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Suitability of the Residential Location of Older People: towards a Typology in Flanders, Belgium

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1 ABSTRACT

Ageing-in-place is often a desire among older individuals and a basic principle of the Flemish care policy, which emphasizes informal care. However, it can also be seen as a normative framework, especially when alternative residential options are lacking or hardly accepted. Our prior findings indicate that older parents in Flanders (Belgium) generally reside in close proximity to their children. Most informal care is provided within the family framework, mainly by partners or children. This does not mean that they are always available, willing to help, or asked for help. Therefore a suitable neighborhood with enough amenities is another crucial factor to facilitate living independently at older age. However, there is insufficient understanding about both the current living environment and residential mobility of older adults. While existing (inter)national literature suggests low residential mobility among older adults, detailed insights into specific moving patterns, such as the balancing act between housing, proximity to children and neighborhood characteristics, are lacking. A GIS analysis is conducted based on data 1) on facilities, such as supermarkets, bakeries and medical facilities, 2) and the residential location of older people retrieved from the national population register. The aim is to evaluate whether each older individual's current residential location would support ageing-in-place, based on the assumption that this partly correlates with the availability of amenities and services. As a second step our research focused on the residential mobility between 2002 and 2017 and investigated whether those who changed their residential location did that towards a location that is (not) better equipped than the previous one. Our research shows that approximately one-fifth of older adults in Flanders (aged 65+ in 2002) changed their residential location between 2002 and 2017, excluding those who moved to nursing homes. While, in general, those who moved have improved their situation, complexities are revealed in terms of the living environment of those who did not move, asking for more research into the trade-off between housing, proximity to children and neighborhood amenities and services.

Keywords: older adults, neighbourhood amenities, moving, quantitative methods, Flanders

2 INTRODUCTION

In most European countries there is an emphasis on ageing-in-place, often combined with a re-emphasis on informal caregiving, which in reality is often provided by children. Therefore, in a previous REAL CORP contribution (Gruijthuijsen et al., 2022), we focused on the geographical proximity between older adults and their children in Flanders (Belgium). While these results show that, in general, the distance between older adults and children is quite limited, merely proximity to children is not enough to age-in-place. While we found that half of the older adults aged 80 or above, in 2017, lived within 2 kilometers from the closest child, others lived substantially further away. Furthermore, we noticed an increase in distance over time, which may lead to challenges in informal family care provision. Although international research shows that there is a strong correlation between providing informal care and geographical distances between parents and children (e.g. Hank et al., 2007; Knijn & Liefbroer, 2006), proximity alone cannot be a guarantee that informal care is provided, let alone on a frequent basis. Equally – or even more - important factors to age in place are related to the neighborhood and physical environment, such as the availability of (enough) services and amenities. While a supportive living environment is acknowledged when it comes to age-in-place, the focus is often too narrow and excludes the neighborhood. Even in discussions about the person-environment fit, the focus is mainly on housing, neglecting the physical environment (Sun et al., 2018). While research into ageing tends to stress macro-economic factors, such as pensions and healthcare expenses, or micro-level elements such as the dwelling, the neighborhood is little researched. Hence Greenfield et al. (2019) point to the need for a 'community gerontology' to take into account the level of the neighborhood and the living environment. While the Age-friendly cities network of the World Health Organization lists 8 interconnected

domains, and focuses on accessibility and age-friendliness of outdoor spaces and buildings, it does not say anything about the availability of amenities and services (beyond access to health care).

For this purpose, we have developed a classification of residential locations of older people in Flanders, focusing on the availability of amenities and services in the immediate surroundings. Not only the actual living conditions of older adults in terms of proximity to important amenities and services are at stake, but also the process of moving to locations that are less or better equipped. In section 3, we will briefly discuss the importance of the neighborhood at older age. Section 4 will introduce the methodology on the neighborhood classification and the moving patterns, followed by the results (section 5) and conclusion and discussion (section 6).

3 LITERATURE REVIEW: THE IMPORTANCE OF THE NEIGHBORHOOD AT OLDER AGE AND RESIDENTIAL MOBILITY

Ageing-in-place is often interpreted rather narrowly as a policy approach to help older adults remaining in their own family dwelling for as long as possible. However, the concept implies much more complexities and can better be considered as remain living in the own familiar environment (beyond the dwelling), with a certain degree of independence, instead of living in a residential care setting (Wiles et al., 2012). From this perspective, even moving to an adjusted apartment, or assisted living apartment in the same neighborhood can be considered as ageing-in-place. In that sense we can point to Martens (2018, p. 9) who states that "the meaning of "place" [in ageing-in-place] is no longer "home" but rather "neighborhood" and ageing-in-place can be seen as not having to move outside the neighborhood to receive care services. Of course this requires a neighborhood that supports someone's independency by offering enough amenities and services, social support, and a diversity of residential options. It makes sense that the focus with ageing-in-place is on the dwelling and whether it is (or can be) adjusted to current and changing needs, but not without taking into account whether the neighborhood is supportive for older people to keep a certain level of independence. Furthermore, the neighborhood is often considered a 'constant' or 'stable' factor, while neighborhood dynamics can affect ageing-in-place and the wish to stay or move (Lewis & Buffel, 2020). In general, the neighborhood can be an important push or pull factor when it comes to a residential move and it is shown that the quality of the neighborhood differs along the life course (Rabe & Taylor, 2010). De Jong (2022) shows that while factors related to the dwelling were the strongest predictors of actual mobility, the neighborhood explains a large share of the propensity to move. At the same time, it is known that older adults, in general, stay put and show a relatively low residential mobility (e.g. De Jong, 2022; Gillepsie & Fokkema, 2023). Residential relocations by older adults are often triggered by specific life events, such as a deterioration of the health status or widowhood (Bloem et al., 2008). The classic framework by Litwak & Longino (1987) which states that older adults in the United States make 3 moves: after retirement (often moves along longer distances), after experiencing moderate health problems (moving closer to children) and after having major forms of chronic disability (moves on short distance) is not easily applicable to the Western-European context, and especially to Belgium, in which residential stability has long been stimulated by the housing policy (focusing on home ownership and commuting instead of residential relocations and prioritising a stay in the family home until old age), and is still highly embedded in the current residential practices and patterns (Meeus & De Decker, 2015).

The neighborhood is getting even more important at older age. It is well-known that older adults tend to spend more time at home and in the neighborhood (e.g. due to mobility constraints) and are often more attached to the immediate surroundings (e.g. Varjakoski et al., 2015). Therefore, it is not surprising that Golant (2015) stresses the importance of the neighborhood to reach residential normalcy. Not being able to walk to familiar places anymore due to an unsupportive environment or the lack of certain facilities in the immediate surroundings impact the possibilities to age-in-place. Research shows that the quality of neighborhood services and amenities influences the well-being of older adults (Cramm et al., 2013). Nearby facilities and amenities are not only more important for older people who are more bound to the neighborhood, a walkable neighborhood also has important health benefits (e.g. Herbolsheimer et al., 2020). It is known that the built environment and presence of amenities and services influences walking behaviors among older adults (e.g. Yun, 2019; Levasseur et al., 2015), but also the sense of community (Zhang et al., 2017), which can all contribute to ageing (well) in place.

Shopping and health services are among the most frequently mentioned aspects that must be available in the neighborhood and are important reasons to move (König et al., 2019). It is therefore surprising that there is still limited insight whether older adults live at locations that are close (enough) to basic amenities and services. This is also true for Belgium. While studies have been done into the housing conditions (e.g. through a regular Flemish survey), the neighborhood is often left under researched. It can work also the other way around: do well-equipped neighborhoods offer suitable housing for older people? Research from the Netherlands Environmental Assessment Agency (PBL) in 2019 shows that suitable living environments (with basic amenities and services within 500 meter) often have a large share of homes that are not-suitable at older age, and thus points to a discrepancy between the neighborhood and the dwelling for older people. Furthermore, the same agency (PBL, 2023) also points to the need to get more insight into the spatial distribution of amenities related to health issues and whether these amenities and services fullfill the needs of the (local) inhabitants. All these aspects are equally relevant to Belgium, and therefore we aim at contributing to solve some of those knowledge gaps by looking into the proximity to amenities or services in the case of older adults in Flanders. The framework below (figure 1) shows several aspects (non-exhaustive) that might influence the suitability of the residential location to age-in-place. While we are aware of multiple factors that are at stake, in this paper we mainly focus on neighborhood amenities and the relation between residential relocations and the neighborhood (amenities). In a previous REAL CORP contribution (Gruijthuijsen et al., 2022) we focused on the distance between older adults and their children (in combination with some personal characteristics). In addition to a quantitative analysis, and as part of our research project, we did 68 interviews across Flanders to get more insight into the lived experience of ageing-in-place and the different trade-offs between the different push and pull factors that influence the decision whether to stay or move. These will be explored and connected to the data in future work and are beyond the scope of this contribution.

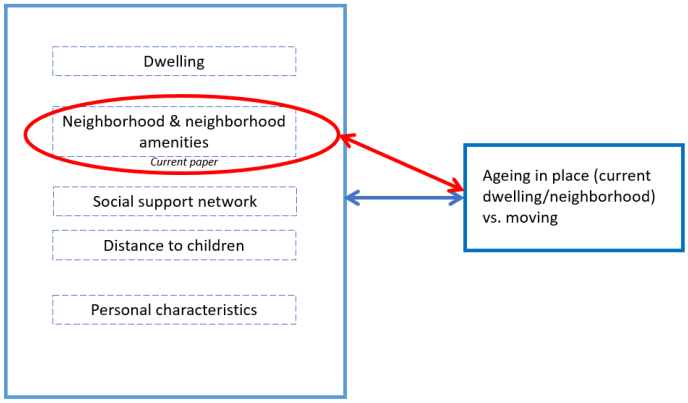

Figure 1: Suitability of the residential location of older people. Created by authors

4 METHODOLOGY

There are existing classifications in Belgium that focus on the level of amenities and services on the municipal level (De Maesschalck & Van Hecke, 2018), or combinations of amenities and services on a 1-hectare level (Verachtert et al., 2016 – VITO), but they are not specifically focused on older adults, and give no indications of the current locations where older adults live. Therefore, we had i) to indicate the location for each older adult for 2002 and 2017, based on the national population register and ii) to calculate the distance between the dwelling of each older adult and a selection of relevant amenities and services in both 2002 and 2017. This gives us not only insight in the actual living conditions of older adults in terms of proximity to important amenities and services, but allows us also to see whether older adults improved their situation in case they moved between 2002 and 2017. It has to be taken into account that we have data on services and amenities in 2016/2017 only. Therefore, an improvement or deterioration is not related to a change within the supply of amenities and services, but always a result of a residential relocation. Of course, amenities and services are not static, but these data is not available before this period. Therefore, we keep this level constant and use the data for 2017 also for 2002. As a consequence, and as example, it is likely that for some locations we underestimate the level of amenities in 2002, since some might have been closed down and not replaced by others (e.g. certain rural parts of the country).

To overcome computational limitations, and because of data constraints we focus on older adults who lived in Flanders in 2002 (see figure 2). Belgium (11,6 million inhabitants) is a federal state comprising three regions (Flanders, Walloon and Brussels Capital Region) and three communities based on language. For Flanders (the Northern Dutch-speaking region of Belgium) the region and community coincide. The regions and communities have far reaching autonomy when it comes to territorial and personal matters. That means the focus on Flanders (6,8 million inhabitants) is also justified by governmental responsibilities since care and spatial planning are largely regional competences. Furthermore, residential relocations between regions are very much limited (+- 22.000 people in 2022) (Statistics Belgium, 2023).

Figure 2: Flanders as study area. Source: Based on administrative borders (FOD Economy) and OpenStreetMap

4.1 Population data

Population data have been obtained from the Directorate-General for Statistics (Statistics Belgium), which is part of the Federal Public Service (FPS) Economy. For this specific paper we look into population characteristics in both 2002 and 2017. Our starting point is older adults (65+ in 2002) living in Flanders in 2002 who are still alive in 2017. Furthermore, for this contribution we only focus on older adults with children since, in a later stage, we will elaborate also on the level of amenities and services in function of the proximity to the adult children and the complex trade off between the neighborhood, housing and proximity to children. Therefore, our data cannot be considered a 'sample' since we consider the full 65+ population with children in 2002, although we left out the 65+ without adult children in 2002. We analysed slightly more than 300 thousand older adults, with approximately 615 thousand adult children. Our anonymized population records are incorporated in different datasets that can be linked via an identification number. The following datasets are relevant for this contribution:

- General population data: personal characteristics retrieved from the population register, the civil status, gender, age, country of birth, place of birth, nationality, first nationality and year of arrival in Belgium.
- Household and descendancy variables: anonymized identification number of the parents, household identification number, reference person of the household, household type, household position, household size, and relation between household members.
- Localization: coded address, duration of stay at the address, statistical sector (smallest administrative level), municipality.

Relevant for this contribution, the household variables give information about whether someone lives in a collective household, which we consider as living in a residential care setting because the Belgian Federal Planning Bureau and Statistic Belgium (2021) consider collective households as a very strong proxy for living in a residential care facility for those older than 65. For more information about how we calculated the distance between parents and children, we would like to refer to our previous REAL CORP contribution (see Gruijthuijsen et al., 2022). It has to be mentioned that most of these data are not freely available for the general public; the datasets have been created and made available by FPS Economy for the strict purpose of our research because they consider this research highly relevant as a basis for future policy making.

4.2 Other data sources

To assess the level of local services and amenities, we made use of the data by Verachtert et al. (2016), as part of a study commissioned by the Flemish Department of Environment and Spatial Planning as to delimit zones with a differentiated development potential based on transport nodes and proximity to facilities. In particular, we used several GIS point layers (or subsets of these layers) containing the locations of the following amenities: general medical practices, pharmacies, bakeries, butchers, small groceries stores (<400m2), larger groceries stores (>400m2), green grocers, post offices and bank and insurance offices. These data (except general practitioners – retrieved from the National Institute for Health and Disability – see further: Verachtert et al., 2016) are filtered from the VKBO (businesses data base) which are publicly available. In addition to the foregoing, we made use of the spatial dataset managed by the Flemish Agency for Care and Health (Flemish Government, 2023) to obtain the locations of local neighborhood centers, day care centers, residential care homes and assisted living unities. To calculate distances towards amenities and services we used the road network of Flanders and Brussels (Flemish Government, 2023b). Regarding the differentiation along spatial types and grades of urbanisation, we made use of the classification by Vanderstraeten & Van Hecke (2019). They distinguish city centers, agglomerations (densely built-up areas surrounding the city centers consisting of mixed functions), banlieues (sprawl area that is oriented towards the urban and agglomerations zones, mainly residential), a low(er) density commuting zone, and rural or non-urban areas.

4.3 Connecting the data and calculate distances towards facilities

For each amenity and service, we have created services areas along the road network of 0- 250 meter, 250 – 500 meter, and 500 – 1000 meter with ArcGIS. These are chosen in the framework of the goal of this paper, to see whether the place of residence allows to live independently in case someone cannot travel by car (anymore) and is dependent on the immediate surroundings. The categories were defined based on an extensive literature study on acceptable walking distances at older age and walking speed at older age (e.g. Yang & Diez-Roux, 2012; Saelens & handy, 2007, McCormack et al., 2008). We are aware that the physical geography (e.g. elevation) and quality of public space such as sidewalks and benches to rest can play an important part in the actual possible walking distance and speed, but we could not take these factors into account. The resulting ArcGIS shapefiles containing, for each amenity or service, the service areas, were converted into a raster dataset (for computational reasons) with cell size of 10m x 10m, with each cell indicating the distance category towards an amenity or service (0 – 250 m, 250 – 500 m, etc.). These cell values were extracted at the location (spatial join) of each older adult (coded address) to indicate for each individual the distance to a certain amenity or service. For further and other (statistical) calculations we made use of SPSS.

5 RESULTS

As mentioned we focus on those older adults with children that were alive in both 2002 (65+) and 2017 (80+) (hereafter just referred to as ‘older adults’). Older adults that passed away between 2002 and 2017 are not included, but can be subject of further research/analysis. Furthermore, changes between 2002 and 2017 are always a consequence of a residential move, since all our data regarding amenities are from 2017 and these data did not exist in 2002. First of all we will look into a rather static view of the suitability of the neighborhood in case an older adult relies on local resources that can be found at walking distance. Afterwards, we will adopt a more dynamic perspective by looking into residential mobility and the effect on the proximity to amenities and children.

5.1 Suitability of the current residential location

Figure 3 and Figure 4 show the proximity of older adults (65+ in 2002 – 80+ in 2017) towards the different selected neighborhood amenities and services. In 2017 we found that around 57% of all older adults live within 500 meters from a small grocery store. However, around one fifth of all older adults in 2017 have to travel more than 1 kilometer towards a small grocery store. A similar pattern can be detected when it comes to a bakery. When we look into first line medical facilities, we find that around 50% of all older adults live within 500 meters from a general practitioner, and around 40% live within 500 meters from a pharmacist. Interestingly, 4 out of 5 older adults live further than 1 kilometer from a local neighborhood center. Within the Flemish care policies, one of the main tasks for these centers is to support older adults to remain living at home independently and integrating formal and informal care. For some older adults proximity towards these centers can be very important, especially for those who cannot rely on informal (family) care givers. By comparing 2017 and 2002 we find that the distance towards the selected amenities and services decreased or, in other words, that the proximity increased: more older adults live within 500 meters of the selected amenities and services. That gives us a first indication that residential relocations are directed towards better equipped neighborhoods.

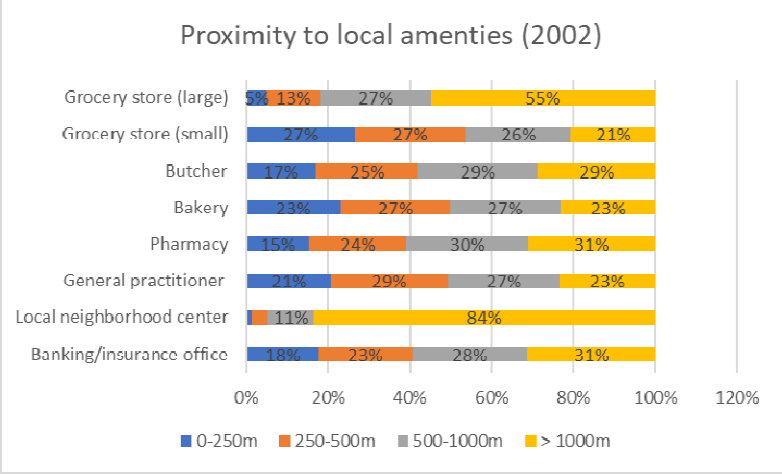

Figure 3: Proximity to local amenities and resources in 2002 (based on data in 2017). Source: data obtained from Statbel, VITO (based on VKBO), Agentschap Zorg en Gezondheid (2017)

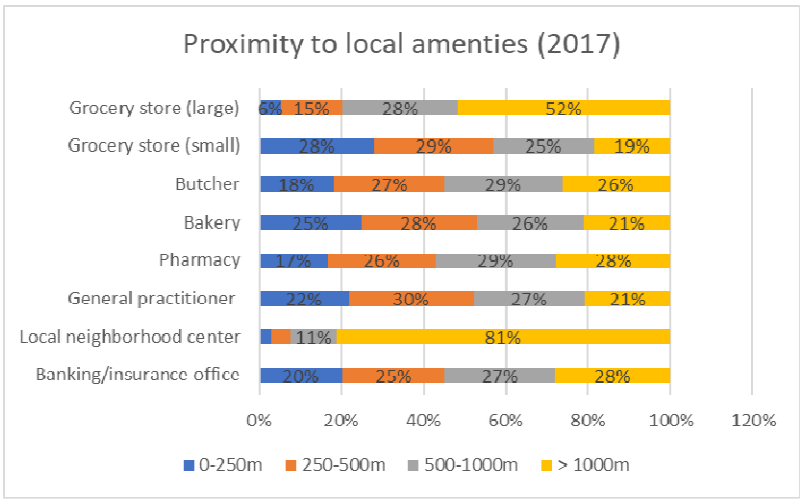

Figure 4: Proximity to local amenities and resources, 2017. Source: data obtained from Statbel, VITO (based on VKBO), Agentschap Zorg en Gezondheid (2017)

Further, the figures 3 and 4 do not take into account proximity towards a combination of those amenities and services. The assumption that it may be likely that someone who lives close to a supermarket or bakery also lives in close proximity to a general practitioner, is questionable. Living in close proximity towards food facilities but further away from medical amenities and services does not make the environment necessarily supporting at older age. Therefore, we grouped several amenities and services together and distinguished the following groups:

- Essential medical services (general practitioner, pharmacy, local neighborhood centers)
- Essential food amenities (small and large grocery stores, bakeries and butchers)
- Supporting services and amenities (Residential care facilities, Public Center for Social Welfare (OCMW), day care centers, health insurance offices and post offices)

Based on these groups, we have made different combinations to be able to decide whether older adults live at a location that is suitable to age in place if they would be dependent on the immediate neighborhood for amenities and services (see table 1).

Type of location	Description
Not suitable	No essential food or medical amenity within 1000 meters
Absolute minimum location	At least 1 essential food and 1 essential medical amenity/service within 1000 meter s
Moderately comfortable location	At least 1 essential food and 1 essential medical amenity/service within 500 meters
Suitable location	At least 2 essential food and 2 essential medical amenities/services within 500 meters
Amenity-rich location	At least 1 essential food and 1 essential medical amenity/service within 250 meters, and at least 1 essential food and 1 essential medical service within 250-500 meters.

Table 1: Type of location for older adults.

Type of location	2002	2017
Not suitable	22,1% (67243)	19,6% (59702)
Absolute minimum	28,0% (85476)	26,2% (79931)
Moderately comfortable	20,3% (61742)	20,9% (63703)
Suitable location	12,6% (38321)	14,1% (43013)
Amenity-rich	17,1% (52111)	19,2% (58544)
Total	100% (304893)	100% (304893)

Table 2: Percentage of older adults that lives in a certain type of location

Around 80% of all older adults in 2017 live at a location that has at least 1 essential food and 1 essential medical amenity or serivce within 1000 meters. That also means that almost 20% of all older adults live at a location that is not suitable to age-in-place in case someone depends on the immediate neighborhood on a daily basis (see table 2.), not taking into account many other factors such as social support networks and being able to drive a car. Around one third of the older adults lives at a location that is considered as suitable or amenity-rich. In reverse, this means that about two thirds live in less than suitable neighborhood conditions. Table 2 also shows that the share of older adults that live at a non-suitable location decreased between 2002 and 2017, which gives us another indication that residential mobility is at least partly aligned with moving to a better location.

Type of location	Average distance -2002 (median) (n)	Closest child – 2002 (median) (n)	Average distance – 2017 (median) (n)	Closest child – 2017 (median) (n)
Not suitable	11,6 km (4,9 km) (65963)	6,0 km (1,0 km) (65963)	12,8 km (5,5km) (57280)	6,6 km (1,3 km) (57280)
Absolute minimum	11,0 km (4,7km) (84682)	5,5 km (1,0 km) (84682)	12,2 km (5,5 km) (78096)	6,1 km (1,3 km) (78096)
Moderately comfortable	11,3 km (4,7 km) (61135)	5,7 km (1,0 km) (61135)	12,7 km (5,7 km)(62052)	6,4 km (1,4 km)(62052)
Suitable location	12,0 km (4,9 km) (37868)	6,3 km (1,1 km) (37868)	13,4 km (6,0km) (41712)	6,8 km (1,6 km) (41712)
Amenity-rich	13,7 km (5,2 km) (51381)	7,7 km (1,2 km) (51381)	15,1 km (6,3 km) (56785)	8,2 km (1,6 km) (56785)
Total	11,7 km (4,9 km) (301029)	6,0 km (1,0 km) (301029)	13,1 km (5,7 km) (295925)	6,7 km (1,4 km) (295925)

Table 3: Type of location and distance towards children.

Table 3 shows that the average distance to adult children as well as the distance to the closest child do not show a large variety depending on the type of location. In general, older adults in Flanders tend to live close to their adult children, although a small increase can be seen between 2002 and 2017. At one end of the scale, one can see that older adults living at a location that is not suitable tend to live further away from their children compared to those older adults living at an ‘absolute minimum’ or ‘moderatley comfortable’ location; and this does not change between 2002 and 2017. This might mean that older adults living at a less-equipped location in terms of amenities and services do not compensate this with a higher proximity to adult children. At the other end, older adults who live in an amenity-rich environment live considerably further from their children (average and closest) than older adults in the other locational types. A neighborhood with a high level of amenities and services might indeed offset for children living further away but the link is not clear and hypotheses are far-fetched. Some people with clear views on the importance of the proximity of amenities and services in general, might have made deliberate choices about where to live without taking the location of children into account or even assuming very early in their life cycle that children will settle far away from the family home.

When we look into more detail and differentiate the type of locations by the urban typology (and vice versa), we see that the majority of people who live at an amenity-rich location live in city centers (tables 4 & 5). The

results for the 'banlieues' or suburbs are quite interesting. Of all older adults living in an amenity-rich location, only 6,5% lives in a banlieue. Furthermore, it is striking that 60 percent of those living in a banlieue live at a location that is considered 'not suitable' or the 'absolute minimum'. This is even higher compared to those who live in non-urban (rural) areas which points to the problem of allotments that came into existence at the urban fringes in the seventies, eighties and nineties oriented towards car use, since they were very close to being amenity deserts while being characterised by an aging population at present.

Nevertheless it is a positive sign to see that the share of older adults living in amenity-rich location increased between 2002 (17,1%) and 2017 (19,2%) (not shown in table). For example, we noticed an increase for those who live in non-urban areas (11,4% in 2002 vs. 14,3% in 2017) and banlieues (8,4% in 2002 vs. 11,1% in 2017). This indicates that older adults in rural areas moved to better equipped locations, such as rural town centers which have more amenities and services. For all urban types, we have found that the share of people that lived at a non-suitable or absolute minimum location decreased between 2002 and 2017. While we might think of non-urban areas when it comes to less-equipped locations, we should stress that even in city centers, around 20% of the older adults live at locations that are not suitable or fulfill the minimum criteria only. Many nineteen and early twenty century belts are not well-equipped since in the twentieth century, small businesses had disappeared. This has consequences, also since we found that older adults in city centers, in general, live further away from their children.

2017	Not suitable	Absolute minimum	Moderately comfortable	Suitable neighborhood	Amenity-rich	Total
City center	5,7% (4091)	16,7% (11961)	21,3% (15238)	21,3% (15245)	35,1% (25114)	100% (71649)
Agglomeration	14,6% (7175)	31,1% (15271)	25,3% (12418)	14,7% (7243)	14,3% (7042)	100% (49149)
Banlieue	31,6% (10909)	27,9% (96120	19,1% (6575)	10,3% (3556)	11,1 (3822)	100% (34474)
Commuting zone	21,6% (13623)	30,1% (18997)	20,4% (12876)	11,8% (7486)	16,1% (10199)	100% (63181)
Non-urban	27,7% (23904)	27,9% (24090)	19,2% (16596)	11,0% (9483)	14,3% (12367)	100% (86440)
Total	19,6% (59702)	26,2% (79931)	20,9% (63703)	14,1% (43013)	19,2% (58544)	100% (304893)

Table 4: Urban typology by type of loation, 2017.

2017	City center	Agglomeration	Banlieue	Commuting zone	Non-urban	Total
Not suitable	6,9% (4091)	12,0% (7175)	18,3% (10909)	22,8% (13623)	40,0% (23904)	100% (59702)
Absolute minimum	15,0% (11961)	19,1% (15271)	12,0% (9612)	23,8% (18997)	30,1% (24090)	100% (79931)
Moderately comfortable	23,9% (15238)	19,5% (12418)	10,3% (6575)	20,2% (12876)	26,1% (16596)	100% (63703)
Suitable neighborhood	35,4% (15245)	16,8% (7243)	8,3% (3556)	17,4% (7486)	22,0% (9483)	100% (43013)
Amenity-rich	42,9% (25114)	12,0% (7042)	6,5% (3822)	17,4% (10199)	21,1% (12367)	100% (58544)
Total	23,5% (71649)	16,1% (49149)	11,3% (34474)	20,7% (63181)	28,4% (86440)	100% (304893)

Table 5: Type of locationby urban typology, 2017

5.2 Residential mobility and the neighborhood

Around 70% of all older adults in 2017 live at the same address as in 2002. The majority of those who moved between 2002 and 2017 did that once (85%). Around 14% moved twice, and 1,5% moved three times between 2002 and 2017. Furthermore, the majority (60%) moved quite recently (between 2011 and 2017). The relatively low level of residential mobility is also reflected in the average duration of residence at the current address in 2017, which amounts to 32 years (median 36). However, if we exclude those who moved, the average duration of residence even increases towards 44 years (median 46). The average age at the year of the relocation was 80 years (median: 80). This is in line with the international literature, pointing to a low residential mobility at older age, but with a rebound around the age of 80 (Angelini & Laferrère, 2012). Considering the average age of a residential relocation, its not surprising that more than one third (36,4% - n=33641) of all older adults who moved between 2002 and 2017, moved into a a residential care setting. If we exclude those older adults that moved to a residential care setting, the average age of a residential relocation decreases towards 78 (median 78). Not only do the numbers point to a relatively low residential mobility, also the distance over which relocations take place is rather low. By including all residential relocations, the average distance over which a move took place is around 9 kilometers. However, the median is less than 2.5 kilometer. Two third of all movements even took place within the same municipality (average

distance: 1,7 km – median 1,2 km). Unfortunately we do not have the data to link these moving processes to the type of dwelling but at least it coincides with the massive building of apartments outside the cities, popping up in small city centers and even in village cores or along connecting roads in suburban areas (Vanneste et al., 2007).

The previous section already gave us a complex image of some who moved to a better location, while others did not. As explained in the methodology, the level of amenities and services for each locality is assumed to be the same in both 2002 and 2017. Therefore, an improved or deteriorated situation is always a consequence of a residential relocation. Figure 5 shows the share of older adults who live within 250 meters from a specific amenity or service. Thereby, we made a distinction between older adults who did not change their residential location between 2002 and 2017 (orange) and those who did. For those who moved, Figure 5 shows the situation before the relocation (blue) and after the relocation (grey). It becomes clear that those who moved, have the highest chance to live closer to amenities and services. More surprisingly, those who moved between 2002 and 2017, already lived closer to the selected facilities in 2002, compared to those who did not changed their residential location. To give an example, 36% of those who moved between 2002 and 2017 lived within 250 meters from a small grocery store in 2017, compared to 31% in 2002 among the same group. However, less than a quarter of those who did not move between 2002 and 2017, lived within 250 meters from a small grocery store.

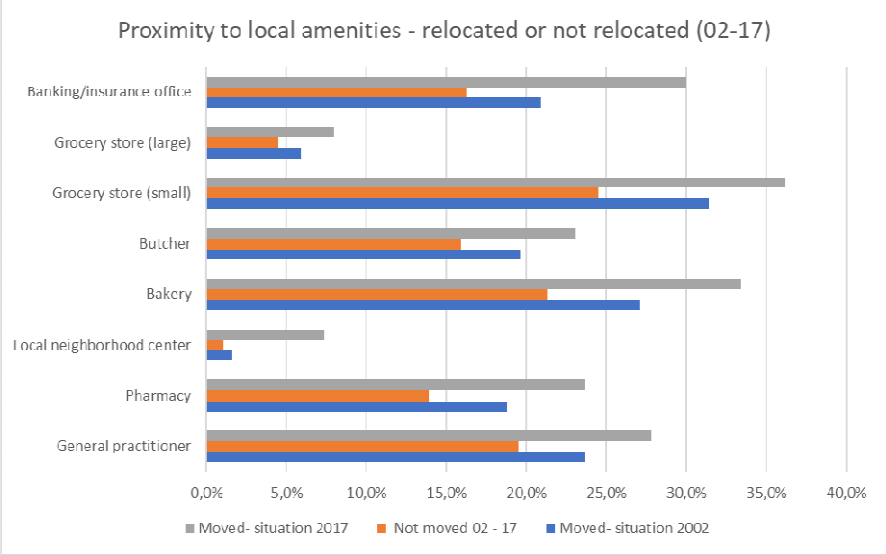

Figure 5: Share of older adults living within 250 meters from local amenities and resources, 2002 -2017. Source: data obtained from Statbel, VITO (based on VKBO), Agentschap Zorg en Gezondheid (2017)

From a policy perspective, this might not be good news since those people who might have a higher need to move to improve their environment in terms of facilities and services, do that the least. This might imply also that those who were better off already have a higher tendency to move, which has probably to do with the available financial resources to realize a relocation and/or because they are better informed about the possibilities and/or because they are more aware of the situation and challenges at older age and/or are more willing to take pro-active steps. While we do not have information about the income level, we can look into the educational level as proxy. When excluding those who moved to a residential care setting, we do see a small differences in the moving tendency, where higher educated older adults (24%), changed their residential location more, than those with a lower level of education (21%). However, also the distance to children (and the availability of the children to provide care and help), as well as the expectations from children regarding care can be factors of influence here. Someone who might not have children living close-by or cannot rely on informal care from a child might be more willing to move to a better equipped neighborhood, even when the neighborhood is already relatively well equipped, while someone who can rely on children living close by does not have (feel) the need to move to a better equipped neighborhood. Also daily habits and lifestyle routines can be a factor. Someone who is used to living close to facilities and services might be more willing to move closer to these facilities to sustain the existing lifestyle and routines when health issues arise or as a precautionary measure, while someone who is living relatively remote and is less used to living close to facilities and services might be less inclined to move as a precautionary measure

or when health issues arise, especially when the children live close(r) by and can provide help. Further research should therefore specifically take into account the distance to children for residential relocations.

To further check whether people moved to a better equipped neighborhood, we will differentiate by the type of location based on amenities and services, as discussed in the previous section. Table 6 shows that people who lived in a better location in 2002 had a higher chance to make a residential move, which is line with the findings from figure 5. More than one third of those living in an amenity-rich location in 2002 changed their residential location, compared to around a quarter of those living at a non-suitable location in 2002. However, this does say something about the place of origin but not on the destination; in other words, these data do not say anything about the type of location after a residential move. Of course it is possible that someone moved from an amenity-rich location (e.g. city center) towards a non-suitable location (e.g. rural area attractive for retirement), while it is also not sure whether those living in a non-suitable or minimum location moved to another (better) type of location.

Type of location (in 2002)	% moved (2002-2017)	% did not move (2002 – 2017)	Total
Not suitable	26,6% (17654)	73,4% (48833)	100%
Absolute minimum	27,7% (23672)	72,3% (61644)	100%
Moderately comfortable	30,2% (18627)	69,8% (43003)	100%
Suitable location	33,6% (12862)	66,4% (25392)	100%
Amenity-rich	38,2% (19865)	61,8% (32160)	100%
Total	30,5% (92680)	69,5% (211032)	100%

Table 6: Percentage of older adults that changed their residential location at least once between 2002 and 2017 differentiated by the type of location in 2002

However, table 7 shows the type of location in 2002 (before a residential relocation) and the type of location in 2017 (after a residential relocation) for all older adults that moved. It becomes clear that around 80% of those who lived in non-suitable conditions (and made a move), relocated towards a better equipped neigbhorhood. The same is true for 45% of those who moved and lived at a moderately comfortable location in 2002, and for 30% of those who moved and lived at a suitable location in 2002. However, this also means that a considerable share of older adults moved towards a location that is less equipped compared to the previous location. More than 60% of those who moved and lived at the best equipped locations in 2002 moved to a location that has less facilities and services (e.g. people who moved from a town or city center to a more rural area) in 2017. This percentage equals 47% for those who moved and lived at a suitable location in 2002, and 28% for those who moved and lived at a moderately comfortable location in 2002.

2002		2017					
		Not suitable	Absolute minimum	Moderately comfortable	Suitable	Amenity-rich	Total
	Not suitable	21,7% (3837)	19,1% (3372)	19,6% (3460)	16,4% (2887)	23,2% (4098)	100% (17654)
	Absolute minimum	9,3% (2199)	24,9% (5895)	22,5% (5335)	18,5% (4387)	24,7% (5856)	100% (23672)
	Moderately comfortable	7,9% (1476)	19,7% (36750	27,2% (5059)	19,2% (3584)	25,9% (4833)	100% (18627)
	Suitable location	7,0% (906)	17,8% (2287)	22,2% (2851)	22,9% (2945)	30,1% (3873)	100% (12862)
	Amenity-rich location	7,1% (1405)	15,1% (3005)	20,0% (3967)	19,1% (3795)	38,7% (7693)	100% (19865)
	Total	10,6% (9823)	19,7% (18234)	22,3% (20672)	19,0% (17598)	28,4% (26353)	100% (92680)

Table 7: Type of location before and after relocation for those older adults who moved, 2002 -2017

When we exclude those older adults who moved into a collective household (residential care setting) between 2002 and 2017, the numbers slightly change (Table 8). For example, from those who lived in 2002 at an amenity-rich location and moved (excl. to a collective household), around 47% remained living at an amenity-rich location. This is higher compared to the previous table which includes relocations into a collective household (39%). This also holds true for those who lived in 2002 at an absolute minimum, moderately comfortable or suitable location. More specifically, this means that the chance to move to an amenity-rich location is larger when someone does not move into a residential care setting. This might mean that a substantial share of older adults who remain living independently (or with children) and move, look for neighborhoods that are a better equipped.

Although it looks promising that around 72% of those who moved between 2002 and 2017, lived at least at a location that can be seen as moderately comfortable to age-in-place, this percentage drops to 54% if we also include those who did not move (see table 2). That means that those who move might indeed improve their situation, but that we should not turn a blind eye towards those who do not change their residential location,

since they live, in general, at less-equipped locations. Table 9 aggregates the previous 2 tables and shows that almost half of the older adults who changed their residential location between 2002 and 2017 and did not move into an residential care setting, relocated towards a better location. However, around a quarter moved to a location that is less equipped in terms of amenities and services that are relevant to age-in-place.

		2017					
		Not suitable	Absolute minimum	Moderately comfortable	Suitable	Amenity-rich	Total
2002	Not suitable	23,5% (2805)	16,2% (1938)	17,2% (2052)	15,6% (1863)	27,5% (3276)	100% (11934)
	Absolute minimum	8,9% (1358)	22,7% (3444)	20,5% (3112)	17,9% (2724)	30,0% (4551)	100% (15189)
	Moderately comfortable	7,4% (849)	17,0% (1962)	26,7% (3075)	18,1% (2091)	30,8% (3555)	100% (11532)
	Suitable location	6,0% (465)	14,5% (1130)	19,7% (1542)	24,0% (1876)	35,8% (2799)	100% (78120
	Amenity-rich location	6,0% (750)	12,0% (1507)	16,5% (2072)	18,4% (2305)	47,1% (5908)	100% (12542)
	Total	10,6% (6227)	16,9% (9981)	20,0% (11853)	18,4% (10859)	34,0% (20089)	100% (59009)

Table 8: Type of location before and after relocation for those older adults who moved, excluding those who moved into a collective household, 2002-2017

	Moved – excl. collective households	Moved in a collective household
Moved to a better location in terms of facilities and services	47,4% (27961)	40,8% (13712)
Moved to a similar location in terms of facilities and services	29,0% (17108)	24,7% (8315)
Moved to a less good location in terms of facilities and services	23,6% (13940)	34,5% (11614)
Total	100% (59009)	100% (33641)

Table 9: Change in location after a residential relocation between 2002 and 2017.

Until now we have investigated how a residential relocation affected the type of location (in terms of proximity to facilities and services). However, it would be interesting to have a deeper look into the spatial type. Table 10 indicates that 36,5% of those who lived in a city center in 2002 moved; a percentage that is higher compared to those who lived in any of the other spatial categories. That is interesting, especially considering that city centers already have the highest share of people living in close proximity to facilities and services, although it somehow confirms the pattern described earlier that those who move already seem to live in a neighborhood that is better equipped. Those who live in non-urban areas have the lowest chance of a residential relocation. Certainly many push and pull factors can be at stake. Proximity to amenities and services is only one of them, in addition to for example the distance to children, embeddedness in the neighhorhood, social networks and many more. Since we see a higher likelihood for relocations among those who live in urban areas, is its possible that the real estate market plays a role. While, overall, the level of homeownership is around 72 percent in Flanders, in urban areas this is much lower. In larger cities like Antwerp and Ghent the share of homeowners is 45%, in medium-sized cities around 60 -70% and in rural areas 80 percent or higher (Flanders, 2018). Since the rental market in general is less protective, compared to owning ones own dwelling, it might influence the likelihood to move. On the other hand it might also be easier to realize a relocation if living in a rental home.

Urban typology (2002)	% moved between 2002 and 2017	% no move between 2002 and 2017	total
City center	36,5% (26199)	63,5% (45497)	100% (71696)
Agglomeration	31,8% (15990)	68,2% (34283)	100% (50273)
Banlieue	28,5% (9721)	71,5% (24347)	100% (34068)
Commuting zone	28,0% (17447)	72,0% (44804)	100% (62251)
Non-urban (rural)	27,3% (23323)	72,7% (62101)	100% (85424)
Total	30,5% (92680)	69,5% (211032)	100% (303712)

Table 10: Urban typology (2002) and residential mobility

Table 11 shows that most people who moved to a better-equipped location between 2002 and 2017 did that within the same spatial type based on the degree of urbanization (physically and functionally). This is especially true for those who lived in a city center or rural area, 4 out of 5 persons moved to a better location within the same spatial type or category. The lowest percentages are found for those who lived in a banlieue (57%) or in the urban agglomeration (63%). This is not a surprise, banlieues are among the areas with the highest percentage of people living in badly equipped locations. Around 56 percent of those who changed their residential location and lived in a banlieue in 2002 moved to a better equipped location, which is the highest among all spatial types (not shown in table). Around one fifth of those who moved and lived in an agglomeration or banlieue relocated towards a city center. When we specifically look into those who moved

to a less-equipped location, we see a slightly more diverse patterns, and a lower tendency to move into city centers, with more people moving towards a commuting zone or rural area, for example to areas that might be attractive for retirement in terms of enjoying nature and quiet open space. In that case, we expect a trade-off with the rural atmosphere.

		2017					
		City center	Agglomeration	Banlieue	Commuting zone	Non-urban (rural)	Total
2002	City center	80,4% (4638)	6,9% (397)	4,4% (251)	4,4% (252)	4,0% (230)	100% (5768)
	Agglomeration	22,0% (1196)	63,1% (3436)	4,8% (259)	6,6% (362)	3,5% (192)	100% (5445)
	Banlieue	19,3% (678)	8,3% (291)	56,8% (1996)	9,5% (334)	6,1% (216)	100% (3515)
	Commuting zone	9,0% (501)	3,9% (216)	3,3% (185)	76,1% (4217)	7,7% (426)	100% (5545)
	Non-urban (rural)	8,2% (834)	2,0% (153)	1,8% (135)	4,9% (379)	83,1% (6387)	100% (7688)
	Total	27,3% (7647)	16,1% (4493)	10,1% (2826)	19,8% (5544)	26,6% (7451)	100% (27961)

Table 11 Spatial typology before (2002) and after (2017) a relocation for those older adults who moved to a better-equipped neighborhood between 2002 and 2017, excluding collective households

6 DISCUSSION AND CONCLUSION

The main goal of this paper was to get more insight in the suitability of the residential locations of older adults in terms of proximity to amenities and services in the framework of ageing-in-place and keeping a certain level of independence. Additionally, we wanted to investigate whether residential relocations at older age were directed towards better equipped neighborhoods. First of all, we would like to stress that our findings for Flanders show that only around 30% of all older adults in 2002 (65+) and 35% of all older adults (80+) in 2017 lived in neighborhoods that can be classified as amenity-rich or suitable locations to age in place, if dependent on the immediate surrouding. Around one fifth of all older adult live more than 1 kilometer away from any relevant amenity or services, while not necessarily living closer to their children. Regarding residential relocations the results show that the majority indeed moved to a better equipped neighborhood. However, those who moved, in general, lived already in better equipped neighborhoods, compared to those older adults that did not move between 2002 and 2017. This justifies a call for policy adjustments to pay more attention to the group that is not moving. This can be done through an awareness campaign for pro-active residential relocations and (financial) support for those relocations. This is especially true in the light of the Flemish housing policy that, for decades, stimulated homeownership (eventually with commuting) instead of dynamic relocations and residential mobility in the course of the life cycle (Meeus & De Decker, 2015). Without additional policy and support, it is likely that (health and well-being) differences between and inequalities among older adults who are moving and those who stay put are increasing rather than declining. Of course there are limitations and many aspects require additional research. First of all, while we focused on the “objective” proximity to amenties and services, having them nearby does not necessarily mean that they are the preferred one (e.g. a small convenient store versus a larger supermarket or a non-traditional or expensive store). Furthermore, a short distance does not imply that amenities or services are easily reachable, depending on for example the quality of the environment, such as sidewalks. In addition, even when no amenities and services are nearby, there might be home delivery services that might offset the lack of physical amenities and serives (e.g. Golant, 2019). However, also these services are not accessible everywhere to the same extent (Van Noort, 2018). While, in this contribution, the focus was on the impact of a residential move on the type of location in terms of amenities and services, in our future work we will look into the trade-off between the location and the distance to children in more detail (e.g. ranging from moving to a better location but further away from children till moving to a less equipped location but closer to the children) and the impact of personal characteristcs. It is known that children can influence the residential mobility of parents (Begley & Chan, 2022). Furthermore, linking residential relocations with the type of dwelling would be interesting, but currently there is no data available for this. In addition, extra attention should be paid to older adults without children, for whom the need to live in close proximity to amenities might be even more important. All in all, amenities and services are only one specific type of neighborhood resources; social networks, although very important for ageing-in-place, is another underresearched dimension (Pani-Harreman et al., 2020), which will be further expplored by the interviews we did in several Flemish municipalities.

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