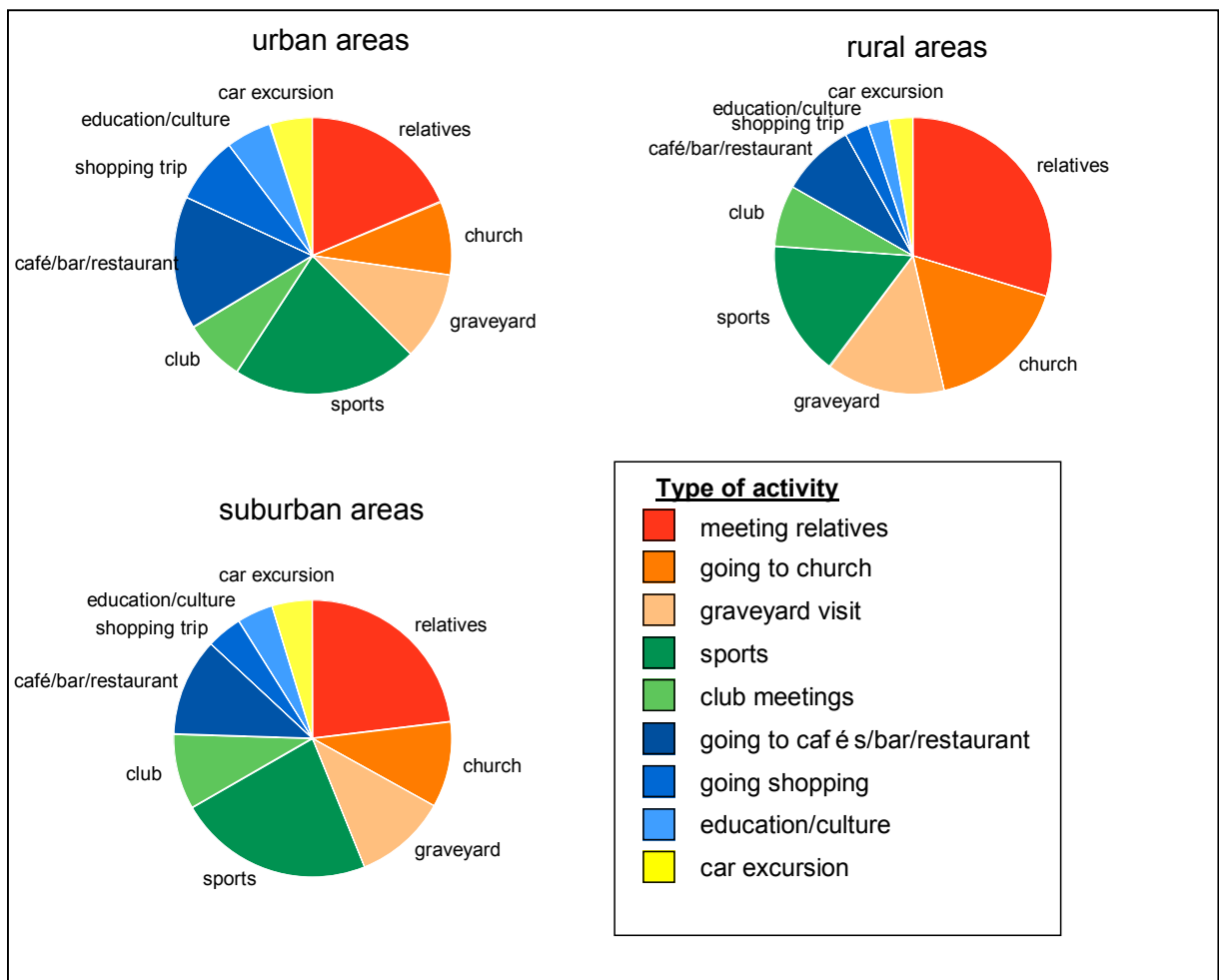
**Fig. 4: Distances and means of transportation in different areas**

Source: FRAME survey, 2002.

The longest distances are covered by the suburban seniors with 2150 km which is 70 % more than the distance travelled by elderly people living in the rural area (1270 km). Additionally, more than 80% of the distances in suburbia were travelled by car. Surprisingly the distance travelled by urban seniors is longer than the distances of inhabitants in the rural area. However, the distance travelled by car is shorter in the city, because public transportation is an attractive alternative.

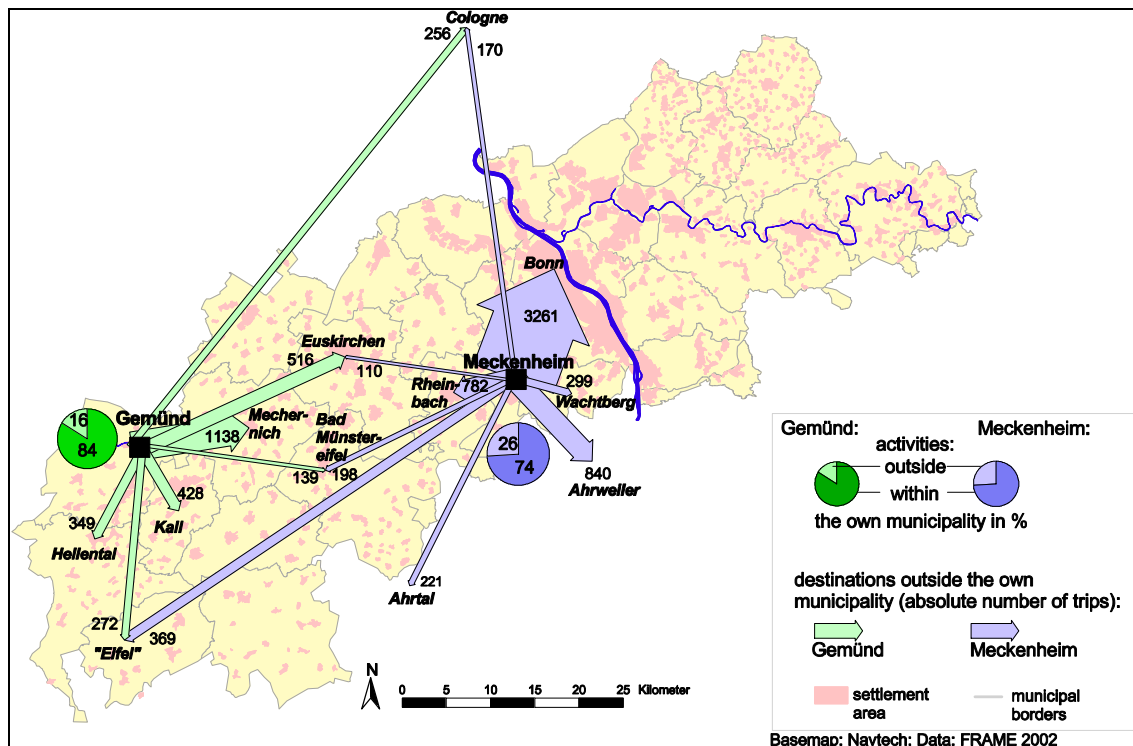
Sustainability of leisure mobility can be assessed by distances travelled during leisure time and by the means of transportation utilized for this purpose. Therefore, we examined the reasons for the longer distances travelled by the suburban seniors. As already mentioned, there is no significant difference in the activity level of the people in our three study areas, so that this can not explain the different trip length. We found that it are rather the differences in the types of activities between urban, suburban and rural seniors which can explain the suburban behaviour.



**Fig. 5: Percentage of selected leisure activities in different areas**

Source: FRAME survey, 2002.

Fig. 5 shows the grouped activities in different areas. Due to the great variety of local leisure facilities, hardly any problems occur when wishing to participate in leisure activities in the city. A clear decline in importance from urban to rural regions can be noticed for leisure time activities which are centre-orientated like education and culture, going to restaurants, cafés and bars or going shopping. In rural areas, with a smaller number of substantial recreational facilities, people concentrate on social activities like going to church, visiting graveyards or meeting relatives. The inhabitants of suburbia partly behave like their rural and partly like their urban neighbours. The people of the suburban area decided to live outside the city in an earlier stage of their life without having changed their interests and their preferred activities. Thus they orientate strongly towards the centre of Bonn.

**Fig. 6: Trips made from Gemünd and Meckenheim**

Two examples as illustration: Fig. 6 shows 95% of the trips made by 100 seniors of two settlements in the suburban and rural area with comparable social structure. As the distance to the next multifunctional urban centre is too far for the inhabitants of the rural area (Gemünd), they strongly concentrate on their own municipality whereas the wide variety of recreational, service and shopping facilities of Bonn are much closer for the elderly people of Meckenheim, therefore they orientate towards Bonn.

#### 4 Spatial conditions for a sustainable leisure mobility

Due to the long distances travelled by the suburban residents, there is a strong call for action to achieve a sustainable leisure mobility. Ideas about altering settlement patterns could be a step into the right direction. For this purpose spatial indicators which are connected to short trips have to be identified.

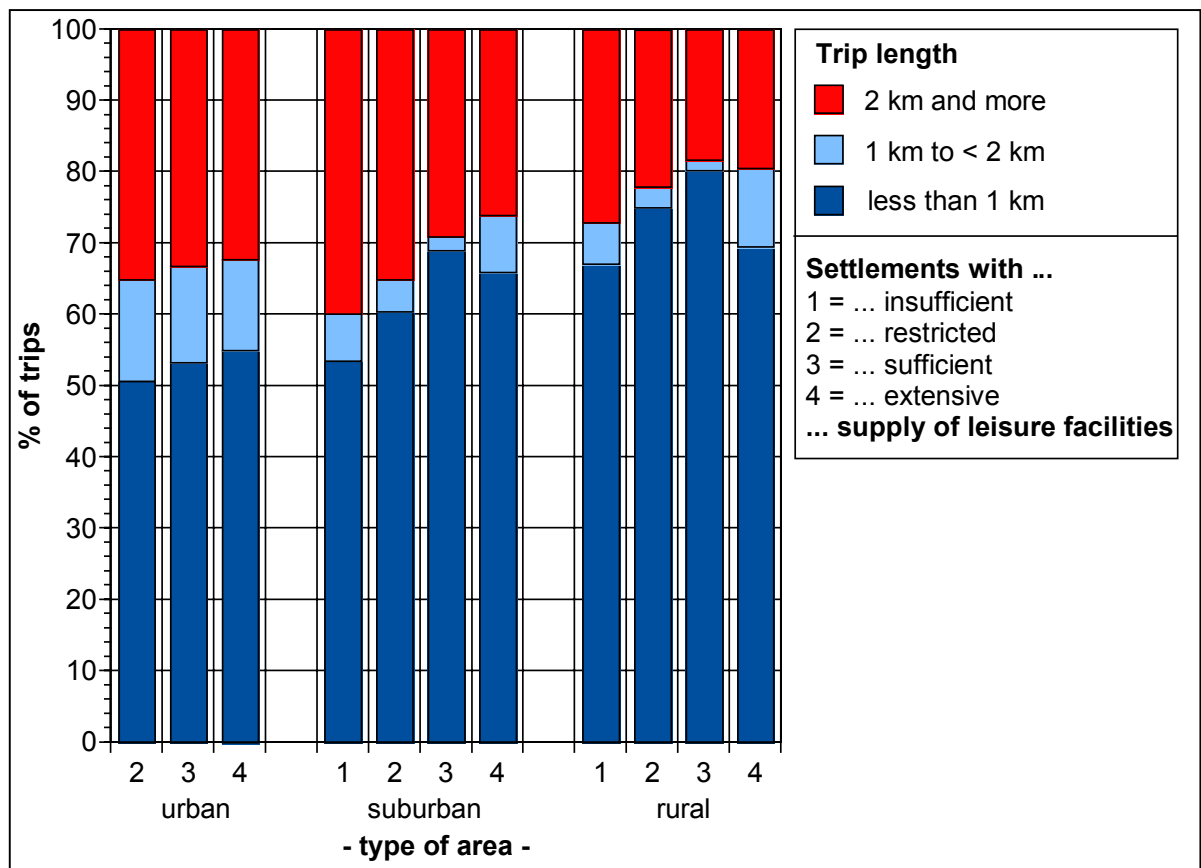
#### **4.1 Structure of residential settings**

The correlation between the settlement structure and travel behaviour has been discussed controversially (e.g. HALL 1997, KÜHN 1998). On the one hand researchers argue that more densely populated residential areas lead to a shorter trip length and to a reduction of traffic. On the other hand e.g. JENKS, WILLIAMS & BURTON (1996) hypothesised that residential areas without private gardens induce more traffic for leisure activities. The own garden and the possibility to be outside 'in nature' close to the dwelling could reduce the necessity to travel long distances by car to get into nature. However, this hypothesis cannot be confirmed by the results of FRAME. Seniors with an own garden travel longer distances in their leisure time than elderly people without a garden. This can be explained by the higher car availability of garden owners. The fact that gardens are normally found in areas dominated by detached one-family-houses and the fact that these areas heavily depend on the private car, explains a higher level of car availability. Another explanation may be, that elderly garden owners have less walking problems, at least in the suburban and rural areas, as a certain level of physical fitness is necessary to care for a garden and a house.

#### **4.2 Equipment with leisure-related infrastructure**

It can be assumed that elderly people use close-by leisure facilities. Therefore the equipment of the residential area with leisure facilities is linked to the distances travelled for leisure purposes. In the FRAME-study the leisure facilities of 179 settlements in the study area were mapped. A leisure quality index was calculated from quantity and diversity of leisure facilities. It distinguishes between four groups: settlements with insufficient leisure supply, settlements with restricted supply, settlements with sufficient and settlements with extensive leisure supply.

It surprises to note, that there are no differences regarding the sum of the travelled distances between inhabitants of locations with different leisure quality. The total distances are composed of long and short trips (fig. 7). In terms of sustainability, many short trips have to be judged more positive than a few long trips, although the total distance travelled might be the same, as for short routes there is no need for a car. In fact, 96% of Bonn's urban seniors cover distances less than one km either by using their feet or their bicycle; in suburbia it are only 77% and in rural regions 73% of the seniors who walk or cycle. Therefore short trips are examined in detail.

**Fig. 7: Distances for leisure activities by spatial setting and leisure quality**

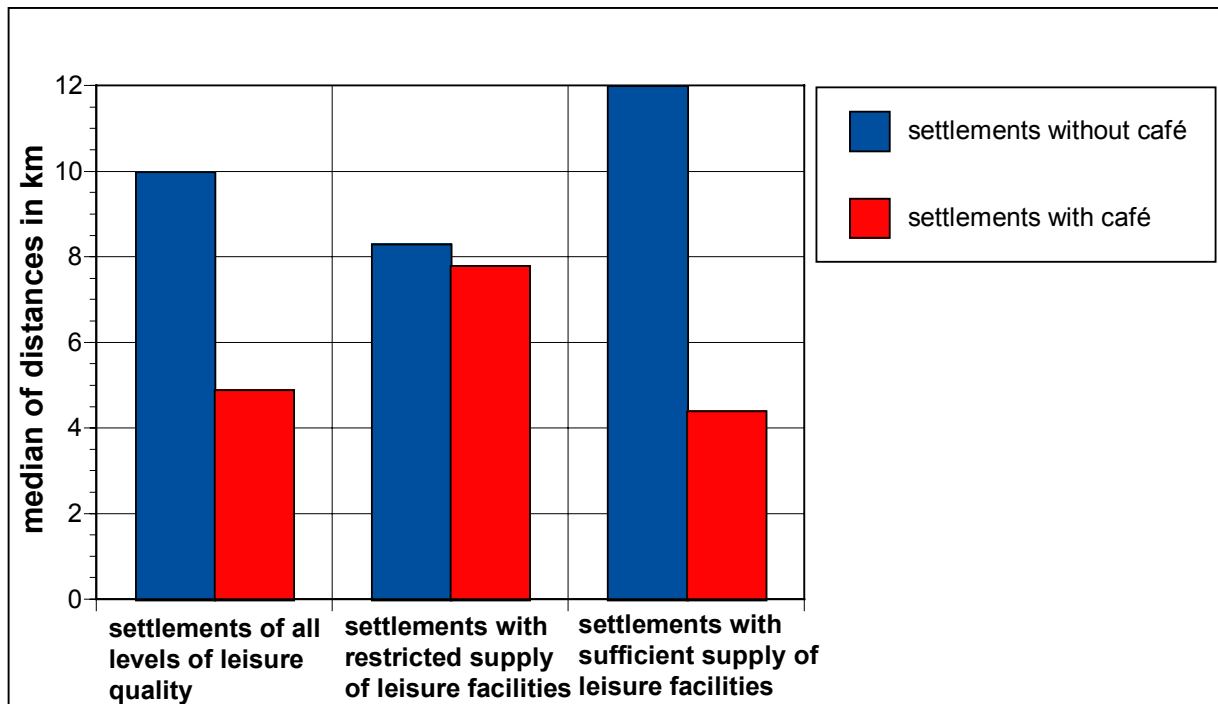
Source: FRAME survey, 2002.

The better the leisure supply of a settlement, the more activities can potentially be performed in the own hometown. Fig. 7 shows that elderly people in fact make use of this possibility. In all spatial settings one can observe the tendency of an increase in short trips with an improvement of leisure quality. This reflects the importance of local offers for elderly people. The influence of local offers is particularly noticeable in suburbia, differences in the urban area are minimal for several reasons: On the one hand almost all urban case study areas have leisure facilities. On the other hand leisure facilities in other urban quarters are easily accessible by means of public transportation.

The extremely high quota of short trips in the rural study area surprises. The amount of short trips in the smallest settlements with insufficient leisure supply corresponds to that of suburban centres. This shows the stronger orientation towards local activities in rural areas. Existing social networks, traditional ties and the natural settings suffice for these activities.

The influence of the existence or lack of leisure facilities can be analysed more detailed on the basis of single activities: In general church service is attended in the nearest church. Consequently trips to churches will be shorter, if a settlement is equipped with a church. The average distance travelled to visit a café is much shorter in settlements with a café than in settlements without (fig. 8).

**Fig. 8: Average distance to a café, depending on supply of settlement**



Source: FRAME survey, 2002.

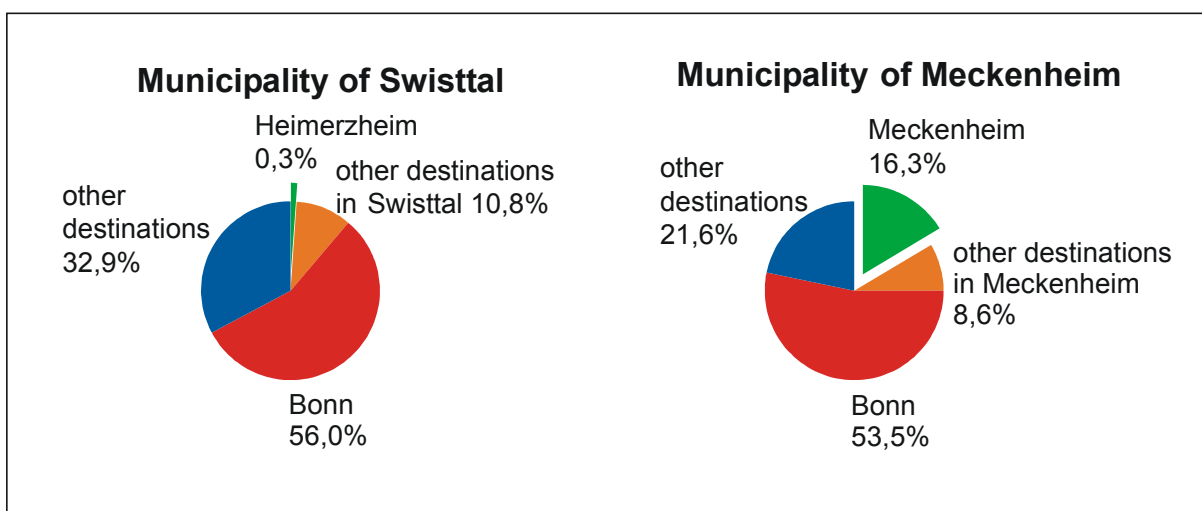
However, it is interesting to examine the small settlements with restricted leisure supply. Here, average distances travelled for a *single* trip to a café do not differ much between the settlements with and those without a café. Consequently a single café does not seem to suffice to bind elderly people to their hometown when visiting a café. In settlements with restricted leisure supply the existence of a café does not influence the frequency of visiting cafés. With or without a facility the average frequency is ten times a year. Only on a higher level of leisure quality leisure supply has a distance reducing effect. In settlements with sufficient leisure supply, better quality and a larger choice lead to shorter distances for café visits. Persons from settlements with sufficient leisure supply but not equipped with a café also seem to claim higher quality as they travel further than people in settlements with restricted supply.

Apart from variety, quality takes effect. Different examples from rural settings show, that the existence of an attractive leisure offer increases local participation in activities: In the rural study area only 30 % of all interviewees visited a museum or an exhibition during the last twelve months. Contrarily; the quota amounted to 52 % in a village with an attractive museum. Similarly, only 37 % of rural seniors took part in cultural events during the last twelve months, but 56 % in Gemünd, a village which is equipped with a theatre that shows a variety of different performances. Therefore, inactivity in rural settings does not reflect a lack of leisure activity desires but rather an adaptation of leisure mobility to existing conditions. The results prove the importance of an attractive and diverse leisure supply as contribution to short trips for leisure purposes

### **4.3 The importance of multifunctional centres**

The comparison of two municipalities in the suburban area shows the importance of attractive and multifunctional centres. Apart from the main centre, one municipality includes several villages. Therefore, the following analysis differentiates between the main centre of the municipality and the surrounding smaller villages. The main centres of the municipalities of Meckenheim (Meckenheim) and Swisttal (Heimerzheim) both offer an extensive supply of leisure facilities. Nevertheless, there is a greater variety and more attractive offers in Meckenheim than in Heimerzheim. To point out the influence of the main centres on the mobility of elderly people living in the surrounding smaller villages, fig. 9 shows their spatial orientation during their leisure time.

Both diagrams show an orientation towards the next big urban centre (Bonn), which is typical for suburban areas. It is also obvious, that the elderly residents of the smaller villages in Meckenheim are tied more strongly to their main centre (Meckenheim). In contrast, the inhabitants of Swisttal show a wider range in their travel behaviour. This leads to longer distances travelled by the seniors of the smaller villages in Swisttal (2316 km versus 1230 km in Meckenheim). Compared to the distance travelled by the elderly people living around Meckenheim this is an increase of nearly 90% which cannot be explained by a higher level of leisure activities. In fact, the weaker and less attractive supply of leisure facilities in the local main centre causes this behaviour.

**Fig. 9: Destination for selected leisure activities from Meckenheim and Swisttal**

Source: FRAME survey, 2002.

Note: The graph includes the 40030 trips of 235 respondents living outside the main centre in the municipality of Swisttal and 12222 trips of 60 respondents living outside the main centre in the municipality of Meckenheim. Only activities for which facilities exist in the boundary of the municipality were taken into consideration.

## 5 How to achieve sustainability

As activity patterns of elderly people decrease with increasing age, local leisure facilities are important. However, the results also support that appropriate approaches depend on the type of activity concerned. Spreading leisure facilities over a multitude of small villages neither leads to short trips nor could this be financed. Instead, a local concentration of attractive leisure facilities has to be supported in places with adequate accessibility. Clustering leisure supply has various advantages: By pooling financial and human resources, a qualitatively high and extensive offer can be created. Leisure facilities gain attractiveness and this attracts more people. The result is a stronger utilisation which might in return again have a positive effect on the quality of the offer. A higher utilisation ratio leads to a higher efficiency when considering leisure activities that have to be paid for. Because of the seriously limited financial possibilities of German communities, it is important to find ways and means that are economically sustainable.

On the one hand clustering leisure supply calls for a supervision on a higher administrative level and on the other hand for a co-operation of various partners. One can think of co-operations between

- neighbouring communities
- providers of leisure offers
- transport providers
- other enterprises

The aim of co-operation is not only to minimise costs. Also benefits must be apparent to all partners to counter parish pump politics. The co-operation should be controlled and a network of partners should be organized on a higher administrative level. Examples for the co-operation of providers of transportation and leisure facilities show that offers reciprocally gain attractiveness. E.g. in a rural area leisure destinations were connected to the public transportation network by a “leisure bus line”. In this way leisure facilities were made accessible to people without a car and in return various leisure facilities reduced their entrance fees for holders of these bus tickets.

In co-operations it is important to arouse interest for the target group “elderly people”. Therefore, it has to be pointed out, that investments in this target group are profitable. Perceiving elderly people as social burden has to be counteracted. Instead their role as potential consumer has to be pointed out. An example for such an investment into the target group is the offer of local banks to introduce online-banking in senior clubs for free.

However, the necessity to find economically viable solutions for a sustainable leisure mobility must not lead to excluding seniors with a low income from leisure activities. Not all people of this age group dispose of a high purchasing power. In order to offer low-priced basic leisure supply on the basis of the smallest spatial units, voluntary work will gain even more importance in the future than it already has today. Especially healthy seniors are asked to use their spare or leisure time to support other seniors.



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