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3 Accessibility to neighbourhood services and well-being among older Europeans

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- ▶ Accessibility to neighbourhood services is a measure of social inclusion
 - ▶ Most older Europeans have good accessibility but a minority (<10 %) do not
 - ▶ Residents of urban neighbourhoods have better accessibility than those in rural areas
 - ▶ We find evidence for a positive association between accessibility and well-being, which is stronger among respondents living in an urban setting
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3.1 Neighbourhood service accessibility in later life

Access within a neighbourhood to local services is a key component of neighbourhood quality and can be perceived as an indicator of social inclusion. Not only is the ability to reach such services as grocery stores, physicians and banks essential for managing daily living tasks and for maintaining residential independence, it also fosters a sense of belonging to the neighbourhood. Moreover, neighbourhood accessibility encourages social interaction with neighbours and with service personnel. Therefore, the construct of “neighbourhood service accessibility” can serve as a latent measure of social inclusion, especially among older adults.

In later life when physical impairment and health conditions can impede abilities to handle distances, ease of access to services becomes even more important (Wahl et al. 2012). Neighbourhood services which can be easily reached and are within close geographical proximity can lessen the difficulties brought on by limited mobility that many older adults experience when they have declines in health. In addition, accessibility to local services is an important indicator of residing in an age-friendly community. In such settings, “aging in place” unfolds with greater ease and to a greater degree than in neighbourhoods having only a paucity of local services (Scharlach et al. 2014). Thus, accessibility to neighbourhood services not only facilitates independence in attaining needed goods and assistance, it also furthers the sense of living within a hospitable environment which, in turn, promotes feelings of social inclusion with those living nearby.

Accessibility of services within neighbourhood settings is usually greater in urban settings in which convenient public transportation is available (Cao et al.

2010) or services are within walking distance (Kerr et al. 2012). But even in rural settings where services are more distant, studies show that some older adults maintain the ability to reach needed services (Pucher & Renne 2005). This suggests that the notion of accessibility includes a subjective component of ease of access to services, independent of the means of access, whether by foot, car, or public transportation. Older residents of urban neighbourhoods are also found to maintain higher activity levels than their rural counterparts, as demonstrated by their greater participation in activities outside of the home (Haak et al. 2008).

Older adults who reside in communities with good service accessibility are also found to have better physical health as well as better quality of life and well-being (Kerr 2012) in comparison to those living in less accessible environments. Empirical research highlights the association between service accessibility and improvements in an array of quality of life outcomes among older persons such as fewer depression symptoms (Berke et al. 2007), higher life satisfaction (Oswald et al. 2011), and higher scores on overall quality of life assessments (Gabriel & Bowling 2004).

In the present analysis we examine the extent of local service accessibility, as perceived by the individual, using relevant items from the special set of social exclusion items that was introduced in the fifth wave of SHARE (Myck et al. 2015). The sample was restricted to household members aged 50+ who received the social exclusion questions ($n=41,784$). In the first stage of the analysis, we performed factor analysis to map the domain of neighbourhood access, based upon the four self-reported indicators. The results confirmed that the items all loaded on a single factor, allowing the construction of a single additive measure representative of perceived accessibility of neighbourhood services. Second, we explored country differences in the neighbourhood access scores to consider whether accessibility varies across nations. In the third stage, we regressed the accessibility score on a range of variables in order to examine whether urban and rural differences alter perceptions of accessibility of services. Lastly, we performed multivariate OLS regressions to consider the association between accessibility and two well-being outcomes – depressive symptoms and quality of life, controlling for sociodemographic background and health, noting especially urban–rural differences.

3.2 Neighbourhood accessibility score

Four variables rated the ease of access to services that are integral to daily life: bank (hh027), grocery store (hh028), general practitioner (hh029), and pharmacy (hh030). Answer categories for the question “How easy is it to get to...?” were

1) very easily, 2) easily, 3) difficult, 4) very difficult. Individual analysis of the distributions of each of these variables revealed, on the whole, a high degree of accessibility to the respective neighbourhood services. For each of the services, some 80–85 per cent of the sample reported having easy or very easy access. In contrast, only about five per cent of the sample indicated having a very difficult time reaching each of the neighbourhood facilities. Country differences were examined for each of the individual accessibility items. Summary statistics by country are presented in Table 3.1.

Table 3.1: Ease of access to bank, grocery store, general practitioner and pharmacy by country: percentage with easy to very easy access

Country	Bank (hh027_)		Grocery Store (hh028_)		General Practitioner (hh029_)		Pharmacy (hh030_)	
	n	%	n	%	n	%	n	%
SE	2,972	91.2	2,968	93.6	2,965	92.0	2,967	92.8
DK	2,642	84.2	2,643	92.8	2,640	88.2	2,640	88.8
DE	3,420	84.3	3,423	83.8	3,420	79.4	3,425	82.3
LU	1,166	87.4	1,168	86.1	1,167	87.1	1,168	87.1
NL	2,550	89.7	2,555	93.2	2,553	88.6	2,552	91.2
BE	3,697	84.4	3,699	86.9	3,682	85.6	3,699	91.6
FR	2,967	85.2	2,970	86.0	2,970	84.7	2,972	88.6
CH	2,056	91.8	2,057	93.1	2,056	89.3	2,056	87.5
AT	2,831	83.5	2,833	85.6	2,832	82.0	2,832	83.0
ES	3,655	82.5	3,668	86.9	3,671	83.0	3,671	87.3
IT	2,770	81.4	2,778	86.0	2,779	79.1	2,779	85.5
EE	3,686	65.2	3,687	73.1	3,685	64.8	3,688	69.5
CZ	3,002	76.2	3,091	89.5	3,094	81.6	3,091	81.4
SI	2,040	78.3	2,042	82.8	2,042	76.3	2,043	78.3
IL	1,343	75.3	1,351	87.3	1,346	71.0	1,352	72.0
Sample	40,797	82.4	40,933	86.8	40,902	82.0	40,935	84.7

Source: SHARE Wave 5 release 0

A principal component factor analysis was conducted to examine whether the four individual service access variables measured a single construct representative of neighbourhood accessibility. The factor analysis retained one factor which accounted for 82 per cent of the variance. In addition, less than 20 per cent of the variance of each individual access indicator was not associated with the retained factor. Moreover, equality of factor loadings was confirmed as each item comprising the factor contributed equally to the final neighbourhood accessibility score factor.

Testing for the internal reliability of the four items revealed a Cronbach's α of 0.93 with all items displaying a good fit. Thus, an additive score was calculated to represent an overall measure of neighbourhood accessibility (range: 4-16). The answers were reverse coded from the raw data so that higher scores represented easier access to the services.

The mean accessibility score of the sample as a whole was 12.7. One quarter of the sample attained the highest score (16), indicating that these respondents had very easy access to all four services. Another third of the sample had a score of 12 and therefore had easy but not very easy access to most of the services. Approximately ten per cent of the sample had the lowest possible scores (4-8) on the neighbourhood accessibility measure, indicating very limited accessibility of any of the essential services.

3.3 Neighbourhood accessibility: country comparisons

The second stage of the analysis considered neighbourhood service accessibility within each of the 15 countries represented in the fifth wave of SHARE. Cross country comparison of the derived accessibility score highlights differences in access to essential services as experienced by the older adults. The score for each country is displayed in Figure 3.1. The scores ranged from the least accessible (11.4) in Estonia to the most accessible (13.7) in Sweden.

Initial analysis of variance revealed significant country differences in accessibility to neighbourhood services. A one-way ANOVA yielded a moderate effect size. However, post hoc analysis using the Tukey HSD criterion indicated few homogeneous subset groupings of countries. Sweden stood alone as the country with the greatest accessibility, and Estonia was distinctive as having the least. Israel formed a second distinct sub-grouping with a low mean of 11.9. The remaining countries fell into partly overlapping groupings in-between these extremes.

The lack of major country differences on neighbourhood accessibility among the majority of the 15 SHARE countries can be partially attributed to an apparent diversity in the ease of access to local services for older adults within each of the nations included in the survey. This conclusion is substantiated by the large standard deviations of the mean accessibility score evident for each country. Thus, while certain countries have a higher or lower than average degree of accessibility to neighbourhood services, access (or lack thereof) may not be country specific and diversity on this important aspect of inclusion exists within each country.

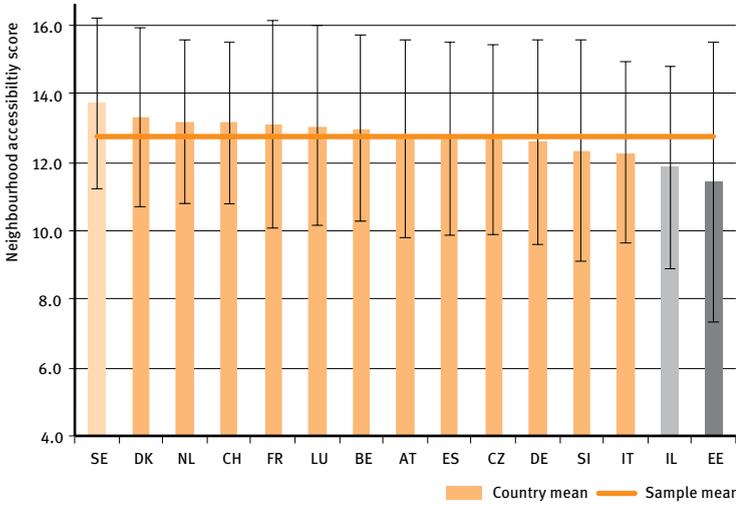


Figure 3.1: Neighbourhood service accessibility score by country
 Notes: n=40,707, unweighted; F(14, 40,602) = 114.27, Cohen's f² = 0.19
 Source: SHARE Wave 5 release 0

3.4 Urban and rural distinctions of perceived neighbourhood accessibility

The next stage of the inquiry examined whether perceived accessibility of neighbourhood services differs between urban and rural neighbourhoods. We classified big cities, suburbs of big cities and large towns as urban (1) and small town and rural area or village as rural (0). 43 per cent of the study sample resided in the so-defined urban areas.

The standardised regression coefficients for several key variables are presented in Figure 3.2. The results show that even after controlling for a set of possible confounders, residing in urban settings compared to rural neighbourhoods was associated with higher neighbourhood accessibility scores ($\beta = 0.16$; $p < 0.001$). Additionally, the standardised coefficients indicate that the urban or rural nature of a neighbourhood had the second strongest association with the self-reported neighbourhood accessibility score, second only to mobility limitations. The findings underscore the already well-established urban-rural distinction in relation to neighbourhood accessibility, namely that urban areas have more accessible neighbourhood services. Thus, whereas rural life is sometimes related to a range of positive features that promote social inclusion at younger

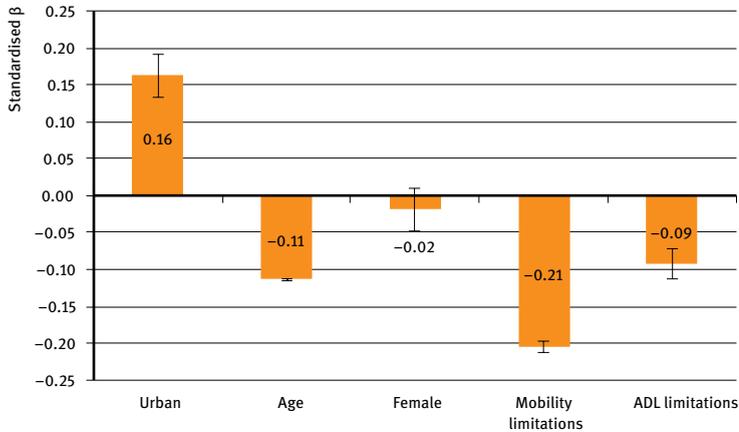


Figure 3.2: Factors associated with neighbourhood service accessibility

Notes: Standardised beta coefficients from OLS regression; $n=38,231$, unweighted; $R^2 = .19$; all shown findings significant at $<.01$; model controlled for: age, gender, marital status, number of children, perceived income adequacy, country, ADL count, mobility limitations

Source: SHARE Wave 5 release 0

adult ages, such as community involvement, volunteering and so on, the rural setting can become a risk factor for older people (Wenger 2001). This is because the lesser accessibility to needed services in rural areas can accentuate feelings of social exclusion among the oldest members of the community.

3.5 Neighbourhood accessibility and well-being

Finally, we examined the relationship between ease of access to neighbourhood services and well-being. Because the previous analysis revealed an urban and rural distinction in relation to subjective perceptions of accessibility, the concluding analysis also took into account the interaction between urban/rural setting and neighbourhood service accessibility vis-a-vis well-being. As previously stated, there is already evidence of the link between accessibility of neighbourhood services and subjective well-being in late life. However, the studies in question were limited in their small sample sizes which were drawn primarily from within small geographic areas. The introduction of neighbourhood access questions in the large, multinational SHARE survey permits empirical analysis of older adults living in an array of national contexts.

Two multivariate OLS regressions were run to examine the association between neighbourhood accessibility and two measures indicative of well-being: depressive symptoms (EURO-D; range 0–12) and quality of life (CASP; range 12–48). The average number of EURO-D symptoms among the SHARE respondents was 2.5, and the average CASP score for quality of life was 37.7. The first regression model examined the association between neighbourhood accessibility and the well-being outcomes. The second model added the interaction between neighbourhood accessibility and urban or rural setting to the analysis.

The first regression revealed that ease of access to neighbourhood services had a positive association with well-being among the respondents, even after taking into account all the control variables (these included age, gender, years of education, perceived income adequacy, country, urban/rural neighbourhood, number of children, marital status, most frequent contact with a child, number of chronic conditions, number of activities of daily living (ADL) limitations and number of mobility impairments). Easier access of neighbourhood services was found to be associated with fewer depressive symptoms ($\beta = -0.029$, $p < .001$) and higher quality of life ($\beta = 0.082$, $p < .001$). Living in urban settings was negatively associated with well-being when controlling for socioeconomic background, health, and service accessibility. Specifically, respondents living in urban settings had more depressive symptoms ($\beta = 0.021$, $p < .001$) and lower CASP quality of life scores ($\beta = -0.021$, $p < .001$) than their rural counterparts.

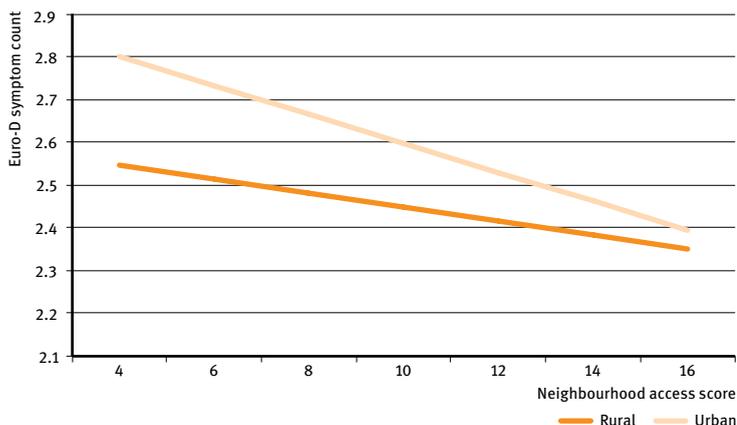


Figure 3.3: The interaction of urban/rural setting and neighbourhood service accessibility in relation to the number of Euro-D depressive symptoms

Notes: $n=37,343$; model controlled for: age, gender, marital status, number of children, perceived income adequacy, country, ADL count, mobility limitations

Source: SHARE Wave 5 release 0

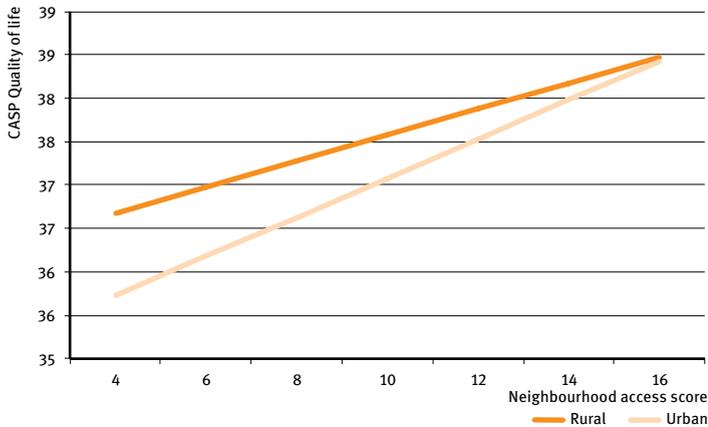


Figure 3.4: The interaction of urban/rural setting and neighbourhood service accessibility in relation to the CASP quality of life score

Notes: $n=35,860$; model controlled for: age, gender, marital status, number of children, perceived income adequacy, country, ADL count, mobility limitations

Source: SHARE Wave 5 release 0

In the second regression, an interaction term of neighbourhood accessibility and urban setting was entered into the regression model. The specific findings are portrayed in Figures 3.3 and 3.4. The results showed that both in rural and in urban settings, higher accessibility scores were significantly associated with fewer reported EURO-D symptoms and higher quality of life scores, as measured by CASP. Interestingly, the association is significantly stronger among those living in urban settings. While in the case of rural areas the estimated coefficients were: $\beta = -0.022$ ($p < .001$) and $\beta = 0.071$ ($p < .001$) for EURO-D and CASP respectively, the values of the coefficients for urban areas were: $\beta = -0.053$ ($p < .05$) and $\beta = 0.081$ ($p < .001$). In other words, while, on average, depressive symptoms are more frequent and quality of life is somewhat lower in an urban setting, this difference disappears under conditions of good access to neighbourhood services (see Figures 3.3 and 3.4).

Among the control variables, the associations with the different well-being outcomes were as expected. Being married or having a partner, being older, having higher income and more years of education were all associated with better well-being, both in terms of lower depression and higher quality of life. Likewise, worse functionality was negatively associated with well-being among older adults.

3.6 Neighbourhood accessibility and social inclusion

We find that the four questions on individual social exclusion pertaining to the accessibility of essential neighbourhood services can be combined into one additive score representative of an overall ease of access to necessary facilities. The descriptive overview revealed that, in general, older Europeans live in neighbourhoods with easy to reach services. However, a small but notable proportion of respondents live in neighbourhoods with services that are perceived as difficult to access.

The ease of access to neighbourhood services was highlighted in the country comparison of the accessibility score, which largely showed little cross-country variation. At the same time, however, large country specific standard deviations for the accessibility score suggest that within each country, the accessibility of essential services varies greatly among older citizens. This suggests that the construct may vary by neighbourhood sensitive facets such as socioeconomic composition or rural versus urban distinctions.

Our findings confirmed that urban settings are indeed perceived to be more accessible, in terms of services, than their rural counterparts. It seems, therefore, that rural settings have a greater risk for the exclusion of its oldest residents, at least in terms of service accessibility.

The analysis also lends empirical support for the positive association that exists between neighbourhood accessibility and subjective well-being in later life. Our findings show that among older Europeans, better access to services is associated with fewer depressive symptoms and overall better quality of life in both urban and rural neighbourhoods. Because access to neighbourhood services constitutes an indicator of social inclusion, these findings suggest that the feelings of social inclusion, which are a by-product of continued independence with life's responsibilities, contribute to better subjective well-being in later life.

What is particularly striking is that these associations are stronger in urban than in rural settings, suggesting that urban residents may be at greater risk of social exclusion in this respect. Planners and service providers to older adults should be aware of this variability in the ease of access to services in order to better facilitate older people in reaching essential services in their communities and to promote age-friendly neighbourhood environments. Moreover, as the results of this analysis show, neighbourhood service accessibility in the later part of life is independently associated with well-being among older Europeans. Ease of access to services enables a continuation of independence in meeting life needs among older adults even when facing the many physical and mental chal-

lenges of aging. It also furthers a hospitable social climate within which to age-in-place and continue to maintain social interactions. In sum, access to services constitutes an essential aspect of social inclusion that, in turn, is associated with better well-being in late life.

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