Heidrun Mollenkopf · Roman Kaspar

Ageing in rural areas of East and West Germany: increasing similarities and remaining differences

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Abstract Since unification in 1990, living conditions in Germany's "New Länder" have slowly converged to the conditions in the "Old Länder". One can assume, however, that West–East differences persist more strongly in remote rural areas neglected by economic development. Therefore, this paper aims to investigate and compare the living conditions of older adults in rural areas in East and West Germany with respect to personal and environmental resources which are important preconditions for autonomy and well-being in old age. These conditions were examined in a survey conducted in urban and rural regions of five European countries in 2000. The German rural study was carried out in the districts of Jerichow (Saxony-Anhalt) and Vogelsberg (Hesse), and included 762 men and women aged 55 years or older, randomly chosen in villages of at most 5,000 inhabitants. East–West comparison showed both similarities and differences. Similarities arose in human conditions such as subjective health, parenthood and network variety, and in environmental conditions such as home-ownership, attachment to one's home, length of residence in the same neighbourhood, and satisfaction with mobility options. Differences were found in socio-demographic conditions (e.g. education, income, household composition), basic neighbourhood features, and patterns of social and leisure activities. Regression analysis showed the differing impact of single predictor variables on life satisfaction in the East and West: satisfaction with financial situation and functional health contributes far more to older people's life satisfaction in the West German rural area, whereas mobility-related aspects affect elders' life satisfaction more strongly in the East German countryside. The findings reflect, on the one hand, continuing structural East–

West differences and, on the other, diverging socio-cultural habits.

Keywords Rural areas · Housing · Neighbourhood · Leisure · Life satisfaction

Introduction

Since unification in 1990, a major goal of German policy has been to create equal living conditions in the "New Länder"—the former German Democratic Republic (GDR) and East Berlin—and the "Old Länder"—the federal states of the former Federal Republic of Germany (FRG) and West Berlin. In fact, quite a range of objective living conditions in East Germany have slowly converged to the West German conditions. Despite some problems related to the system, the West German welfare state model, including generous social protection regulations, was transferred to the new federal states. Although income and pensions rose especially for pensioners who held the lowest status in the former GDR, average incomes still differ between the old and new states (Hauser 1995; Statistisches Bundesamt, StBA 2004).

Further positive changes of particular relevance for older people concern housing and mobility options: housing stock has improved substantially through the modernisation of existing buildings and construction of new residential areas. About 83% of all dwellings now have central heating in both parts of Germany, and only a minority of East Germans reported their buildings to be still in need of complete renovation (7% compared to 2% in West Germany). Home-ownership increased substantially from 24% in 1994 to 32% in 2002, but has yet to reach the level of 43% in West Germany (StBA 2004). Furthermore, the range and quality of goods and services which are suited to support independent living in old age have increased. East German households are now almost as well equipped with technological devices

H. Mollenkopf (✉) · R. Kaspar
German Centre for Research on Ageing (DZFA),
University of Heidelberg, Bergheimer Strasse 20,
69126 Heidelberg, Germany
E-mail: mollenkopf@dzfa.uni-heidelberg.de
Tel.: +49-6221-548115
Fax: +49-6221-548112

as are West German households. A car is available in 72% of East German households, compared to 78% in the West, which represents a substantial “catching up” (StBA 2004; for the situation of elder households in 1991, see Mollenkopf and Hampel 1994). Travel opportunities are no longer restricted.

However, fewer improvements appear to have occurred in the domains of health and emotional well-being. Whereas 1993 German Welfare Survey data (Zapf and Habich 1996) showed health impairments or a lack of social contacts to be a feature of West Germans’ lives only from about 75 years on, such unfavourable conditions were already found in noticeable numbers in the age group 65–74 years for East Germans (Mathwig and Mollenkopf 1996). In 2002, clear differences between East and West German elders still existed with respect to difficulties in performing activities of daily living, feelings of depression and subjective health, although the latter has slightly improved between 1992 and 2002 (StBA 2004).

Average data, however, often mask regional differences (Scharf 2001). One can assume that large urban–rural differences exist, and that East–West differences persist more strongly in remote rural areas neglected by economic development. Therefore, the focus of this paper is on whether the general trend towards improved living conditions described above also applies to the situation of older people living in rural areas. Hence, in a first step, we investigate and compare the living conditions of older adults in rural areas in East and West Germany with respect to socio-structural, personal and environmental resources which are important for autonomy and well-being in old age. Considering that objective characteristics have often been shown to exert a modest impact on well-being (e.g. Veenhoven 1996; Diener et al. 2003; Krause 2004), objective conditions will be related to subjective evaluations of neighbourhood, services, and the possibilities to be mobile and pursue leisure activities.

From a social policy perspective, it is also important to know whether and how prevailing living conditions and their appraisal affect older people’s quality of life: does the so-called paradox of actual versus perceived life conditions, suggesting that older people may adapt their needs and expectations to unfavourable conditions in order to maintain subjective well-being (Kivett 1988; Staudinger 2000; Oswald et al. 2003), also hold true for older people in East and West German rural areas? Or do unfavourable conditions—if they exist—result in lower satisfaction? Therefore, in a second step, the potential impact of both the prevailing conditions and the rural elders’ subjective evaluation of these conditions for their general life satisfaction will be investigated.

Methodology

The research is based on the European project “MOBILATE. Enhancing Outdoor Mobility in Later

Life” (Mollenkopf et al. 2005), funded by the European Commission, and pays special attention to the cultural and structural differences in various European regions. An essential focus of this study was on how environmental resources impact on the living conditions of older adults. Patterns of activity and the corresponding personal and environmental conditions were examined in a survey conducted in 2000 in urban and rural regions of five European countries. In view of the diverging national conditions of the countries in terms of spatial extension, settlement structure, and population density, we decided not to impose identical standards when selecting suitable cities and rural areas. Instead, in order to take into consideration the specific national peculiarities, medium-sized cities were chosen in proportion to each country’s characteristics and, within rural regions of each country, villages or areas were chosen which can be regarded as characteristic for that country.

Research areas

The German part of the rural study was conducted in the districts of Jerichow (Saxony-Anhalt, East Germany) and Vogelsberg (Hesse, West Germany). Both areas are so-called “Ländliche Kreise im Regionstyp II” (rural districts in region type II; Bundesamt für Bauwesen und Raumordnung, BAfBR 1999). The district of Jerichow is a lowland area, located about 200 km to the west of Berlin. As such, it does not benefit from the capital’s economic development. With its 101,200 inhabitants in an area of 1,337 km², it is comparatively sparsely populated. Despite its rural character, most economic activity takes place in the service sector; only 4.2% of economically active inhabitants were engaged in agriculture, forestry and fisheries in 1999. Due to major economic changes following unification, the unemployment rate was high (17.8%).

The district of Vogelsberg is a hilly area, located in the middle of the state of Hesse in central Germany. With its 119,000 inhabitants in an area of 1,459 km², it is about as sparsely populated as the East German region chosen in this study. Only 1.4% of economically active inhabitants work in agriculture, forestry or fisheries. The area had an unemployment rate of 9.6% in 1999 (BAfBR 1999).

Sample

The rural sample included 762 men and women aged 55 years or older, disproportionately stratified according to gender (almost equal shares of men and women) and age (55–74 and 75 years and older respectively) (Table 1). However, as the focus of this paper is on possible East–West differences, we abstain from this age and gender differentiation in the presentation of data, and mention gender and/or age differences only if they

Table 1 Rural Germany—sub-sample of the MOBILATE Survey 2000^a

Number of participants (<i>n</i>)	Rural area, West Germany (District of Vogelsberg, Hesse)			Rural area, East Germany (District of Jerichow, Saxony-Anhalt)		
	55–74 years	75+ years	Total	55–74 years	75+ years	Total
Males	117	74	191	117	73	190
Females	115	77	192	114	75	189
Total	232	151	383	231	148	379

^aDatabase: MOBILATE Survey 2000; $n_{\text{Total}} = 762$; unweighted sample composition

revealed high significance, or if we found diverging East–West patterns between subgroups.

Respondents were chosen by a random route procedure in villages of at most 5,000 inhabitants. Sample sizes were almost equal in the eastern and western German regions ($n_{\text{West}} = 383$; $n_{\text{East}} = 379$). Dropout rates were 39% in the West German rural area and 44% in the corresponding East German area. As the main reasons for dropping out were refusing without giving detailed reasons (about 10%), not being reachable (13%) or having no time (12%), and only a minor percentage (5.4%) of potential participants mentioned health reasons, we assume that the sample does not show a strong distortion towards very healthy persons.

Measures

Participants were interviewed in their homes by specially trained interviewers from a commercial research institute (USUMA, Berlin). Standardised questionnaires were used to assess individuals' socio-demographic, health and social resources, and essential features of the community.

Socio-demographic indicators included age, education (years of full-time education including school attendance, occupational training and university study), income (pseudo-metric net income per person in the household, derived from a list of 14 categories for overall net household income) and occupational status.

Health-related indicators included self-rated functional health: the ability to perform 10 selected activities of daily living without difficulty, with difficulty, or not at all (e.g. bending down, climbing stairs, doing light/heavy housework; derived from Lawton and Brody's (1969) ADL scale), and visu-motoric functioning (the Working Memory/Digit Symbol Test; Oswald and Fleischmann 1995). To assess emotional well-being, the Positive and Negative Affect Scale (PANAS; Watson et al. 1988) was employed, asking for the frequency of 10 positive emotions (e.g. feeling proud, inspired, active) and 10 negative emotions (e.g. feeling distressed, nervous, ashamed) experienced during the preceding 12 months (score of 1 = not at all to 5 = very often).

With respect to *social network aspects*, household composition, parenthood and the number of children were assessed. Moreover, information was collected

relating to various categories of persons who were particularly important for emotional or personal reasons (e.g. relatives, friends, colleagues, professional helpers), and who were not living in the same household as that of the respondent. The values given may be an underestimation because they were obtained by adding up the “important persons” subcategories, and not by documenting the absolute number of persons in the individual categories.

Indicators related to the *immediate living environment* included information on the kind of house occupied by respondents (e.g. a free-standing house or a block of flats), as well as his or her housing tenure. Basic comforts of the dwelling such as central heating, bathroom or shower, and toilet inside the dwelling were aggregated to form a sum score ranging from 0 (none of the comforts available) to 3 (all given comforts available). Attachment to one's home, an overall evaluation of the emotional and cognitive bonding towards the home, was assessed on an 11-point Likert-type scale from 0 = not at all to 10 = very high.

Two lists, the one including 21 service facilities (e.g. food store, post office, doctor, hairdresser), the other 10 desirable neighbourhood features (e.g. quiet residential area, cultural opportunities in the vicinity, good medical care) were used to assess the availability of *features of the community* which can be considered as essential for daily necessities and neighbourhood quality.

In order to depict *patterns of everyday life*, various kinds of mobility (e.g. the availability of private or public transport modes) and of activities (derived from a list of 18 outdoor activities such as going for a walk, gardening, visiting cultural events) were assessed. The individual importance attributed to being out was measured with an 11-point Likert-type scale ranging from 0 = not important at all to 10 = very important. Outdoor motivation was further measured by a self-evaluation rating on an 11-point bipolar scale (0 = if I had a choice, I would always stay at home, 10 = if I had a choice, I would always be on the go).

Satisfaction with housing, with the living area and other important life domains as well as with life in general was assessed on an 11-point Likert-type scale used also in the German Welfare Survey and by the German Socio-Economic Panel (SOEP; score of 0 = lowest satisfaction to 10 = highest satisfaction; Zapf and Habich 1996).

Statistical analyses

Due to the sample stratification, all subsequent analyses were carried out using weighted data to correct for oversampling of older persons and males. Tests for mean group differences in continuous variables used the *t*-statistic; group-wise frequency counts for categorical variables were analysed using chi-square statistics. To explore which actual conditions prevailing in the two rural regions explain variance in general life satisfaction, and especially whether the impact of these predictors differs substantially between regions, we included both indicators from a variety of life domains as well as the corresponding interaction terms with the West vs. East regions in a multiple regression analysis for the pooled German sample.

Results

Older adults' living conditions in West and East German rural areas

In the following sections we briefly present some basic information about the sample and provide empirical evidence about socio-structural, personal, social, environmental, mobility and leisure-related aspects of living conditions in the two selected rural areas.

Socio-demographic aspects

Table 2 shows that the subgroups are roughly comparable between the two regions in terms of age. Average age was 68.6 years in the West German sample and 67.3 years in the East German sample. The levels of educational attainment, occupational status, net income and satisfaction with financial situation, by contrast, differed greatly between the East and West. East German elders reported more years of school attendance and occupational training or studies than did their West German contemporaries. Apart from this, women had a lower level of education than did men, and education was higher among the younger than among the older age groups in both regions. Among people below 65 years of age (the official retirement age), 36.4% in the West and 20.5% in

the East German rural areas still held a part- or full-time position. With respect to present or past occupations, we found more blue-collar workers, craftsmen and employees in the eastern German region whereas in the western German region there were more farmers and, consistent with West German family ideology, many housewives (data not shown). Average net income was higher in the West than in the East, and satisfaction with the financial situation was also significantly higher in the West.

Health-related aspects

The ability to perform activities of daily living (ADL), visu-motoric coordination, satisfaction with health and positive affect decreased with increasing age in both regions, as was to be expected. In most aspects, East Germans performed significantly better than their West German counterparts (Table 3). Nonetheless, the West Germans showed a similar level of satisfaction with health. Gender differences arose only in relation to ADL (women showing more difficulties in both regions). A specific East German pattern was found with respect to negative affect: only in this region did women express significantly more negative emotions than did their male contemporaries.

Social network aspects

Generally, older people live more often in single-person households than do younger people and, due to their higher life expectancy, women are more likely to live alone than are men. This pattern also existed in the German rural areas under investigation. However, in the East German area, only one out of five persons lived alone, whereas this proportion was approximately one-third for the West German area (Table 4).

No region, gender or age differences were found for the mean number of children (1.9) and for the proportion of childless participants (12.9% in the East German area and 12.0% in the West German area). For people with children, their sons and daughters were clearly the most important confidants (data not shown). Childless men and women named other relatives or their neighbours as the persons who were most important to them. The most important confidants lived within easy reach

Table 2 Socio-demographic aspects (rural areas, weighted data; database: MOBILATE Survey 2000; $n_{\text{West}} = 383$, $n_{\text{East}} = 379$)

Variable (mean (SD) or percent)	West Germany	East Germany	$t_{(DF)}$, $p < t $ or $\chi^2_{(DF)}$, $p < \chi^2$
Age (in years)	68.6 (9.1)	67.3 (8.9)	$-2.05_{(760)}$, $p < 0.041$
Education (in years) ^a	10.0 (2.6)	10.8 (2.7)	$4.00_{(759)}$, $p < 0.001$
Income (in Euro) ^b	784 (316)	719 (221)	$-3.03_{(643)}$, $p < 0.003$
Satisfaction with finances ^c	7.7 (1.9)	6.5 (2.3)	$-7.60_{(756)}$, $p < 0.001$
Part-/full-time occupation ^d	36.4%	20.5%	$10.37_{(1)}$, $p < 0.001$

^aTotal years of full-time education

^bPseudo-metric net income per person in the household

^cSelf-evaluation rating on an 11-point scale (range 0–10), higher scores indicating higher satisfaction

^dOfficial retirement age is 65 years in Germany. Thus, the values relate only to those respondents aged 64 years or younger

Table 3 Health-related aspects (rural areas, weighted data; database: MOBILATE Survey 2000; $n_{\text{West}} = 383, n_{\text{East}} = 379$)

Variable (mean, SD in brackets)	West Germany	East Germany	$t_{(\text{DF})}, p < t $
Activities of daily living (ADL) ^a	25.1 (5.1)	25.8 (5.1)	2.05 ₍₇₄₇₎ , $p < 0.040$
Visu-motoric coordination (DST) ^b	28.6 (13.0)	34.9 (15.4)	5.94 ₍₆₉₆₎ , $p < 0.001$
Satisfaction with health ^c	6.4 (2.7)	6.1 (2.5)	-1.57 ₍₇₅₇₎ , $p < 0.117$
Positive affect (PANAS ⁺) ^d	3.0 (0.9)	3.2 (0.7)	3.39 ₍₇₂₅₎ , $p < 0.001$
Negative affect (PANAS ⁻) ^d	2.0 (0.6)	2.1 (0.5)	2.87 ₍₇₂₁₎ , $p < 0.004$

^aSum score of subjective difficulties with 10 selected activities of daily living (range 10–30), higher scores indicating higher competence

^bTotal test score of the Digit Symbol Test (range 1–67), higher scores indicating higher visu-motoric functioning

^cSelf-evaluation rating on an 11-point scale (range 0–10), higher scores indicating higher satisfaction

^dRelative frequencies of 10 positive emotions and 10 negative emotions experienced during the preceding 12 months (1 = not at all, 5 = very often)

Table 4 Social network aspects (rural areas, weighted data; database: MOBILATE Survey 2000; $n_{\text{West}} = 383, n_{\text{East}} = 379$)

Variable (mean (SD) or percent)	West Germany	East Germany	$t_{(\text{DF})}, p < t $ or $\chi^2_{(\text{DF})}, p < \chi^2$
Household composition (living alone)	31.2%	22.0%	8.23 ₍₁₎ , $p < 0.004$
Parenthood (childless)	12.0%	12.9%	0.12 ₍₁₎ , $p < 0.729$
Number of children ^a	1.9 (1.2)	2.0 (1.3)	1.12 ₍₇₆₀₎ , $p < 0.265$
Network variety ^b	3.4 (3.0)	3.5 (2.6)	0.70 ₍₇₆₀₎ , $p < 0.485$

^aGiven value relates to all respondents, i.e. also childless persons were included in computations

^bCategories of potentially important persons who were not living in the same household as were the respondents

(same house or neighbourhood) for about 60% of older persons in both regions (East: 58%; West: 57%). Older men and women in the western area reported frequent contact with their most important confidants (41% daily) whereas contact frequency was much lower among East Germans (26% daily).

No region or gender differences arose with respect to network variety (possible categories of various reference persons). In both areas, younger persons (aged 55–74 years) had a more diversified network than did older persons (aged 75 years or older).

Environmental aspects

Most people in Germany are not home-owners but live in privately rented apartments. Rented houses or flats are less frequent in rural areas where home-ownership is a traditional feature. In this respect, there was no difference between the eastern and western German regions studied (ca. 82% home-ownership; Table 5). Neither did the regions differ with regards to the proportions of persons living in free-standing/semi-detached houses and those living in multi-storey or apartment buildings (ca. 91 vs. 9% respectively). In both regions, about 50% of individuals had been living in the same neighbourhood since their childhood (at age 10).

Comparison of the equipment of homes with basic housing features such as an indoor toilet, bathroom or shower, and central heating shows, however, that 10 years after unification households in the East German countryside still had significantly less of these basic amenities than was the case for the West German rural households. The unequal housing conditions are reflected in clearly lower domain-specific satisfaction in

the East German rural area. Nonetheless, attachment to home is only slightly lower among East German rural elders than among their West German contemporaries. Being out, on the other hand, is significantly more important to older people in the East than in the West German countryside ($M = 7.9$ vs. 7.4).

The data on available services and other neighbourhood features also lend weight to the view that East German rural areas have yet to adapt to West German conditions in domains of everyday life which can be crucial for independent living in old age. Significant differences between the two study regions exist with regard to the availability of basic facilities such as food store, post office, medical services, and important neighbourhood features such as clean environmental conditions, good medical care or cultural opportunities in the vicinity. The provision with services and amenities in terms of their average number can be regarded as critical in the East German rural area. Regarding satisfaction with services, this region stands out with its mean value of $M = 5.7$, the lowest level of satisfaction compared to various other European regions (Mollenkopf et al. 2004). Moreover, only a small minority (6.3%) of West German rural elders felt insecure in the area they were living in, but this was the case for as many as ca. one out of five (21.6%) of their East German contemporaries. Finally, the West German rural elders were more satisfied also with their living area in general ($M = 9.0$ vs. $M = 8.1$ in the East German region).

Mobility and activity aspects

In most urban areas older people can reach essential facilities on foot or by public transport but in rural

Table 5 Environmental aspects (rural areas, weighted data; database: MOBILATE Survey 2000; $n_{\text{West}} = 383, n_{\text{East}} = 379$)

Variable (mean (SD) or percent)	West Germany	East Germany	$t_{(\text{DF})}, p < t $ or $\chi^2_{(\text{DF})}, p < \chi^2$
Housing conditions			
Home ownership (owners)	83.1%	81.3%	0.38 ₍₁₎ , $p < 0.537$
Building type (semi-detached/free-standing house)	92.4%	89.5%	1.93 ₍₁₎ , $p < 0.165$
Basic housing features ^a	2.8 (0.5)	2.6 (0.6)	-2.93 ₍₇₅₉₎ , $p < 0.004$
Satisfaction with housing ^b	8.8 (1.6)	8.1 (2.2)	-4.91 ₍₇₄₆₎ , $p < 0.001$
Attachment to home ^c	9.3 (1.3)	9.1 (1.2)	-1.77 ₍₇₅₇₎ , $p < 0.078$
Features of living area			
Importance of being out ^d	7.4 (2.6)	7.9 (2.3)	3.13 ₍₇₅₈₎ , $p < 0.002$
Living in neighbourhood since age 10	49.9%	49.8%	< 0.01 ₍₁₎ , $p < 0.964$
Available services ^e	15.1 (5.0)	11.3 (6.1)	-9.24 ₍₇₅₆₎ , $p < 0.001$
Satisfaction with services ^b	7.2 (2.4)	5.7 (2.7)	-7.98 ₍₇₅₅₎ , $p < 0.001$
Neighbourhood features ^f	7.5 (1.8)	6.3 (2.0)	-8.47 ₍₇₃₃₎ , $p < 0.001$
Feeling insecure at night	6.3%	21.6%	37.00 ₍₁₎ , $p < 0.001$
Satisfaction with living area ^b	9.0 (1.5)	8.1 (2.2)	-6.30 ₍₇₆₀₎ , $p < 0.001$

^aSum score of basic housing amenities (range 0–3)^bSelf-evaluation rating on an 11-point scale (range 0–10), higher scores indicating higher satisfaction^cSelf-evaluation rating on an 11-point scale (range 0–10), higher scores indicate higher emotional values of housing^dSelf-evaluation rating on an 11-point scale (range 0–10), higher scores indicating higher importance of being outside and on the go^eSum score of a total of 21 service facilities^fSum score of a total of 10 desirable neighbourhood features

areas, where shops and services are usually less abundant and public transportation is less readily accessible, they often depend on a car or on other (informal or formal) transportation support. Regarding automobile ownership in Germany, the East–West gap has almost levelled off since 1990. Our data also show no significant East–West difference in the average values (Table 6) but more detailed analyses (not shown in table) revealed that, in the West German rural area, 50% of men and women aged 55–74 years living alone had a car available, compared to 45% of men and 17% of women of the same age living in the East German countryside. Among men aged 75 years or older, 37% of the West German and 19% of the East German rural elders reported owning a car. Car availability was especially low among women of this age in both regions (West: 14%; East: 12%).

As was the case for West Germany, the shift to private passenger transport coincided with cutbacks in public transport in East Germany. Nonetheless, satisfaction with public transport was still significantly higher in the East German rural area studied ($M = 6.6$) than in the West German area ($M = 5.3$). No differences were identified in satisfaction with mobility options in general. Regarding this aspect, however, satisfaction decreased substantially with increasing age in both regions.

Clear West–East differences were found with respect to activity attitudes and patterns. East German rural elders tended to describe themselves more often as being an outdoor type of person than did their West German counterparts. Men, in particular, stated that if they had their choice, they would always be on the go. This gender difference did not arise in the West Ger-

Table 6 Mobility, leisure activities and life satisfaction (rural areas, weighted data; database: MOBILATE Survey 2000; $n_{\text{West}} = 383, n_{\text{East}} = 379$)

Variable (mean (SD) or percent)	West Germany	East Germany	$t_{(\text{DF})}, p < t $ or $\chi^2_{(\text{DF})}, p < \chi^2$
Mobility			
Car available in household	69.5%	65.4%	1.48 ₍₁₎ , $p < 0.224$
Satisfaction with public transport ^a	5.3 (2.8)	6.6 (2.8)	6.37 ₍₇₄₃₎ , $p < 0.001$
Satisfaction with mobility options ^a	7.6 (2.5)	7.7 (2.3)	0.40 ₍₇₅₉₎ , $p < 0.688$
Leisure time activities			
Indoor–outdoor type ^b	4.2 (2.4)	5.1 (2.6)	5.39 ₍₇₅₇₎ , $p < 0.001$
Performed outdoor activities ^c	5.4 (2.5)	4.2 (2.5)	-5.89 ₍₇₆₀₎ , $p < 0.001$
More outdoor activities than before	13.5%	15.2%	0.43 ₍₁₎ , $p < 0.511$
Less outdoor activities than before	37.7%	35.8%	0.30 ₍₁₎ , $p < 0.582$
Satisfaction with leisure time activities ^b	7.5 (2.4)	6.1 (2.8)	-7.37 ₍₇₅₆₎ , $p < 0.001$
Quality of life			
Satisfaction with life ^a	7.7 (1.9)	7.0 (2.3)	-4.39 ₍₇₅₁₎ , $p < 0.001$

^aSelf-evaluation rating on an 11-point scale (range 0–10), higher scores indicating higher satisfaction^bSelf-evaluation rating on an 11-point bipolar scale (0 = if I had a choice, I would always stay at home, 10 = if I had a choice, I would always be on the go)^cSum score derived from a list of 18 outdoor activities

man sample. In this area, by contrast, there was a significant shift towards indoor orientation in the older age group.

Despite their more distinct outdoor orientation, East German rural elders pursued a significantly smaller range of outdoor activities than did their West German contemporaries. This finding may, however, display a somewhat distorted picture because the intensity or frequency of a certain activity was not asked for. More instructive with respect to West–East differences or similarities is perhaps how satisfied people are with their leisure possibilities, and whether they pursued more or less outdoor activities than they did about 5–10 years earlier. The proportion of persons in each of these activity categories was similar in both rural areas: only between 13.5% (West) and 15.2% (East) rural elders reported performing more outdoor activities, and between 35.8% (East) and 37.7% (West) had pursued less than before. However, overall satisfaction with the possibility to pursue leisure time activities was substantially higher among the West German elders than among their East German counterparts ($M = 7.5$ vs. $M = 6.1$ respectively). East Germans aged 75 years or more, in particular, showed very low satisfaction ($M = 5.2$) whereas in the other subgroups no significant age or gender differences were found regarding satisfaction with this life domain.

The partly diverging living conditions and opportunities in the West and East were also reflected in different levels of life satisfaction. Independent of age or gender, older people in the East German rural area were significantly less satisfied with life in general ($M = 7.0$) than were their West German contemporaries ($M = 7.7$). The question which must be raised now is which of the prevailing differing or similar aspects contribute most to explaining variance in this evaluation, and whether or not similar components contribute to life satisfaction of older people in rural areas of East and West Germany.

Explaining life satisfaction in German rural areas: results of regression analyses

To explore which actual conditions and personal appraisals prevailing in the two rural regions explain variance in general life satisfaction, we carried out multiple regression analysis. In our prediction model, we included socio-demographic, health-related, social, environmental, mobility and leisure-related predictor variables from those described above which had proven to contribute substantially to older people's well-being in past studies (e.g. Barresi et al. 1983–1984; Baldassare et al. 1984; Golant 1986, 2004; Farquhar 1995; Lamb 1996; Veenhoven 1996; Wenger 1997; Smith et al. 1999; Cvitkovich and Wister 2001; Fernández-Ballesteros et al. 2001; Evans et al. 2002; Diener et al. 2003; Oswald et al. 2003) as well as in our previous research (e.g. Mollenkopf et al. 2002, 2004). In addition to objective conditions, subjective evaluations were included where

applicable. In concordance with our previous argumentation, we included region*predictor interaction terms to test, rather than simply describe, the indicators' differences in predictive power between regions. Table 7 shows the variables included and the corresponding findings.

The overall model explains 44% of variance (adjusted r^2) in older persons' general life satisfaction in the German rural regions studied. Satisfaction with the financial situation and emotional well-being in terms of low negative affect are the most important components contributing to this appraisal. Of almost equal importance are aspects of the environment: the availability of shops and services nearby and satisfaction with the living area in general significantly influence rural elders' satisfaction with life. Satisfaction with the possibilities to pursue leisure activities as well as satisfaction with mobility opportunities are further essential components contributing to subjective quality of life among German rural elders. In addition, satisfaction increases with age, and women are more satisfied with life than are men. Housing amenities and social network aspects (living together, network variety) did not impact upon satisfaction in either study area.

Apart from these main effects, the analysis also revealed significant region-specific peculiarities. Whereas satisfaction with finances appears to be the most powerful predictor for general life satisfaction, with a unique contribution of 2.8% of the variance in life satisfaction ratings throughout the regions under study, the significant interaction with region indicates differential bonds between these satisfaction ratings in eastern and western rural areas. As can be seen from the positive beta estimate for the corresponding interaction term, satisfaction with one's financial situation is found to be a far better indicator for general life satisfaction among respondents in rural West Germany than for those in the eastern region. This differentiation alone adds a further 0.4% to the explained variance in life satisfaction. Moreover, although the predictor variable "functional health" (ADL) did not reach statistical significance in the overall model, the corresponding interaction term points to its substantial impact on the West German but not on the East German elders' satisfaction with life. On the other hand, mobility-related aspects seem to play a more important role among older people in the East than in the West German countryside: if they are able to drive a car and if they are satisfied with their mobility options in general, they are also more satisfied with their life in general.

Discussion

The comparison of living conditions which are important for autonomy and well-being in old age showed a range of similarities in the West and East German rural areas studied, but also considerable differences. For one, they differed with respect to socio-demographic aspects

Table 7 Predictors of life satisfaction (rural areas, weighted data; database: MOBILATE Survey 2000; $n_{\text{West}} = 383$, $n_{\text{East}} = 379$)

Linear regression model	Predictive value			Interaction with region		
	Stand. beta	$p < t $	Semi-partial r^{2a}	Stand. beta	$p < t $	Semi-partial r^{2a}
Socio-demographic						
Age	0.15	*	0.6	−0.52	n.s.	0.3
Sex (1 = female)	0.12	*	0.4	−0.12	n.s.	0.3
Satisfaction with finances	0.28	***	2.8	0.31	*	0.4
Health-related						
Activities of daily living (ADL)	−0.12	n.s.	0.3	0.37	*	0.5
Visu-motoric coordination (DST)	−0.03	n.s.	0.0	0.11	n.s.	0.1
Positive affect (PANAS ⁺)	0.12	n.s.	0.3	−0.03	n.s.	0.0
Negative affect (PANAS [−])	−0.17	**	1.0	−0.04	n.s.	0.0
Satisfaction with health	0.07	n.s.	0.1	0.13	n.s.	0.1
Social network						
Household type (1 = multi-person)	0.03	n.s.	0.0	0.03	n.s.	0.0
Network variety	−0.02	n.s.	0.0	0.03	n.s.	0.0
Housing						
Basic household features	−0.03	n.s.	0.0	0.17	n.s.	0.1
Home ownership (1 = owner)	−0.01	n.s.	0.0	−0.06	n.s.	0.0
Satisfaction with housing	−0.02	n.s.	0.0	0.11	n.s.	0.0
Living area						
Available services	0.19	**	0.9	−0.21	n.s.	0.3
Neighbourhood features	−0.02	n.s.	0.0	0.05	n.s.	0.0
Satisfaction with living area	0.16	**	0.8	−0.18	n.s.	0.1
Mobility						
Car use, as passenger	−0.01	n.s.	0.0	< −0.01	n.s.	0.0
Car use, as driver	0.10	n.s.	0.2	−0.16	*	0.4
Satisfaction with public transport	−0.12	n.s.	0.3	0.18	n.s.	0.3
Satisfaction with mobility	0.16	*	0.5	−0.31	*	0.5
Leisure time activities						
Outdoor leisure activities	0.01	n.s.	0.0	0.07	n.s.	0.0
Satisfaction with leisure activities	0.14	*	0.5	−0.05	n.s.	0.0
Model determination	$r^2 = 0.48$; adj. $r^2 = 0.44$					

^aProportion of the dependent variable's total variance explained by regression on the predictor uniquely; the squared semi-partial correlations do not sum up to the model's total r^2

in that older adults in the eastern region had more years of education, less employment, and lower income than was the case for the western region—all well-known prevailing East–West differences which exist not only in rural areas but also between the old and new German states in general (StBA 2004). In addition, East German rural elders seem to be equipped with more health-related resources. They performed better in activities of daily living (ADL) and visu-motoric coordination, and revealed higher subjective health and more positive (but also more negative) affect than did their West German contemporaries. Such differences in functional and subjective health were not found in a similar study conducted in two other rural areas in 1999 (Mollenkopf et al. 2001; Oswald et al. 2003). This study, however, included larger localities (up to 20,000 inhabitants) and the selected East German region comprised some former industrial areas, which may explain the diverging findings.

With respect to social resources, we found both similarities and differences. Parenthood (having children), the number of children, and social network variety were almost the same in the two regions. In the West German area, however, a larger proportion of older persons was living alone. Contact frequency with

important confidants was substantially higher in the western than in the eastern area. The latter finding seems to reflect general socio-cultural habits, as it is in line with data from general population surveys (SOEP, Mathwig and Mollenkopf 1996; Alters-Survey, Scherger et al. 2004) based on which social contacts were repeatedly found to be less frequent in East than in West Germany.

Differences between East and West German rural elders' activity patterns also emerged in relation to outdoor activities. The East Germans pursued a much smaller variety of activities than did their West German contemporaries. These findings are again consistent with the German Alters-Survey (Scherger et al. 2004) and general survey data showing lower activity rates even among young East Germans (aged 17–25 years; StBA 2004). We cannot clarify with our data whether the smaller range of outdoor activities in the East German rural area is due to less favourable opportunities or whether it is rooted in socio-cultural differences. Still, the East Germans' low satisfaction with their leisure possibilities reflects unfulfilled needs. Nevertheless, mobility options seem to have improved since the 1990s because, at least on average, similar conditions were found regarding car availability and satisfaction with mobility possibilities in general, and satisfaction with

public transport was even higher among the East German elders.

A differentiated picture arose once again with respect to environmental resources. Home-ownership, the type of buildings, years of residency and attachment to home were almost equal in both rural areas. However, significant differences to the disadvantage of older people in the East German countryside continue to exist particularly when it comes to housing amenities, shops, services and other important neighbourhood features. These basic environmental components, constituting major preconditions for an autonomous living especially in old age when physical and sensory abilities to be mobile are decreasing, were significantly less available in the East German rural region compared to the situation in the West German study area. A limitation of this study is that it was restricted to only two—albeit carefully selected—areas and therefore, any generalisations should be made with caution. Large deviations may exist in both positive and negative directions because of a region's specific geographical or structural conditions. Motel et al. (2000), for instance, found that in 1996 environmental indicators like shops, medical services and public transport were, on average, even less available in small West German villages than in East German villages of the same size. This corresponds with our findings regarding public transport, but not with those regarding shops and services.

The objectively prevailing disadvantages in living conditions are reflected in the East German elders' lower satisfaction with their finances, housing and services in the vicinity, with the area they live in, with their possibilities to pursue leisure activities and, finally, with life in general. Thus, our findings do not support the so-called paradox of actual versus perceived life conditions suggesting that older people may be particularly capable of adapting their needs and expectations to unfavourable conditions in order to maintain subjective well-being (Kivett 1988; Staudinger 2000; Oswald et al. 2003). Instead, in this East–West comparison, less favourable conditions resulted in lower appraisal and, vice versa, better conditions were accompanied by higher satisfaction (the only exception being satisfaction with health). This interpretation should be taken with caution, however, because cross-sectional data are not appropriate for “cause–consequence” statements. More insight into the possible impact of, on the one hand, individual resources and, on the other, environmental resources on subjective quality of life can be gained from the predictor variables explaining the rural elders' general life satisfaction.

Studies in quality of life have consistently shown that health—subjectively perceived health, in particular—and an individual's economic situation are the most important factors affecting satisfaction with life in general (e.g. Barresi et al. 1983–1984; Lamb 1996; Venhoven 1996; Fernández-Ballesteros et al. 2001; Diener et al. 2003; Oswald et al. 2003). This was also the case

for the German rural elders. Findings of regression analysis revealed similar impacts of subjective evaluations of basic human conditions in both rural areas. A satisfactory financial situation and perceived good mental health constituted the main factors of older rural adults' life satisfaction in the East and West. In the West German area, in particular, satisfaction with finances exerted a strong impact—a finding which corresponds well with that of earlier work in East and West German rural areas (Mollenkopf et al. 2001; Oswald et al. 2003).

Other socio-demographic aspects like age and gender affected life satisfaction much less. Why satisfaction increases with age, and why women are more satisfied with their life than are men are interesting questions which, however, must remain open.

Social network aspects (living together, network variety) showed no impact at all on rural elders' satisfaction. This somewhat surprising result is, however, in accordance with findings based on the German Socio-Economic Panel, showing that living together with a spouse or partner contributes to satisfaction with life in younger age groups but not in old age (70 years and older; StBA 2004).

In addition to economic and health-related aspects, environmental conditions—with the exception of housing amenities—constitute significant predictors of life satisfaction among elders in rural Germany. Inadequate environmental conditions in terms of a restricted number of facilities necessary for daily living nearby seriously diminish the life satisfaction of older people, whereas high satisfaction with the residential area increases their subjective quality of life.

Satisfaction with leisure possibilities also constitutes an important domain-specific appraisal in both study areas, confirming the findings of other research that activity and health contribute significantly to general life satisfaction (Fernández-Ballesteros et al. 2001). Mobility options seem to be another crucial component in older rural people's subjective quality of life—an aspect which has often been emphasised in research on mobility in old age (e.g. Carp 1988; Marottoli et al. 1997; Coughlin 2001; Cvitkovich and Wister 2001; Owsley 2002) but has largely been neglected in satisfaction research. An exception is Farquhar's (1995) study of older people's definitions of quality of life, in which the ability to go out was associated with a better quality of life whereas immobility and being housebound were found to decrease quality of life (Farquhar 1995). In the East German rural area, in particular, the ability to actively drive a car and satisfaction with opportunities to be mobile in general appeared to have a positive impact on older people's life satisfaction. Under unfavourable neighbourhood conditions, as found in the rural areas of eastern Germany, it is understandable that good mobility options contribute to satisfaction with life in general more strongly than if basic needs related to the living environment are fulfilled, as was the case in the West German countryside—at least in the area included in our study.

Thus, we can conclude that, 10 years after unification, there exist some basic similarities in East and West German rural elders' objective life circumstances and subjective needs and evaluations but that, at the same time, a range of conditions associated with ageing well continue to differ. On the one hand, this is due to structural and environmental resources which were shown to be less favourable in the East German than in the West German area. The study's limitation to two selected regions and some findings diverging from previous studies point, however, to the necessity stressed by Scharf (2001) to consider the high diversity and heterogeneity of rural areas. On the other hand, our study highlighted diverging social and activity patterns which may in turn reflect deep-rooted socio-cultural habits. Hence, despite its limitations, the study contributes to drawing both a differentiated and comprehensive picture of the many facets of older people's lives in East and West German rural areas.

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