

| Identification | | Criterion | | Taxonomy cluster | | | Source details | Notes |
|----------------|--------|--|--|------------------|--|-------------|--|---|
| Cluster | Number | Proposed title | Description | KPI Cluster | Category | Subcategory | Source | Quality and approach study |
| PER | | 1 Assistive technologies in the dwelling take account of heirloom status | Acceptance of assistive technologies in the home is positively affected by 'heirloom' re-use of items. Integration of technologies in the dwelling should take account of future use by others than the initial occupants | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | White, G., Evans, R., Connelly, K., Caine, K. (2014) | Very small-scale observational study |
| PER | | 2 Personalization of kitchen spaces | To preserve their function as a locus for emotional attachment and personal identity, kitchens must allow personalization of design, equipment and processes to reflect occupants' lived experience The study applies the methodologies of work done in researching spaces of memory in geographical and public spaces contexts to the private space of the kitchen, building upon conceptualizations of the kitchen as a lieu de mémoire "that provides a context for the sensory, haptic and kinetic dimensions of memory which may, or may not, relate to food, but which certainly connects kitchens and their occupants to individuals and moments in time which may otherwise be forgotten." Kitchens, in other words, play an important role in establishing people's sense of self and personal history, and thus to the extent in which people experience their homes as emotionally important and supportive. To reflect this, kitchen spaces and kitchen adaptations in age-friendly homes should offer customization opportunities in terms of lay-out, equipment and design. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Meah, A., Jackson, P. (2016) | Hard to gauge the quality of the study, as it is of a type (ethnography) not otherwise much encountered in this field. |
| PER | | 3 Space for deployment of personal history objects | Home environments for people with MCI or early-stage dementia must offer room for deployment of material objects that reflect personal history and/or serve as symbolic links to valued relationships <i>Note that the study quotes what is apparently a more or less classic holistic definition of the concept of "home" (Sixsmith, 1986) "A place of physical, personal and social experience that sustains a sense of security, safety, privacy, independence and choice." Good one to quote in the "conceptual framework" section of the deliverables report</i> | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Gabriel, M., Stirling, C., Faulkner, D, Lloyd, B. (2014) | Positioning paper summarizing current research for the Australian AHURI programme. This paper looks specifically at housing and support needs of people with dementia. |
| PER | | 4 Adequate maintenance for affective ties to home environment financially viable | To maintain affective ties to the home environment, and help preserve location-specific aspects of personal identity, adequate maintenance must be possible within reasonable limits for housing cost expenditure <i>Study has an interesting take on home maintenance issues: where many studies consider these primarily from a Physical safety and comfort perspective, this paper finds that maintenance problems cause stress and anxiety, thus "rupturing affective ties to place, limiting access to preferred identities and reducing well-being. The paper also finds that an interdependence approach to maintenance, as a communal and self-help experience and at the direction of older people themselves, plays a part in maintaining and strengthening social relationships. The above is also an NoP issue: older people need to feel in control of the maintenance and upkeep of their living environment. Satisfaction of the criterion could look to the quantitative threshold for housing costs found in another article above (maintenance costs should fit within an envelope of 30% of income on housing costs for the lowest 40% earners). Depending on financial arrangements, depreciation costs for the investment could be assessed, or access to and terms of financing to cover the investment, or cost effects in terms of rent and service costs, depending on tenure and method of financing of maintenance work</i> | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Coleman, T., Kearns, R., Wiles, J. (2016) | Well-executed study (case study and interview based, of course). Only drawback is the study population was quite specific (island community in the Auckland, New Zealand metropolitan area). Study subjects lived independently and were between 65 and 94 years of age. |
| PER | | 5 Home environment allows older people to pursue activities independently | To allow frail older people to benefit from the sense of the home as a trusted base, the home environment should enable frail older people to pursue activities independently Study does not really have much specific to say about KPIs for the home environment, but does note the importance of being able to stay in the familiar home environment as frailty sets in as an enabler for wellbeing and sense of autonomy. Maybe use the study as the basis for an NoP in this domain. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Clindworth, K. et al (2017) | Qualitative study, using a series of in-depth semi-structured interviews with 31 subjects. Doubtful whether study gives rise to any KPIs suitable for evaluation directly in the Personal or Social domain. Such requirements as are hinted at will be covered in the Physical and Outdoor access clusters |
| PER | | 6 Home offers dedicated space for pursuing activities for self-fulfilment and social engagement. | Home should offer dedicated space for pursuing activities for self-fulfilment and social engagement. Specifically, the home environment must offer adequate spatial provisions for pets, hobbies, socialising and storage. Where homes have multiple occupants, the home should be able to cater for the preferences of each occupant Research shows that the ability to pursue these activities in the home contributes to positive perception of the home environment and contributes to perceived agency in ageing healthily | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Sixsmith, J. et al (2014) Mackenzie et al (2015) | Sixsmith, J. et al (2014) interesting study, part of the ENABLE-AGE project. Limited source of KPIs, but definitely worth another look as a source of NoPs Mackenzie et al (2015) rather an extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study |

| | | | | | | | | |
|-----|--|--|---|-------------|--|------------|--|---|
| PER | | 7 Opportunities for meaningful social activity | The home and its immediate environment should offer opportunities to engage in meaningful social activity Inferred KPI from the observation in the study (itself citing an earlier study) that it is often better for the well-being of older people give rather than receive social support. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Orrrell, A. et al (2013) | Large-scale and thorough analysis of relation of building and design characteristics to reported QoL in residents of extra care housing schemes in the UK, using the EVOLVE tool as an instrument for structured description of building features. |
| PER | | 8 Home environment must allow keeping pets | Haven't seen this one before. Sounds relevant, especially for rented accommodation and extra care housing, where this may be controversial | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Darab, S., Hartman, Y., Holdsworth, L. (2018) | Note of caution is sounded in the study itself that the regional/rural context of the study population may shape the group's preferences differently than those of their metropolitan counterparts |
| PER | | 9 Daylight access for positive connection with home environment | To support a positive and enabling connection between occupant and home environment, spaces must provide copious daylight access Daylight access (well in excess of construction norms, and also encompassing outdoor views) is here connected with emotional wellbeing. Verification may also take in provision of mood lighting. We could merge the verification process with any verification on daylight factors we want to do to provide a score in the Comfort category of the Physical cluster | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Karol, E. (2016) | the author of this paper used an 'architecture of accommodation' approach in designing an award-winning house that would support independence of the occupants into old age. I've rated the evidence quality as low, because the findings are essentially based on a single case study. |
| PER | | 10 Opportunity for deployment of items and furnishings with special meaning | A home environment contributes to feelings of emotional wellbeing and attachment by offering the opportunity to deploy items and furnishings with a special meaning to the occupant. <i>Some text in the introductory section (outline of literature / existing theoretical approaches) on the absence of a consolidated, agreed upon definition of the meaning of home to an individual. Useful ammo to further justify using a pragmatic approach in shaping the H4L taxonomy</i> <i>Article notes that it is not self-evident that occupants will want to share the significance or acknowledge the presence of these objects/furnishings to visitors of the house. So ideally, the home should offer the opportunity to stow away objects in a private place.</i> <i>Useful term for dropping somewhere: "appropriation" for the process of investing a home with personal meaning</i> | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | van Steenwinkel et al (2017) | |
| PER | | 11 Spaces and features for views and interaction with nature | To contribute to Nature bonding (dimension of place attachment), the home environment must provide spaces and design features allowing views of nature and interaction with nature The design features associated with these types of interaction found in the study were: View of nature * Large windows * Individual home back porch * Common house patio * Individual home great room Interaction with nature * Common garden * Compost area * Labyrinth * Nodes and sidewalk system | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Lies, M., Kang, M., Sample, R. (2017) | Small-scale observational study, but well grounded in place making and place attachment theory. Exploratory in nature, and small scale, but very useful and practically applicable findings. If adopted in any of our certification pilots, verification could be through assigning a score based on the number of features present |
| PER | | 12 Availability of places and features for personalization of home environment | To contribute to Place identity (a dimension of place attachment), the home environment must provide spaces and design features that enable personalization of the home environment, reflecting the occupants' personal history, sense of self, tastes and preferences Lies et al find that design features associated with personalization are: * Individual home display spaces * Individual home front porch * Individual home back porch * Wild and raised flowers * Common house dining room Bergland et al (2015) note the importance of both personal historical continuity (the home as a place and reminder of past experience), and personal + personalized space, as well as stress and anxiety at losing these resources in the case of moving home. By inference, a new home environment that allows customization to suit personal history and preferences will help avoid loss of the sense of self and identity, as well as contributing to emotional wellbeing. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Lies, M., Kang, M., Sample, R. (2017) Bergland, A., Slettebo, A. (2015) | Lies et al is a small-scale observational study, but well grounded in place making and place attachment theory. Exploratory in nature, and small scale, but very useful and practically applicable findings. If adopted in any of our certification pilots, verification could be through assigning a score based on the number of features present. Bergland et al use a salutogenic approach to look into coping strategies employed by the 'oldest old', specifically women aged 90 years and older. Study examines the contribution of a range of health resources, including the home. Hard to judge the quality of the study: it is in any case highly qualitative in nature and quite small-scale, with 10 study subjects |
| PER | | 13 Home environment promotes creation of informal support networks e.g neighbours, and sense of safety and security is reassured | Home environment provides reassurance and sense of safety through existence of common and shared spaces e.g common room for meal taking, communal laundry, shared gardens and patios. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Fernández-Carro, C., Vlachantoni, A. (2019) | |
| PER | | 14 Easy and affordable access to specific "carer" support needs | Home environment provides easy and remote access to supportive services that specifically recognise and support the work of informal carers such as respite care, psychosocial services, peer support, carer allowances | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Plöthner, M. et al (2019) | |

| | | | | | | | | |
|-----|----|---|--|-------------|--|----------------------------------|---|--|
| PER | 15 | home environments for older women living alone must offer private outdoor spaces | To support occupants sense of identity and autonomy, home environments for older women living alone must offer private outdoor spaces Where "private" is a somewhat flexible term. It does not necessarily imply exclusivity, the requirement is also satisfied when e.g. the occupant has control over who uses the outdoor space, the outdoor space is part of a co-housing development etc | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.1_Home | Darab, S., Hartman, Y., Holdsworth, L. (2018) | Note of caution is sounded in the study itself that the regional/rural context of the study population may shape the group's preferences differently than those of their metropolitan counterparts |
| PER | 16 | Opportunities for social activities and networks continuity | The home's immediate environment should offer opportunities for continuation of existing social activities, networks and contexts, or at any rate the opportunity to establish/engage in contacts/activities that represent conceptual continuity within the lived experience of the occupant The study found a marked difference in perceived safety between the ECH location with and architectural and spatial design that allowed residents to continue activity and social engagement patterns from previous life phases, and the location where the architectural/spatial design required residents to reconstruct their social identities | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.2_Apartment_building_complex | Berglund-Snodgrass, L., Nord, C. (2019) | Well executed case study, but quite small-scale, based on a comparative analysis at two ECH complexes. Study abandons traditional distinctions between inner and outer safety in favour of an approach in which these kinds of safety are considered as co-constitutive situational effects. The focus of the study is on Extra Care Housing. This is within H4L scope, as ECH is considered as a special type of ordinary housing (not as a "light" form of residential LTC facility) |
| PER | 17 | Assistive technologies take account of occupant activity patterns and rituals | Acceptance and effectiveness of assistive technologies is positively affected if their deployment and functioning is sensitive to individual daily routines and activity patterns, and if their deployment is linked to daily activities with ritualistic significance. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.2_Apartment_building_complex | White, G., Evans, R., Connelly, K., Caine, K. (2014) | Evaluation could actually be part quantitative and part qualitative. Deployment flexibility as such should be part of device performance specifications and could be evaluated quantitatively. Whether or not deployment actually does take account of these factors could be evaluated qualitatively on base of supplier practice, occupant experience... |
| PER | 18 | Home environment promotes creation of informal support networks e.g neighbours, and sense of safety and security is reassured | Home environment provides reassurance and sense of safety through existence of common and shared spaces e.g common room for meal taking, communal laundry, shared gardens and patios. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.2_Apartment_building_complex | Fernández-Carro, C., Vlachantoni, A. (2019) | |
| PER | 19 | Home has quality private outdoor spaces | To support a positive and enabling connection between occupant an home environment, the home must provide quality private outdoor spaces | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.2_Apartment_building_complex | Karol, E. (2016) | the author of this paper used an 'architecture of accommodation' approach in designing an award-winning house that would support independence of the occupants into old age. I've rated the evidence quality as low, because the findings are essentially based on a single case study. |
| PER | 20 | Home environment allows views of and interaction with nature | To contribute to Nature bonding (dimension of place attachment), the home environment must provide spaces and design features allowing views of nature and interaction with nature Lies et al (2017) found that the design features associated with these types of interaction found in the study are: View of nature * Large windows * Individual home back porch * Common house patio * Individual home great room Interaction with nature * Common garden * Compost area * Labyrinth * Nodes and sidewalk system | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.2_Apartment_building_complex | Lies, M., Kang, M., Sample, R. (2017) Kemperman, A., Timmermans, H. (2014) | Lies et al is a small-scale observational study, but well grounded in place making and place attachment theory. Exploratory in nature, and small scale, but very useful and practically applicable findings. If adopted in any of our certification pilots, verification could be through assigning a score based on the number of features present |
| PER | 21 | Home environment and neighbourhood contain 'third place thresholds' | The immediate environment of the home and the neighbourhood in which it is situated must offer opportunities for engagement with others. These can take the form of so-called 'third place thresholds'. Study notes that this is essential to well-being and self-identity among older adults and quotes earlier study (Peace, Holland, and Kellaheer, 2006) that states: "No longer being able to go out independently is a critical stage in identity construction because, without the wider contexts that lie beyond the dwelling, the home itself becomes diminished as a source of identity construction. Continued capacity to engage with 'the other' is represented by neighborhood in a way that immediate domicile cannot demonstrate or prove." In other words, neighbourhood level characteristics directly co-determine the fitness for purpose of the home environment According to the study, 'thresholds' "are the hybrid, semi-public spaces that straddle the private dwelling and public neighborhood, such as porches, patios, backyards and balconies. These in-between third places provide easy and readily available opportunities for social interaction, most commonly with neighbors." For those living in high-rise dwellings, balconies, lobbies and elevators took on the role of 'thresholds'. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.2_Apartment_building_complex | Gardner, P. (2011) | Study focuses primarily on the neighbourhood as a "place of aging", referring to older studies on the home as a "place of aging". So borderline in terms of the H4L scope. Study nevertheless interesting, because it employs a qualitative, in-depth approach to gain a better understanding of those social and physical elements of the neighbourhood that contribute to well being |
| PER | 22 | Self-organization of social interaction | The dwelling is situated in a neighbourhood that offers older adults opportunities for co-creation and self-organization of social interaction. This contributes to sense of agency and emotional attachment to living environment, as well as stimulating meaningful interaction with others | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Lager, D., van Hoven, B., Huigen, P.P.P. (2013) | Study well-grounded in literature and theory, but in itself small-scale, qualitative and case study based |

| | | | | | | | | |
|-----|----|--|---|-------------|--|--------------------------------|---|---|
| PER | 23 | Home environment within reach of community activities and engagement | For emotional wellbeing and attachment to place, the home environment must be situated within short and accessible reach of community activities, and opportunities for social engagement, and contact with significant others Gardner (2011) notes that this is essential to well-being and self-identity among older adults and quotes earlier study (Peace, Holland, and Kellaheer, 2006) that states: "No longer being able to go out independently is a critical stage in identity construction because, without the wider contexts that lie beyond the dwelling, the home itself becomes diminished as a source of identity construction. Continued capacity to engage with 'the other' is represented by neighborhood in a way that immediate domicile cannot demonstrate or prove." In other words, neighbourhood level characteristics directly co-determine the fitness for purpose of the home environment | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Mackenzie et al (2015) Gardner, P. (2011) | Mackenzie et al is rather an extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study. Gardner focuses primarily on the neighbourhood as a "place of aging", referring to older studies on the home as a "place of aging". Interesting because it employs a qualitative, in-depth approach to gain a better understanding of those social and physical elements of the neighbourhood that contribute to well being |
| PER | 24 | Mobility | Easy access, and proximity to affordable public transportation from home environment supporting access for example to social activities and other facilities | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | WHO (2015) | |
| PER | 25 | Availability of places with spiritual significance | For many older adults, the availability of places with spiritual significance within walking distance (accessible routes) of the home is important to support sense of identity and emotional attachment. Conversely, proximity to commercial, industrial and organised religious facilities is negatively associated with mental health According to Smith et al (2013), for many older adults, the availability of places with spiritual significance within walking distance (accessible routes) of the home is important to support sense of identity and emotional attachment. Conversely, according to Firdaus (2017), proximity to commercial, industrial and organised religious facilities is negatively associated with mental health. Firdaus looks to use this proximity as a proxy for substandard housing. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Smith, J., Cartledge, M. (2011) Firdaus, G. (2017) | Smith et al is a fairly specific case study, with some issues as to applicability in Europe. Nevertheless, an interesting article: it investigates which elements of the cultural landscape promote emotional attachment to place in retirees. It also highlights some tensions between sustainability ambitions and affordability of dwellings. Note on verification: it could use distance categories already proposed for Outdoor access and Social cluster items, with inverse valuation. Alternatively, could be based on expert (map-based or in situ) assessment of dwelling environment and neighbourhood |
| PER | 26 | Home environment within reach of shops and services | For emotional wellbeing and attachment to place, the home environment must be situated within short and accessible reach of shops and services Smith et al (2011) notes "that when a community is unable to provide these basic services and retail outlets, older people commonly feel discontent and their connections to the place can deteriorate because they are forced to travel elsewhere to meet those needs." | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Mackenzie et al (2015) Smith, J., Cartledge, M. (2011) | Mackenzie et al is a rather extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study. Smith et al is a fairly specific case study, with some issues as to applicability in Europe. Nevertheless, an interesting article: it investigates which elements of the cultural landscape promote emotional attachment to place in retirees. It also highlights some tensions between sustainability ambitions and affordability of dwellings. |
| PER | 27 | Emotional attachment and alignment | The occupant of the dwelling experiences emotional attachment and alignment (identification) with the identity and social/cultural composition of the dwelling's neighbourhood | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Lager, D., van Hoven, B., Huigen, P.P.P. (2013) | Evaluation for existing dwellings could be on the basis of questionnaire to current occupants, occupant representative panel or similar. For new dwellings, evaluation could be against stated preferences of prospective occupants/respondents representative of prospective occupants' views |
| PER | 28 | Home within range of neighbourhood 'third places' | To promote emotional connectivity, meaningful activity and social engagement, the home should be located within easy, accessible range of a variety of appropriate 'third place' destinations in the neighbourhood. "Third places", using a definition from Oldenburg (1989) are places "that are located outside of the home (first place) and work (second place) and share several essential features: they are on neutral ground, they act as 'levelers', conversation is the main activity, they are accessible, 'regulars' spend time in them, they are physically plain and unassuming, the mood is playful, and people feel like they are a 'home away from home'." Notable 'third places' identified by the subjects in the study were public parks, certain local businesses (with a strong preference for small single-purpose shops), community organisations and institutions. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Gardner, P. (2011) | Study focuses primarily on the neighbourhood as a "place of aging", referring to older studies on the home as a "place of aging". So borderline in terms of the H4L scope. Study nevertheless interesting, because it employs a qualitative, in-depth approach to gain a better understanding of those social and physical elements of the neighbourhood that contribute to well being |
| PER | 29 | Home is situated in a neighbourhood that scores above average on security and solidarity items. | <i>Wellbeing in this study was measured using the 15-item version of the Social Production Function Instrument for the Level of Well-being (SPF-IL). The scale measures both physical and social wellbeing. Solidarity was measured with 10 items, each scored on a five-point scale. The scale was based on a theory common in work science to measure solidarity in employee teams. Security was assessed using four items, each scored on a four-point scale. Study outcomes show that security and solidarity scores are each associated with higher levels of wellbeing among older people; moreover the results suggest a multiplicative effect from the combination of these attributes, and a reinforcing effect from higher scores on security on the effect that a higher level of solidarity has on wellbeing.</i> <i>In most cases, verification could make use of municipal data.</i> | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Cramm, J., Nieboer, A. (2013) | Study looking into the effect of neighbourhood attributes solidarity and security on well-being of community-dwelling older people in the Netherlands, as well as into the combined effect on wellbeing of these attributes. Looks a fairly sturdy analysis, based on a sample of 869 older adults (defined as 70+) living in 92 neighbourhoods in the city of Rotterdam |
| PER | 30 | Emergency Preparedness | Emergency Preparedness Plans take into account needs of older residents | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Metlife Institute / Stanford Center on Longevity (2013) | |

| | | | | | | | | |
|-----|----|---|--|-------------|--|---------------------------------------|--|---|
| PER | 31 | Access to general/indirect "carer" needs such as home care/home support services (primary target: care recipient) | Home care services are available and affordable in the community supporting independence of care recipient whilst helping caregivers feel more competent in caring for their relatives (e.g. through providing respite, maintaining a supportive relationship with caregivers, teaching them new skills, and providing help to the caregivers to navigate the healthcare system) | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Care Alliance Ireland (2014) | |
| PER | 32 | Access to personalised tailored support services or tools informal carers | Home environment provides access to community services that are able to provide easily accessible and tailored support through a personalised assessment of needs of the informal carers. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Greenwood, N. et al (2019) Lefranc, A. et al (2017) | |
| PER | 33 | Dwelling is situated in proximity to likeminded others | Dwelling is situated in a neighbourhood where like-minded others are also domiciled. This contributes both to social activity and to personal wellbeing, as well as being associated with a sense of agency and emotional attachment to the living environment | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Lager, D., van Hoven, B., Huigen, P.P.P. (2013) | Study well-grounded in literature and theory, but in itself small-scale, qualitative and case study based |
| PER | 34 | Dwelling has meaningful destinations within walking distance | Meaningful destinations (social engagement and meaningful activity) within walking distance. This is important for both primary users and carers, and especially important for people with dementia Like primary users, informal carers need easy access to various services and amenities preferably at walking distance e.g. grocery stores and other shopping facilities, pharmacist and other primary care services, social connections, community services incl work) | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Scharlach, A. (2017) Gabriel, M., Faulkner, D., Stirling, C. (2015) | Gabriel et al is the final report of the Australian AHURI programme |
| PER | 35 | Home environment facilitates recognition and training of informal carer skills | Home environment provides easy access to volunteering opportunities in the community or training opportunities that facilitate recognition of informal carer skills e.g. through web-based access (distance learning) | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Eurocarers (2017) Eurocarers - TRACK project (2016) | |
| PER | 36 | The home should be situated in an area that facilitates establishment of reciprocal social relationships with e.g. neighbours | | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Rowles, G., Bernard, M. (2013) | It's a decent enough scene setting essay, intended as the opener and scene setter for a book featuring explorations of various aspects of environmental gerontology. The reason I'm not sure how to value the quality of evidence is precisely because it is a scene setting rather than an experimental or investigative article. |
| PER | 37 | The neighbourhood around the dwelling satisfies walkability requirements | Proportion of streets in the neighbourhood that have pedestrian paths which meet locally accepted standards | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | WHO (2015) | |
| PER | 38 | Public spaces and buildings in the home's neighbourhood satisfy accessibility criteria | Proportion of new and existing public spaces and buildings that are fully accessible by wheelchair (accessible for all people, including those who have limitations in mobility, vision or hearing). | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | WHO (2015) | |
| PER | 39 | Social living environment is sensitive to specific socio-cultural needs | The social living environment of older people from migrant communities, should not just be sensitive to their specific socio-cultural needs and preferences, but also supports trust building and development of social capital <i>Very hard to see how we can make this into a verifiable KPI, but nevertheless an important point made by the study: simply creating ethnically homogeneous living communities is not sufficient to support social connectivity, and in fact may have an adverse effect if such living arrangements are experienced as (socially) unsafe and/or adversarial by occupants</i> | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | Luo, H. (2015) | Study's main interest is in examining the role of the housing environment in building and strengthening social capital for older immigrants. Applicability of its findings may be limited by the specificity of its study group (older Chinese migrants in Canada); on the other hand, ageing immigrant populations are a feature in many EU MSS. Fairly small-scale study (though part of a larger programme), conducted using a focus group approach |
| PER | 40 | Availability, accessibility and affordability of healthy food suppliers | The area surrounding the house is not designated as a Food Desert. Alternatively and in the absence of accessible healthy food suppliers, existence of home-delivered and congregate meal programs. | _4_PERSONAL | _4.1_Identity_and_emotional_connectivity | 4.1.3_Neighbourhood_or_village | MetLife Institute / Stanford Center on Longevity (2013) | |
| PER | 41 | Elected co-habitation | Co-habitation with elected others is associated positively with mental health in older adults. Conversely, co-habitation with non-elected others or under circumstances beyond the control of the subject are negatively associated with mental health | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.1_Control_over_social_interaction | Firdaus, G. (2017) | General observations re quality of evidence * Transferrability of findings is problematic, given the decidedly non-European context (Delhi). Problems pertain mostly to scales/levels; items as such are recognizable. Applicability Europe would be best for highly urbanized low affluence environments * Study using large number of interviews on the basis of validated questionnaire. So no direct empirical evidence |

| | | | | | | | | |
|-----|----|---|--|-------------|--------------------------|---------------------------------------|--|--|
| PER | 42 | Home and environment offer free choice in social activity participation | Home enables social dignity by providing access to seven essential conditions. This comprises the condition that the spatial characteristics of the home and its immediate environment should give residents a free choice from moment to moment whether and how (directly or distanced) to participate in social activities Gibson et al (2012): Social dignity, a construct based on the taxonomy constructed by Nora Jacobson (2007, 2009) is generated in the interactions between and amongst individuals and groups and comes in two types: Dignity-of-Self and Dignity-in-Relation. The seven essential conditions are: * Meaning, self and self-expression * Safety and security * Ability to sustain meaningful relationships * Access to community and civic life * Participation in school, work or leisure * Respectful care relationships * Control, flexibility and spontaneity Berglund-Snodgrass et al (2019) state that self-elected participation, as well as the opportunity to participate to a degree commensurate with personal preferences and needs, is associated with greater perceived safety. | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.1_Control_over_social_interaction | Gibson, B.E. et al (2012) Berglund-Snodgrass, L., Nord, C. (2019) | Gibson et al: extent to which essential conditions can be evaluated and how varies. Important publication! Piquant, too, as its primary focus is on younger adults (19-55) with mobility disabilities, and their home environment needs are presented as underaddressed relative to older persons. This seems a false dichotomy, or at any rate a too facile assumption that older people's needs were actually being catered for (which our project suggests cannot have been the case) Berglund-Snodgrass et al: Well executed case study, but quite small-scale, based on a comparative analysis at two ECH complexes. Study abandons traditional distinctions between inner and outer safety in favour of an approach in which these kinds of safety are considered as co-constitutive situational effects. The focus of the study is on Extra Care Housing. This is within H4L scope, as ECH is considered as a special type of ordinary housing (not as a "light" form of residential LTC facility) |
| PER | 43 | Control over level of social interaction while in the home | The spatial lay-out of the home environment must allow occupants control over the level of social interaction they engage in while in the home. Specifically, each home should have a distinct private space to which the occupant wholly controls access | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.1_Control_over_social_interaction | van Steenwinkel et al (2017) | |
| PER | 44 | Home environment must allow keeping pets | Haven't seen this one before. Sounds relevant, especially for rented accommodation and extra care housing, where this may be controversial | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.1_Control_over_social_interaction | Darab, S., Hartman, Y., Holdsworth, L. (2018) | Note of caution is sounded in the study itself that the regional/rural context of the study population may shape the group's preferences differently than those of their metropolitan counterparts |
| PER | 45 | Housing options for single older women must enable occupants to live alone (as opposed to sharing accommodation with other tenants) | | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.1_Control_over_social_interaction | Darab, S., Hartman, Y., Holdsworth, L. (2018) | Note of caution is sounded in the study itself that the regional/rural context of the study population may shape the group's preferences differently than those of their metropolitan counterparts |
| PER | 46 | Home plus environment offer opportunity for pleasurable and meaningful activities | To support preservation of personal dignity (especially in people with dementia) the home and its immediate environment must offer accessible opportunities for engagement in pleasurable and meaningful activities The ability to keep performing daily routines and engage in activities in and around the house that are experienced as pleasurable and/or meaningful contributes to the preservation of personal dignity in people with dementia (and by analogy in other people with chronic illnesses). | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.1_Control_over_social_interaction | Gennip, I.E. van et al (2016) | Qualitative study, based on in-depth interviews with 14 people with mild to moderate dementia living at home. Assessment of this KPI could be through occupant assessment, user panel assessment, assessment by design professional etc |
| PER | 47 | Home environment has multiple 'third place thresholds' | To promote emotional connectivity, meaningful activity and social engagement, the immediate environment of the home should have multiple 'third place thresholds' According to the study, 'thresholds' "are the hybrid, semi-public spaces that straddle the private dwelling and public neighborhood, such as porches, patios, backyards and balconies. These in-between third places provide easy and readily available opportunities for social interaction, most commonly with neighbors." For those living in high-rise dwellings, balconies, lobbies and elevators took on the role of 'thresholds'. | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.1_Control_over_social_interaction | Gardner, P. (2011) | Study focuses primarily on the neighbourhood as a "place of aging", referring to older studies on the home as a "place of aging". So borderline in terms of the H4L scope. Study nevertheless interesting, because it employs a qualitative, in-depth approach to gain a better understanding of those social and physical elements of the neighbourhood that contribute to well being |
| PER | 48 | Home environment social and physical infrastructure supports social participation/ preventing social exclusion | Home environment and immediate neighbourhood provides for a supportive physical environment that promotes mobility and does provides access to suitable socially-oriented activities for both older adults and their carer to attend together e.g senior centres, dementia cafes, etc Home environment provides for a supportive physical and social infrastructure that provides opportunities for meaningful interpersonal connections | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.1_Control_over_social_interaction | Levasseur, M. et al (2015) Scharlach, A. (2017) | |
| PER | 49 | Occupant has discriminatory control over access to (parts of) dwelling | The home must offer the occupant discriminatory control over access to the dwelling and/or parts thereof. This includes the opportunity to regulate the flow of visitors and "professional operatives" to the home. Specifically, each home should have a distinct private space to which the occupant wholly controls access Hutchings et al (2017) note that subjects both reported and were observed to attaching importance to this aspect, and to specifically evaluate negatively caregivers and others accessing the home without the subjects being informed and asked for consent. Ewart et al (2013) suggest that as long as these visits can be controlled, the loss of privacy "is not necessarily seen as a negative effect of ageing, rather it is accepted as part of the social process that feeds into life changes around this time." Ewart et al note the tricky balance all participants struggled with between "wanting to retain the home as a private space whilst accepting the need for a greater degree of interference." van Steenwinkel et al (2017) specifically point to the need for a distinct private space. | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.2_Control_over_access | Hutchings, B., Chaplin, E (2017) Ewart, I., Luck, R. (2013) van Steenwinkel et al (2017) | Results from Hutchings et al need to be treated with some caution, as they are specifically about older adults with developmental disabilities, and we need to be careful about generalizing findings for this group to the general population. Ewart et al is interesting in that it takes account of and tries to itemize a fundamental shift in the perception of home that occurs as people age, and encounter age-related issues: the home loses its significance "as a personal statement, or a reflection of identity, and becomes more important as a base for planning activities outside the immediate confines of the house." The home as somewhere you leave, and not only somewhere to reside. |

| | | | | | | | | |
|-----|----|---|---|-------------|--------------------------|---|--|--|
| PER | 50 | Home occupants have access to housing programmes and resources | availability of a resource listing age-friendly home maintenance, support and care-giving services. | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.2_Control_over_access | Orpana, H. et al (2016) | |
| PER | 51 | Assistive technologies take account of occupant activity patterns and rituals | Acceptance and effectiveness of assistive technologies is positively affected if their deployment and functioning is sensitive to individual daily routines and activity patterns, and if their deployment is linked to daily activities with ritualistic significance. | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | White, G., Evans, R., Connelly, K., Caine, K. (2014) | Evaluation could actually be part quantitative and part qualitative. Deployment flexibility as such should be part of device performance specifications and could be evaluated quantitatively. Whether or not deployment actually does take account of these factors could be evaluated qualitatively on base of supplier practice, occupant experience... |
| PER | 52 | Monitoring and care platforms deployed in the home environment of people living with dementia should incorporate in their design the five key concern areas / themes | The study suggests that in developing platforms for monitoring / intervention aimed at emotional wellbeing, a participatory design strategy is required which should take into account five key themes: Communication; Isolation; Frustration; Carer challenges; Interventions | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | Mulvenna, M. et al (2017) | Sympathetic study, especially given its ICT-findings, but very small scale and anecdotal set-up |
| PER | 53 | Monitoring systems situationally adjustable according to wishes of and through actions of occupants. | When monitoring / data collection systems are deployed around the home, monitoring sensitivity must be situationally adjustable according to wishes of and through actions of occupants. This is an inferred KPI based on material put forward in the study that documents a) that older people experience some situations/activities as more privacy and dignity sensitive than others b) and that if informed and enabled of the opportunity to do so, they would make different trade-offs between safety and privacy/dignity for different situations | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | Garg, V. et al (2014) | Interesting study into design and performance requirements for in-home monitoring and data processing systems, taking into account informed trade-offs made by older adults between autonomy/dignity, utility and privacy using a four-dimensional model developed by Huber et al (no not that Huber, another Huber) (2010). Re verification: performance specifications of systems in question should bear this out |
| PER | 54 | Principles / data flows monitoring systems transparent to occupants. | When monitoring / data collection systems are deployed around the home, operational principles and data flows must be made transparent to occupants in non-technical terms Inferred KPI formulated on the basis of information in the study suggesting that occupants can only make informed trade-offs between safety and privacy/dignity when it is clear what information is collected and processed and to whom it is being made available | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | Garg, V. et al (2014) | |
| PER | 55 | Monitoring systems assume and accommodate occupant agency | Monitoring systems deployed in the home environment must assume and accommodate active, creative agency on the part of occupants. This includes operational principles and data flows being made transparent to occupants in non-technical terms, and monitoring sensitivity being situationally adjustable according to wishes of and through actions of occupants. Berridge (2017) states: "The strategies older adults employ would indicate that passive monitoring is a misnomer....residents resisted the expectations of regularity of routine and passivity built into the technological tool. This is remarkable in light of the fact that the technology provided little room for unintended or creative use; it was designed with...a 'passive age script' to be passively received with minimal added burden of learning how to interact with it....This refusal and 'reshaping' are acts that...must be respected and understood as an ethical imperative to avoid 'totalising and coercive' telecare practices." Garg et al (2014) note that occupants can only make informed trade-offs between safety and privacy/dignity when it is clear what information is collected and processed and to whom it is being made available. They also find a) that older people experience some situations/activities as more privacy and dignity sensitive than others b) and that if informed and enabled of the opportunity to do so, they would make different trade-offs between safety and privacy/dignity for different situations | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | Berridge, C. (2017) | Berridge well-designed qualitative study based on semi-structured interviews and using grounded theory methods. Sample size quite small. Garg et al interesting study into design and performance requirements for in-home monitoring and data processing systems, taking into account informed trade-offs made by older adults between autonomy/dignity, utility and privacy using a four-dimensional model developed by Huber et al (no not that Huber, another Huber) (2010). Re verification: performance specifications of systems in question should bear this out |
| PER | 56 | Adjustments to home (systems) offer sense of autonomy and control | To support preservation of personal dignity (especially in people with dementia), adjustments to the home and home management systems must offer a sense of autonomy and control to residents. An inferred KPI, based on the conclusion in the study that there is a marked difference between the degree of personal dignity experienced by people with dementia within familiar, "safe" home environments and outside them. The study concludes that home environments can contribute to the preservation of a sense of agency, autonomy and control, which in turn contribute to preservation of personal dignity. | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | Gennip, I.E. van et al (2016) | Effectively the evaluation could be a combination of quantitative and qualitative assessment. Quantitative assessment could for instance focus on whether user interfaces comply with emerging design for all standards. Other aspects will be more qualitative and based on user or expert evaluation / feedback |

| | | | | | | | | |
|-----|----|--|---|-------------|--------------------------|---|---|---|
| PER | 57 | Technologies and interfaces designed for use by occupants | <p>In-home technologies/control interfaces need to be designed for safe and convenient use by occupants. This is especially important in home environments for people with MCI or early stage-dementia</p> <p>Need for user control noted in Lorenzen-Huber et al (2011) based on a sophisticated argument predicated on the naïveté of many older persons' mental models of privacy, and the fact that in contrast to generally strongly developed mental models about independence and autonomy, mental models of privacy tend to be activity-centric.</p> <p>Literature referenced in Gabriel et al (2014) suggests that for people with MCI/early stage dementia this is important both to objectively give control over the living environment, AND to engender a sense agency and autonomy</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | Lorenzen-Huber et al (2011) Gabriel, M., Stirling, C., Faulkner, D, Lloyd, B. (2014) | Lorenzen-Huber et al has influenced Garg et al (2013) refers to (see above). Gabriel et al is a positioning paper summarizing current research for the Australian AHURI programme. This paper looks specifically at housing and support needs of people with dementia |
| PER | 58 | Home and home systems accommodate variety of short term and long term occupant routines | <p>The home and any assistive devices and monitoring systems deployed in it, must be designed such as to allow occupants the opportunity to shape and alter their daily routines both in the short term and as regards longer term changes</p> <p>Berridge (2017) states: "Both tangible and intangible elements of design contribute to the independence and well-being of older people at home. However, two important guidelines on housing design for older people refer only to tangible elements of design. It is proposed that intangible elements of design, which make older people feel well, encourage self-esteem and support independence, are also critical in providing high quality housing for older people. Study refers to a model by M. Lawton (1989) which evaluates the suitability of the home environment for older people (also) in terms of 'stimulation' and 'excessive support', with stimulation leading to personal satisfaction and enhanced wellbeing, and excessive support leading to overdependence and dissatisfaction. (Lawton M. Three functions of the residential environment. Journal of Housing for the elderly 1989;5(1):35-50). These aspects are included in the 'intangible elements'. Elements contributing to feelings of stimulation found in the study centre on flexibility of use and furnishing of spaces; daylight access; outdoor views; availability of quality private outdoor spaces The study forcefully argues that the assumption that older persons are creatures of habit with unvarying routines is hardwired into systems' design. This has a strong normative component where the system and its professional users consider changes to the</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | Mackenzie et al (2015) Berridge, C. (2017) | Mackenzie et al is rather an extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study Berridge et al is a well-designed qualitative study based on semi-structured interviews and using grounded theory methods. Sample size quite small. |
| PER | 59 | ICT solutions such as remote sensor and monitoring systems can support caregiving by carers and independent living of care-recipient. | Home environment can be appropriately adapted to integrate smart 'sensor' technologies that address actual needs of all stakeholders including end users, their family members and caregivers, and health professionals. | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | Eurocarers (2016) Jegundo, A., Goncalves, G. (2018) Ding, D. et al (2011) | |
| PER | 60 | Information and support needs of carers are easily accessible and understandable | Home allows for home-bound carers to access relevant web-based information (community services, information needs, support needs) and to receive primary care services in the home. | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | Plöthner, M. et al (2019) Maquire, R. et al (2019) | |
| PER | 61 | Surveillance devices and systems in the home adjustable to occupant needs and preferences by occupants themselves | <p>To safeguard perceived autonomy and privacy, any surveillance devices or systems deployed in the home must be adjustable to suit personal preferences for surveillance and non-surveillance, and it must possible for occupants to do this themselves. It should be transparent to occupants (in terms appropriate to their perspective and background) which information is being shared and with whom by devices and systems deployed about the house, with the occupant being enabled to make and revise decisions about which data is being shared.</p> <p>Mortenson et al (2016) start from theoretical perspectives on the Meaning of home and on intrusive aspects and power relationships inherent in Surveillance, which imply that the introduction of AAL technologies could undermine the basic affordances (roles and significance) of the home. This KPI has as background that participants were worried that AAL might reduce their sense of privacy, and that many of the qualms expressed concerned elements of dignity-preservation. Coupled with a sense of being watched, AAL could be considered as a surveillance devise that undermines "the choice of in/visibility and making the home into an extitutional space, which destabilizes notions of inside and outside." Individual adjustability of settings is required as the extent to which and the manner in which people are prepared to engage in trade-offs between privacy and safety varies enormously from person to person. Participants in the study are clearly concerned about loss of privacy and dignity through data being shared with e.g. family members or caregivers, concerns which are exacerbated when the mechanism</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.3_Control_over_data_collection_and_management | Mortenson, W., Sixsmith, A., Beringer, R. (2016) | Qualitative study that takes a potential user perspective on the impact on the impact of surveillance technologies on the everyday lives of older people. Organised around three research questions, of which the first is the most immediately relevant for HAL: How would surveillance technologies change the way older people experience the home environment? In terms of the actual technologies under analysis, the article is perhaps a bit dated (the data was collected in 2010; it apparently took the author some time to get his thoughts in order). |

| | | | | | | | | |
|-----|----|---|--|-------------|--------------------------|--|---|--|
| PER | 62 | Personalisation of kitchen spaces | <p>To preserve their function as a locus for emotional attachment and personal identity, kitchens must allow personalization of design, equipment and processes to reflect occupants' lived experience</p> <p>The study applies the methodologies of work done in researching spaces of memory in geographical and public spaces contexts to the private space of the kitchen, building upon conceptualizations of the kitchen as a lieu de mémoire "that provides a context for the sensory, haptic and kinetic dimensions of memory which may, or may not, relate to food, but which certainly connects kitchens and their occupants to individuals and moments in time which may otherwise be forgotten." Kitchens, in other words, play an important role in establishing people's sense of self and personal history, and thus to the extent in which people experience their homes as emotionally important and supportive. To reflect this, kitchen spaces and kitchen adaptations in age-friendly homes should offer customization opportunities in terms of lay-out, equipment and design.</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.4_Control_over_look_and_feel_and_furnishings | Meah, A., Jackson, P. (2016) | Hard to gauge the quality of the study, as it is of a type (ethnography) not otherwise much encountered in this field. |
| PER | 63 | Space and facilities for personal history and sense of self | <p>The home environment must offer sufficient space and facilities for inclusion of elements and objects reflecting the occupants' personal history and sense of self; additionally, it must be possible to customize key areas of the home according to the occupants' personal tastes and preferences.</p> <p>Inferred KPI, based on the analysis in the study of subjects' experience of their current homes and the way in which and extent to which their homes function as a health resource. The importance of both personal historical continuity (the home as a place and reminder of past experience), and personal + personalized space clearly come to the fore, as do stress and anxiety at losing these resources in the case of moving home. By inference, a new home environment that allows customization to suit personal history and preferences will help avoid loss of the sense of self and identity, as well as contributing to emotional wellbeing.</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.4_Control_over_look_and_feel_and_furnishings | Bergland, A., Slettebo, A. (2015) | Study uses a salutogenic approach to look into coping strategies employed by the 'oldest old', specifically women aged 90 years and older. Study examines the contribution of a range of health resources, including the home. Hard to judge the quality of the study: it is in any case highly qualitative in nature and quite small-scale, with 10 study subjects |
| PER | 64 | Adjustments to the home respect long-term familiarity with and emotional attachment to dwelling | <p>To support preservation of personal dignity (especially in people with dementia), any adjustments to the home must respect the occupants' long-term familiarity with and emotional attachment to the dwelling</p> <p>Study distinguishes between personal dignity and general dignity, and concludes both that loss of personal dignity particularly affects people with dementia, and that this loss is often associated with a sense of worthlessness, of no longer being any use or value to others. Preservation of personal dignity as a care strategem can be generalized to people with other chronic illnesses</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.4_Control_over_look_and_feel_and_furnishings | Gennip, I.E. van et al (2016) | Qualitative study, based on in-depth interviews with 14 people with mild to moderate dementia living at home. Assessment of this KPI could be through occupant assessment, user panel assessment, assessment by design professional etc |
| PER | 65 | Home maintenance controlled and engaged in by older people | <p>The home environment and its surroundings (up to neighbourhood level) should offer opportunities and services for home maintenance that actively engage older people in maintenance activities, and cede control of maintenance issues to older people themselves.</p> <p>Active engagement in maintenance activities may promote a sense of autonomy, choice and social cohesion, and may avoid or reduce stress, anxiety and feelings of loss of control as a result of maintenance issues, and/or dealing with maintenance services and service providers</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.4_Control_over_look_and_feel_and_furnishings | Coleman, T., Kearns, R., Wiles, J. (2016) | Well-executed study (case study and interview based, of course). Only drawback is the study population was quite specific (island community in the Auckland, New Zealand metropolitan area). Study subjects lived independently and were between 65 and 94 years of age. |
| PER | 66 | Occupant can customize living environment according to personal history and identity | <p>The home must offer the occupant opportunities to customize the living environment according to personal, preferences, tastes and history. This includes tailoring of adjustments and features to individual needs and preferences, in order to contribute to Place Identity</p> <p>Hutchings et al (21017) note association with positive emotional attachment to the home, sense of wellbeing, and sense of continuity with earlier life phases. The study also specifically notes that it is important that secure storage facilities are available (though this may reflect specific group living conditions for the study population).</p> <p>Kylén et al (2019) highlight the importance of being able to decide and choose individually, on the basis of self-perceived needs and preferences. Arguably, this has an Economic component, as lower income groups may find it hard to have this need catered for.</p> <p>Design features associated with personalization found by Lies et al (2017) are:</p> <ul style="list-style-type: none"> * Individual home display spaces * Individual home front porch * Individual home back porch * Wild and raised flowers * Common house dining room | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.4_Control_over_look_and_feel_and_furnishings | Hutchings, B., Chaplin, E (2017) Kylén, M., Löfqvist, C., Haak, M., Iwarsson, S. (2019) Lies, M., Kang, M., Sample, R. (2017) | Care needed with Hutchings et al, as study is specifically about older adults with developmental disabilities, and we need to be careful about generalizing findings for this group to the general population. Re Kylén et al: Some of the occupants choices will concern goods and services, but where choices concern actual home components, evaluation could take place on the basis of the availability or not of customization options. Lies et al is a small-scale observational study, but well grounded in place making and place attachment theory. Exploratory in nature, and small scale, but very useful and practically applicable findings. If adopted in any of our certification pilots, verification could be through assigning a score based on the number of features present |

| | | | | | | | | |
|-----|----|--|--|-------------|--------------------------|--|---------------------------------------|--|
| PER | 67 | Occupants can reorder use and furnishing of space to suit (changing) personal preferences | To support a positive and enabling connection between occupant and home environment, occupants must be able to reorder the use and furnishing of spaces according to personal preferences, with the proviso that these preferences may change over time. Quote pertaining to the study's results "Both tangible and intangible elements of design contribute to the independence and well-being of older people at home. However, two important guidelines on housing design for older people refer only to tangible elements of design. It is proposed that intangible elements of design, which make older people feel well, encourage self-esteem and support independence, are also critical in providing high quality housing for older people. Study refers to a model by someone named Lawton which evaluates the suitability of the home environment for older people (also) in terms of 'stimulation' and 'excessive support', with stimulation leading to personal satisfaction and enhanced wellbeing, and excessive support leading to overdependence and dissatisfaction. (Lawton M. Three functions of the residential environment. Journal of Housing for the elderly 1989;5(1):35-50). These aspects are included in the 'intangible elements'. Elements contributing to feelings of stimulation found in the study centre on flexibility of use and furnishing of spaces; daylight access; outdoor views; availability of quality private outdoor spaces | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.4_Control_over_look_and_feel_and_furnishings | Karol, E. (2016) | the author of this paper used an 'architecture of accommodation' approach in designing an award-winning house that would support independence of the occupants into old age. I've rated the evidence quality as low, because the findings are essentially based on a single case study. |
| PER | 68 | Home functions, elements and furnishings can be rearranged without (major) constructive or technical adaptations | Homes should be sufficiently flexible to allow for rearrangement of identity-supporting functions, elements and furnishings without the need for (major) constructive or technical adaptations, as usage patterns of occupants evolve over time: the option to maintain the sense of territory and ownership as e.g. circle of activity contracts should be integrated into the design of the home and its components <i>Some relevant NoP material on the meaning and significance of 'home' and 'being at home'. People need their homes to fulfill the functions of</i> <i>* place of centering, that is to say a reference point from which we build our spatial world.</i> <i>* Derived from that, an anchoring point for the flow of daily life</i> <i>* Providing a sense of permanence and continuity</i> <i>* Territory or place of refuge</i> <i>* investiture for a sense of ownership</i> <i>All these aspects are useful to flesh out the NoP side of the HAL taxonomy on the branches dealing with the Personal cluster, more specifically those subbranches that focus on identity and emotional attachment.</i> <i>The inferred KPI at left, and the one in the following have been inferred from material in the study, though this has not been simple, given the study is a scene-setting paper rather than an experimental or investigative study.</i> | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.4_Control_over_look_and_feel_and_furnishings | Rowles, G., Bernard, M. (2013) | It's a decent enough scene setting essay, intended as the opener and scene setter for a book featuring explorations of various aspects of environmental gerontology. The reason I'm not sure how to value the quality of evidence is precisely because it is a scene setting rather than an experimental or investigative article. |
| PER | 69 | Physical cluster features in specialist housing types have unobtrusive, non-institutionalized design | To support dignity and self-esteem, accessibility, safety and support features in specialist housing types should have unobtrusive, non-institutionalized design The study finds that safety and working care are negatively associated with residents' reported QoL, and interprets that this may be due to the fact that "buildings that signify to their users that they are designed for older people (such as where there are many building elements that reflect the needs of disabled or frail users) can have a negative impact on residents via the activation of stereotypes of age and ageing, which have been demonstrated to impair people's functioning and cognitive performance" | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.4_Control_over_look_and_feel_and_furnishings | Orrrell, A. et al (2013) | Large-scale and thorough analysis of relation of building and design characteristics to reported QoL in residents of extra care housing schemes in the UK, using the EVOLVE tool as an instrument for structured description of building features. |
| PER | 70 | Separate extra bedroom for carer | Home has at least one extra bedroom for carer or other visitor or is modular allowing for easy adaptation visiting friends, relatives or other caregiver | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.5_Availability_of_private_spaces_and_times | Carers UK (2016) | |
| PER | 71 | Spaces and design features contribute to autonomy and space for transition | To contribute to Place dependence (a dimension of place attachment), the home environment must provide spaces and design features that contribute to autonomy and space for transition <i>The design features associated with these aspects found in the study were:</i> <i>Autonomy:</i> <i>* Individual home kitchen</i> <i>* Individual home bathroom</i> <i>* Common garden</i> <i>* Compost area</i> <i>Space for transition</i> <i>* Common house guest rooms</i> <i>* Individual home closets</i> <i>* Individual home great room</i> | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.5_Availability_of_private_spaces_and_times | Lies, M., Kang, M., Sample, R. (2017) | Small-scale observational study, but well grounded in place making and place attachment theory. Exploratory in nature, and small scale, but very useful and practically applicable findings. If adopted in any of our certification pilots, verification could be through assigning a score based on the number of features present |

| | | | | | | | | |
|-----|----|--|---|-------------|--------------------------|---|---|---|
| PER | 72 | Private space for each occupant | The home must offer the occupant private space. In co-habitation situations specifically, the dwelling has to provide sufficient personal space for each inhabitant Hutchings et al (2017) Associate private space with positives re autonomy, privacy, but also sense of control and agency, and subjective security. Firdaus (2017) notes that where older adults are co-habiting with others (primarily family members, in the study under consideration), lack of sufficient personal space is associated negatively with mental health. In the context of the study, adequate personal space is defined as having your own bedroom of sufficient dimensions. Additionally, positive mental states are associated with (exclusive) availability of amenities in the home: private bath, own heating and cooling system, separate kitchen, own outdoor space). In more affluent contexts this could extrapolate to broader array of personal spaces | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.5_Availability_of_private_spaces_and_times | Hutchings, B., Chaplin, E (2017) Firdaus, G. (2017) | Care needed with interpretation of Hutchings et al, as study is specifically about older adults with developmental disabilities, and we need to be careful about generalizing findings for this group to the general population. Some ideas on verification based on Firdaus: Qualitative verification on the basis of reported/perceived availability of personal space is also an option. For existing home environments use experience of current occupants. For new builds or major refurbishment option could be panel responses to proposed designs/lay-outs |
| PER | 73 | Adequate protection from noise pollution | Exposure to noise pollution is negatively associated with mental health and social functioning. Protection from noise pollution contributes to personal wellbeing and social participation | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.5_Availability_of_private_spaces_and_times | Firdaus, G. (2017) | Verification: methodology for assessment in Comfort category (Physical cluster) can be used |
| PER | 74 | Opportunity for claiming and crafting personal territory | The home environment should offer opportunity to claim and craft a specific personal space (territory) to facilitate the process of appropriation. Study employs categorization developed by Swedish architect Ola Nylander (2002) of non-measurable aspects of architecture: * spatial articulation * enclosure * sensory qualities * materials * form, measurements and proportions | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.5_Availability_of_private_spaces_and_times | van Steenwinkel et al (2017) | |
| PER | 75 | Home offers opportunity to create personal, "safe" spaces for occupants with MCI/early-stage dementia | Report does not specify further what this means in terms of spatial requirements, access control and so on. | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.5_Availability_of_private_spaces_and_times | Gabriel, M., Stirling, C., Faulkner, D, Lloyd, B. (2014) | Positioning paper summarizing current research for the Australian AHURI programme. This paper looks specifically at housing and support needs of people with dementia. |
| PER | 76 | In-home technologies / systems should be equipped with privacy awareness systems tailored to the concerns and tech awareness level of users | Again based on the fact that older people's mental models of privacy are often naive, and their level of technology awareness and knowledge quite low, the study states: "Making data more transparent can help to align older adults' perceived risk with their actual risk. Privacy awareness systems ... allow data collectors to announce and implement data usage policies and provides users with the ability to track and manage their personal information. Such systems are universally useful. Such a system would create a sense of accountability, rather than absolute security, about privacy, particularly in home-based ubiquitous computing environments | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.5_Availability_of_private_spaces_and_times | Lorenzen-Huber et al (2011) | This is the study that Garg et al (2013) refers to (see above) |
| PER | 77 | The home environment for older women living alone must offer adequate privacy and private spaces | | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.5_Availability_of_private_spaces_and_times | Darab, S., Hartman, Y., Holdsworth, L. (2018) | Note of caution is sounded in the study itself that the regional/rural context of the study population may shape the group's preferences differently than those of their metropolitan counterparts |
| PER | 78 | home environments for older women living alone must offer private outdoor spaces | To support occupants sense of identity and autonomy, home environments for older women living alone must offer private outdoor spaces Where "private" is a somewhat flexible term. It does not necessarily imply exclusivity, the requirement is also satisfied when e.g. the occupant has control over who uses the outdoor space, the outdoor space is part of a co-housing development etc | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.5_Availability_of_private_spaces_and_times | Darab, S., Hartman, Y., Holdsworth, L. (2018) | Note of caution is sounded in the study itself that the regional/rural context of the study population may shape the group's preferences differently than those of their metropolitan counterparts |
| PER | 79 | Palliative care/ End-of-life | Palliative care services can be arranged for in the home and these take into account the specific needs of informal carers | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.6_Seclusion_for_health_and_ADL_care_provision | Ewing, G., Grande, G. (2013) Ewing, G., Grande, G. (2016) Seow, H., Bainbridge, D. (2018) | |
| PER | 80 | Information and support needs of carers are easily accessible and understandable | <i>Home allows for home-bound carers to access relevant web-based information (community services, information needs, support needs) and to receive primary care services in the home.</i> | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.6_Seclusion_for_health_and_ADL_care_provision | Plöthner, M. (2019) Maquire, R. et al (2019) | |
| PER | 81 | Formal and personalised social and health services are available, accessible and affordable in the home's neighbourhood | Proportion of older persons who have personal care or assistance needs that are receiving formal (public or private) home- or community-based services. | _4_PERSONAL | _4.2_Privacy_and_dignity | 4.2.6_Seclusion_for_health_and_ADL_care_provision | WHO (2015) | |

| | | | | | | | |
|-----|----|--|--|-------------|--------------------------|--|--|
| PER | 82 | Home environment must provide spaces and design features that contribute to autonomy and space for transition. | <p>To contribute to Place dependence (a dimension of place attachment), the home environment must provide spaces and design features that contribute to autonomy and space for transition.</p> <p>In designing and building specialist housing types, the design of provisions for safety and health must take into account the need to maintain residents' sense of independence</p> <p>The design features associated with these aspects found in Lies, M., Kang, M., Sample, R. (2017) were:</p> <p>Autonomy:</p> <ul style="list-style-type: none"> * Individual home kitchen * Individual home bathroom * Common garden * Compost area <p>Space for transition</p> <ul style="list-style-type: none"> * Common house guest rooms * Individual home closets * Individual home great room <p>For specialist housing, Orrell et al (2013) note that safety is negatively associated with QoL, and point to previous research that highlights that "residents' independence and ability to move freely inside and outside the home was compromised by the use of fire-protection devices that kept doors, which required considerable force to open them, closed." Generalizing to other types of safety provisions - and noting that developers of specialist housing tend to adopt risk-averse strategies to minimize the chances of non-compliance with health and safety legislation - the study notes that the trade-off between safety and actual and perceived independence</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | Orrell, A. et al (2013) Lies, M., Kang, M., Sample, R. (2017) | Orrell et al Large-scale and thorough analysis of relation of building and design characteristics to reported QoL in residents of extra care housing schemes in the UK, using the EVOLVE tool as an instrument for structured description of building features. Lies et al small-scale observational study, but well grounded in place making and place attachment theory. Exploratory in nature, and small scale, but very useful and practically applicable findings. If adopted in any of our certification pilots, verification could be through assigning a score based on the number of features present |
| PER | 83 | Home component settings controllable by occupants | <p>The occupant of the home must be able to control and vary the settings of home components for e.g. temperature control, ventilation, day light access, outdoor views etc.</p> <p>The key concern is that occupants are enabled to control and vary these components independently. This contributes greatly to sense of autonomy and sense of control over the environment (cf. SoC)</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | van Steenwinkel et al (2017) | |
| PER | 84 | Occupants as co-creators of home environments | <p>In new build and major refurbishment projects, (future) occupants should be enabled to act as co-creators of the new or restructured home environment.</p> <p>The study quotes a US programme to show that "aging-in-place initiatives that foster naturally progressing identity changes through a person-centered lens will be more successful than those that promote a directive approach." Part of the reason for this is that co-creative models help to dynamically preserve people's sense of identity.</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | Martin, D., Long, O., Kessler, L. (2019) | Very much an exploratory, qualitative study, survey-based Interesting take, as such: study examines motives for relocation among older adults to infer conditions for successful ageing in place. Older adults here defined as those over 60 years of age, so a fairly broad definition. Follow-up survey questions were put to respondents who had answered "no" or "unsure" to the question "Do you want to stay in your own home as you grow older?" |
| PER | 85 | Flexible home tenureship rules | <p>Home tenureship rules are flexible, allowing for a carer to live in home of care recipient.</p> <p>Existing tenureship rules allows for a carer to move into home of care-recipient.</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | Carers UK (2016) | |
| PER | 86 | Affordable housing | <p>Financial dependency is negatively associated with mental health. This is specifically so where there is financial dependency for housing arrangements</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | Firdaus, G. (2017) | Verification: use housing costs as percentage of disposable income |
| PER | 87 | Long-term security affordable housing arrangements | <p>To support personal sense of security and emotional wellbeing, occupants must have long-term security on costs of housing, or alternatively on the long-term availability of appropriate, affordable housing arrangements</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | Mackenzie et al (2015) | Rather an extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study |
| PER | 88 | Secured housing, including perceived safety at home | <p>security is important to subjective well-being. This is reflected in correlations between experience of victimisation and subjective well-being at the individual level (Boarini et al., 2012), as well as by subjective perceptions of safety. Often a perceived lack of physical safety may affect subjective well-being more than the real impact of any threat. Therefore, Measures to improve the security in older people's homes can be needed, e.g. emergency call monitoring devices to keep older people safe; safe from natural disasters.</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | Eurostat (2019) | |
| PER | 89 | Progressive privacy approaches in complexes/configurations of homes | <p>Apartment complexes/configurations of homes for older people should adopt a progressive privacy design approach to reconcile safety and autonomy concerns</p> <p>the study notes that in some ECH complexes analysed, the negative effect of safety on QoL is not apparent, and notes these complexes employ a progressive privacy design approach to keep public and private areas separate. "As such, security is realised in a relatively covert manner, and rather than provoking a feeling of institutionalisation, the knowledge that one lives in a secure environment ...could have a beneficial psychological effect on residents."</p> | _4_PERSONAL | _4.2_Privacy_and_dignity | Orrell, A. et al (2013) | Large-scale and thorough analysis of relation of building and design characteristics to reported QoL in residents of extra care housing schemes in the UK, using the EVOLVE tool as an instrument for structured description of building features. |

| | | | | | | | | | |
|-----|--|----|--|---|-------------|--------------------------|--|-------------------------------|---|
| PER | | 90 | Home environment promotes sense of autonomy and purpose for informal carers | Home environment should be a place that promotes the wellbeing of informal carers by promoting their sense of autonomy and sense of purpose. There could potentially be several indicators, notably indicators that facilitate and promote access to social connections and social activities in and outside the home (both virtual and actual) | _4_PERSONAL | _4.2_Privacy_and_dignity | | Maquire, R. et al (2019) | |
| PER | | 91 | Financing mechanisms for age-friendly housing should enable as many people as possible to remain or become home owners | Though higher scores on QoL etc for home owners are at least partly due to higher SES, there does seem to be an autonomous positive effect from home ownership compared to tenancy | _4_PERSONAL | _4.2_Privacy_and_dignity | | Nakhodaezadeh,M. et al (2017) | Applicability of research results may be somewhat limited, because of specific study context (older people in urban Iran). Uses the EVOLVE tool as a starting point for analysis. Of the three main research questions, question 2 is the most pertinent for H4L: "May the sociophysical environment of the home be associated with QoL and perceived social support among elders." |

| Identification Cluster | Number | Criterion Proposed title | Description | Taxonomy cluster | | | Source details | | Notes |
|------------------------|--------|--------------------------|--|---|-----------|----------------------|---|---|--|
| | | | | KPI cluster | Category | Subcategory | Source | Quality and approach study | |
| SOC | | 1 | Home must offer opportunity to co-habit with self-selected others | According to Firdaus (2017), co-habitation with elected others is associated positively with mental health in older adults. Conversely, co-habitation with non-elected others or under circumstances beyond the control of the subject are negatively associated with mental health. Hui et al (2014) remark that the home must offer the opportunity to co-habit with others themselves select, be they relatives or others. In the research findings, this aspect is positively associated with the perceived utility of the home | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | Firdaus, G. (2017) Hui, E.C.M., Wong, F.K.W., Chung, K.W., Lau, K.Y. (2014) | General observations re quality of evidence from Firdaus: * Transferrability of findings is problematic, given the decidedly non-European context (Delhi). Problems pertain mostly to scales/levels; items as such are recognizable. Applicability Europe would be best for highly urbanized low affluence environments * Study using large number of interviews on the basis of validated questionnaire. So no direct empirical evidence Findings from Hui et al need to be treated with some caution, as the study was carried out in a very different socio-cultural context (Hosokawa) |
| SOC | | 2 | Spatial lay-out of the home environment allows control over level of social interaction. | The spatial lay-out of the home environment must allow occupants control over the level of social interaction they engage in while in the home. Specifically, each home should have a distinct private space to which the occupant wholly controls access | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | van Steenwinkel et al (2017) | |
| SOC | | 3 | Home environment has spaces and design features that contribute to autonomy and space for transition | To contribute to Place dependence (a dimension of place attachment), the home environment must provide spaces and design features that contribute to autonomy and space for transition The design features associated with these aspects found in the study were: Autonomy: * Individual home kitchen * Individual home bathroom * Common garden * Compost area Space for transition * Common house guest rooms * Individual home closets | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | Lies, M., Kang, M., Sample, R. (2017) | Small-scale observational study, but well grounded in place making and place attachment theory. Exploratory in nature, and small scale, but very useful and practically applicable findings. If adopted in any of our certification pilots, verification could be through assigning a score based on the number of features present |
| SOC | | 4 | Home offers sufficient personal space in co-habitation situations | Where older adults are co-habiting with others (primarily family members, in the study under consideration), lack of sufficient personal space is associated negatively with mental health. In the context of the study, adequate personal space is defined as having your own bedroom of sufficient dimensions. Additionally, positive mental states are associated with (exclusive) availability of amenities in the home: private bath, own heating and cooling system, separate kitchen, own outdoor space). In more affluent contexts this could extrapolate to broader areas of personal space | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | Firdaus, G. (2017) | Qualitative verification on the basis of reported/perceived availability of personal space is also an option. For existing home environments use experience of current occupants. For new builds or major refurbishment option could be panel responses to proposed designs/lay-outs |
| SOC | | 5 | Occupants have control over access to home | Home must offer access control to occupants, thus giving occupants the opportunity to regulate the flow of visitors and "professional operatives" to the home According to Sixsmith et al (2014), for the purpose of emotional security and the experience of autonomy and agency, homes should allow occupants to exercise control over access by others to the dwellings and/or parts thereof. Results from Ewart et al (2013) suggest that as long as these visits can be controlled, the loss of privacy "is not necessarily seen as a negative effect of ageing, rather it is accepted as part of the social process that feeds into life changes around this time." Study notes the tricky balance all participants struggled with between "wanting to retain the home as a private space whilst accepting the need for a greater degree of interference." | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | Sixsmith, J. et al (2014) Ewart, L., Luck, R. (2013) | Sixsmith et al is an interesting study, part of the ENABLE-AGE project. Limited source of KPIs, but definitely worth another look as a source of NoPs An interesting innovative approach in Ewart et al is that the study takes account of and tries to itemize a fundamental shift in the perception of home that occurs as people age, and encounter age-related issues: the home loses its significance "as a personal statement, or a reflection of identity, and becomes more important as a base for planning activities outside the immediate confines of the house." The home as somewhere you leave, and not only somewhere to reside. |
| SOC | | 6 | Home environment offers opportunities for active engagement in social spaces | Social spaces in facilities for communal independent living should offer clear opportunities for active engagement. This is positively associated with both appreciation and use of such spaces | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | Campbell, N. (2015) | Well-designed study using an original conceptual framework (Successful Social Space Attribute Model) developed by the author in a previous study. Reasonably large number of respondents, but only one study-site |
| SOC | | 7 | Home offers dedicated space for pursuing activities for self-fulfilment and social engagement. | Research shows that the ability to pursue these activities in the home contributes to positive perception of the home environment and contributes to perceived agency in ageing habitation | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | Sixsmith, J. et al (2014) | Interesting study, part of the ENABLE-AGE project. Limited source of KPIs, but definitely worth another look as a source of NoPs |
| SOC | | 8 | The home's immediate environment has multiple 'third place thresholds' | To promote emotional connectivity, meaningful activity and social engagement, the immediate environment of the home should have multiple 'third place thresholds' According to the study, "thresholds" are the hybrid, semi-public spaces that straddle the private dwelling and public neighbourhood, such as porches, patios, backyards and balconies. These in-between third places provide easy and readily available opportunities for social interaction, most commonly with neighbors. "For those living in high-rise dwellings, balconies, lobbies and elevators took on the role of 'thresholds'." Inferred KPI from the observation in the study (Ewart citing an earlier study) that it is often better for the well-being of older people give rather than receive social support. | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | Gardner, P. (2011) | Study focuses primarily on the neighbourhood as a "place of aging", referring to older studies on the home as a "place of aging". So borderline in terms of the H4L scope. Study nevertheless interesting, because it employs a qualitative, in-depth approach to gain a better understanding of those social and physical elements of the neighbourhood that contribute to well being |
| SOC | | 9 | The home and its immediate environment offer opportunities to engage in meaningful social activity | | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | Orrell, A. et al (2013) | Large-scale and thorough analysis of relation of building and design characteristics to reported QoL in residents of extra care housing schemes in the UK, using the EVOLVE tool as an instrument for structured description of building features |
| SOC | | 10 | Home enables social dignity by providing access to seven essential conditions | Social dignity, a construct based on the taxonomy constructed by Nora Jacobson (2007, 2009) is generated in the interactions between and amongst individuals and groups and comes in two types: Dignity-of-Self and Dignity-in-Relation. The seven essential conditions are: * Meaning, self and self-expression * Safety and security * Ability to sustain meaningful relationships * Access to community and civic life * Participation in school/work or leisure * Respectful care relationships * Control, flexibility and spontaneity | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | Gibson, B.E. et al (2012) | Extent to which essential conditions can be evaluated and how varies. Important publication! Piquant, too, as its primary focus is on younger adults (19-55) with mobility disabilities, and their home environment needs are presented as underaddressed relative to older persons. This seems a false dichotomy, or at any rate a too facile assumption that older people's needs were actually being catered for (which our project suggests cannot have been the case) |
| SOC | | 11 | Availability of space in the home to receive visitors, including overnight visitors | In Darab et al (2018) this comes out as being especially important to members of the study group (who are at especial risk of social isolation), while at the same time often hard to satisfy in the context of low-cost rented accommodation. Nakhodaezadeh et al (2017) point out that in Iran, more than in (western) Europe, receiving guests, often multiple guests and overnight, at the home is an essential element in maintaining and strengthening social ties and social support networks. This may well also be the case in areas of southern and eastern Europe, as well as among specific ethnic and socio-cultural groups everywhere. Inferred KPI: as other people in the social network age, these spaces should be accessible for people with limited or moderate physical capabilities | _5_SOCIAL | _5.1_Social_activity | S.1.1_Ability_to_have_social_contacts_in_the_home | Darab, S., Hartman, Y., Holdsworth, L. (2018) Nakhodaezadeh, M. et al (2017) | Re Darab et al, a note of caution is sounded in the study itself that the regional/rural context of the study population may shape the group's preferences differently than those of their metropolitan counterparts. Applicability of research results from Nakhodaezadeh et al may be somewhat limited, because of specific study context (older people in urban Iran). Uses the EVOLVE tool as a starting point for analysis. Of the three main research questions, question 2 is the most pertinent for H4L: "May the sociophysical environment of the home be associated with QoL and perceived social support among elders." |

| | | | | | | | | |
|-----|----|--|--|-----------|---|--|---|---|
| SOC | 12 | The home environment enables occupants to access those in their social group | The home environment must enable occupants to access those in their social group, either being able to visit locally or virtually, or allowing access to the home for people who visit. This includes easy accessibility to the home for visitors with limited mobility. This KPI derives from one of the central concepts in Ewart et al (2013), namely that as people grow more housebound, the significance of the home shifts from being a safe haven and place of attachment, to a place from which escape is sought and which must function as a platform for engagement with the world beyond the front door. In terms of NoPs, this means that the outward-focused engagement role of the house takes on a more prominent role as people become more housebound. It also implies that people will have difficulties making accurate assessment of their own future needs and preferences, as these will shift according to how their individual life histories pan out. Accessibility criterion is specifically pointed out by Gabriel et al (2014). | _S_SOCIAL | _S.1_Social_activity | S.1.1_Ability_to_have_social_contacts_n_the_home | Ewart, I., Luck, R. (2013) Gabriel, M., Stirling, C., Faulkner, D., Lloyd, B. (2014) | An interesting innovative approach in Ewart et al is that it takes account of and tries to itemize a fundamental shift in the perception of home that occurs as people age, and encounter age-related issues: the home loses its significance "as a personal statement, or a reflection of identity, and becomes more important as a base for planning activities outside the immediate confines of the house." The home as somewhere you leave, and not only somewhere to reside. Gabriel et al is a positioning paper summarizing current research for the Australian AHURI programme. This paper looks specifically at housing and support needs of people with dementia. |
| SOC | 13 | The home environment allows free choice in manner and level of social engagement | The home environment - at the levels home, immediate environment and neighbourhood/village must offer occupants free choice in the manner and level of social engagement entered upon (at the scale levels relevant for H4L) Ewart et al (2013) gives an example of another balancing act: "wanting to remain on good terms with a neighbour for mutual reassurance, but at the same time not wanting to be forced into false companionship...keeping the children close, but not so close that authority and control are lost" Berglund-Snodgrass et al (2019), focusing specifically on the home and its immediate environment note that self-selected participation, as well as the opportunity to participate to a degree commensurate with personal preferences and needs, is associated with greater https://www.researchgate.net/publication/338044444 | _S_SOCIAL | _S.1_Social_activity | S.1.1_Ability_to_have_social_contacts_n_the_home | Ewart, I., Luck, R. (2013) Berglund-Snodgrass, L., Nord, C. (2019) | An interesting innovative approach in Ewart et al is that it takes account of and tries to itemize a fundamental shift in the perception of home that occurs as people age, and encounter age-related issues: the home loses its significance "as a personal statement, or a reflection of identity, and becomes more important as a base for planning activities outside the immediate confines of the house." The home as somewhere you leave, and not only somewhere to reside. Berglund-Snodgrass et al is a well executed case study, but quite small-scale, based on a comparative analysis at two ECH complexes. Study abandons traditional distinctions between inner and outer safety in favour of an approach in which these kinds of safety are considered as co-constitutive situational effects. The focus of the study is on Extra Care Housing. This is within H4L scope, as ECH is considered as a special type of ordinary housing that as a "table" form of residential LTC facility. |
| SOC | 14 | Home environment promotes informal carers' sense of autonomy and purpose | Home environment should be a place that promotes the wellbeing of informal carers by promoting their sense of autonomy and sense of purpose. There could potentially be several indicators, notably indicators that facilitate and promote access to social connections and social activities in and outside the home (both virtual and actual) | _S_SOCIAL | _S.1_Social_activity | S.1.1_Ability_to_have_social_contacts_n_the_home | Miquire, R. et al (2019) | |
| SOC | 15 | Homes environment provides spaces and design features conducive to spontaneous, proposed and organized interaction | To contribute to Family bonding (dimension of place attachment), the home environment must provide spaces and design features conducive to spontaneous, proposed and organized interaction. This also applies to Family bonding Lies et al (2017) uses a five-dimensions model of place attachment developed by Raymond et al (2010), which breaks this down into: * place dependence * place identity * nature bonding * friend bonding * family bonding The present study examines the relative importance of these five dimensions and explores which design features of the home environment contribute to each dimension. The study took place among residents of a senior co-housing community in the US Midwest. Despite a number of communal facilities on-site, this concerns independent living and is thus in scope for H4L. The relative importance of the five dimensions in decreasing order of importance: * Friend bonding * Nature bonding * Place dependence * Place identity * Family bonding The design features associated with these types of interaction found in the study were: Spontaneous interaction * Individual home front porch * Nodes and Sidewalk System * Clustered mailboxes * Clustered parking Proposed interaction: * Common House Game Room * Common House Hearth Room Organized interaction * Common House Dining Room * Common House Patio * Individual Home Great Room Though Lies et al attaches only relatively minor significance to Family bonding, other studies including Gray et al (2018) do agree that older residents who are in frequent contact with | _S_SOCIAL | _S.1_Social_activity | S.1.1_Ability_to_have_social_contacts_n_the_home | Lies, M., Kang, M., Sample, R. (2017) Gray et al (2018) | Lies et al is a small-scale observational study, but well grounded in place making and place attachment theory. Exploratory in nature, and small scale, but very useful and practically applicable findings. If adopted in any of our certification pilots, verification could be through assigning a score based on the number of features present. Interesting observation in Gray et al with regards to financial feasibility of integration of features in the home environment: risk of loneliness and its attendant adverse effects is highest among older residents with lower SES, who tend to live in accommodation towards the lower end of the market (often rented). There is a table of factors contributing to higher loneliness and isolation in the study |
| SOC | 16 | Home environment offers adequate spatial provisions for pets, hobbies, socializing and storage | The home environment must offer adequate spatial provisions for pets, hobbies, socializing and storage. Where homes have multiple occupants, the home should be able to cater for the preferences of each occupant The broader spectrum of requirements is mentioned in Mackenzie et al (2015). Darab et al (2018) specifically mention pets. | _S_SOCIAL | _S.1_Social_activity | S.1.1_Ability_to_have_social_contacts_n_the_home | Mackenzie et al (2015) Darab, S., Hartman, Y., Holdsworth, L. (2018) | Mackenzie et al is rather an extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study. Re Darab et al, a note of caution is sounded in the study itself that the regional/rural context of the study population may shape the group's preferences differently than those of their metropolitan counterparts. |
| SOC | 17 | Home environment has spaces and design features that allow expression of family history | To contribute to Family bonding (a dimension of place attachment), the home environment must provide spaces and design features that allow for continuation of family past and continuation of family history The design features associated with these aspects found in the study were: Continuation of family past * Allowance of pets * Spending time with grandchildren Continuation of family history * Individual home display cases | _S_SOCIAL | _S.1_Social_activity | S.1.1_Ability_to_have_social_contacts_n_the_home | Lies, M., Kang, M., Sample, R. (2017) | Small-scale observational study, but well grounded in place making and place attachment theory. Exploratory in nature, and small scale, but very useful and practically applicable findings. If adopted in any of our certification pilots, verification could be through assigning a score based on the number of features present |
| SOC | 18 | The immediate environment of the home and the neighbourhood offer accessible opportunities for engagement with others in meaningful activity and social contacts | * Individual home display cases Gardner (2011) notes that this is essential to well-being and self-identity among older adults and quotes earlier study (Peace, Holland, and Kellaheer, 2006) that states: "No longer being able to go out independently is a critical stage in identity construction because, without the wider contexts that lie beyond the dwelling, the home itself becomes diminished as a source of identity construction. Continued capacity to engage with the other is represented by neighborhood in a way that immediate domicile cannot demonstrate or prove." In other words, neighbourhood level characteristics directly co-determine the fitness for purpose of the home environment Martin et al (2019) observe that, next to practical considerations on home modifications, size, costs and so on, major drivers of desire/willingness to move home proved to be "uncertainty about the ability to actively engage in the community and the fear of becoming socially isolated". By implication, these are requirements to impose on suitable home environments. "The more so as participants in the study also expressed concern that moving away from familiar surroundings would lead to emotional distress and/or social | _S_SOCIAL | _S.1.2_Proximity_to_activities_and_facilities | S.1.2_Proximity_to_activities_and_facilities | Gardner, P. (2011) Martin, D., Long, O., Kessler, L. (2019) | Gardner focuses primarily on the neighbourhood as a "place of aging", referring to older studies on the home as a "place of aging". Main interest of the study lies in its qualitative, in-depth approach to gain a better understanding of those social and physical elements of the neighbourhood that contribute to well-being. Martin et al is very much an exploratory, qualitative study, survey-based interesting take, as such: study examines motives for relocation among older adults to infer conditions for successful ageing in place. Older adults here defined as those over 60 years of age, so a fairly broad definition. Follow-up survey questions were put to respondents who had answered "no" or "unsure" to the question "Do you want to stay in your own home as you grow older?" |

| | | | | | | | | |
|-----|----|---|--|-----------|---------------------|---|---|--|
| SOC | 19 | The direct environment of the home offers suitable spaces for engagement in organized social and learning activities. | Where home environments are integrated into a larger building (apartment complex) or other form of complex (e.g. a retirement village or community living facility), the complex must have suitable spaces for the organisation of a suitable range of social activities. Such spaces must be near, and logically positioned of social spaces Where the homes are individual buildings, the "direct environment" may refer to a community centre or similar; for homes in apartment buildings/complexes this will usually refer to communal spaces within the complexes. Gray et al (2018) in their literature review mention a list of types of activities that come out of the literature as being beneficial. While it is hardly reasonable to require a complex to have separate spaces for each of these activities, the list could be used as a checklist to assess the suitability of such spaces as are available within the complex. The "ideal menu" of group activities emerging from the literature: * provision of 'something for everyone' in physical and hobby activities * a range of different forms of mental stimulation and physical exercise to suit various tastes * activities which will foster emotional support and informal contacts that develop into real friendship, addressing emotional loneliness * breaking the vicious circle which leads through loneliness to poorer health, and thus to reduced capacity to engage with others and make new friends (health promotion events and similar) * supporting the most frail and especially those with mobility problems to take part in community life * helping residents maintain links with the wider community, in particular links with other age groups and with healthier people * encouragement of internet use as an important gateway to the wider social environment * offering specialised help to those who are too frail or immobile to leave their homes, or who have become withdrawn due to bereavement or crisis leading to rupture of social networks Campbell (2015) finds that social spaces in facilities for communal independent living should be positioned within easy range (optimum: less than 82.5 feet (= 25,15 meters) from individual dwelling and along a logical travel path for daily activities. This positioning is positively associated with both appreciation and use of such spaces | _S_SOCIAL | _S1_Social_activity | S1.2_Proximity_to_activities_and_facilities | Kylén, M., Löfvist, C., Haak, M., Iwarsson, S. (2019) Gray et al (2018) Campbell, N. (2015) | Kylén et al is a qualitative study, but very well-defined with careful selection of respondents and well-designed interview and analysis protocols Gray et al has an interesting observation with regards to financial feasibility of integration of features in the home environment: risk of loneliness and its attendant adverse effects is highest among older residents with lower SES, who tend to live in accommodation towards the lower end of the market (often rented) There is a table of factors contributing to higher loneliness and isolation in the study Campbell is a well-designed study using an original conceptual framework (Successful Social Space Attribute Model) developed by the author in a previous study. Reasonably large number of respondents, but only one study-site |
| SOC | 20 | Home environment within short and accessible reach of shops and services | For emotional wellbeing and attachment to place, the home environment must be situated within short and accessible reach of shops and services Smith et al (2011) specifically mention 'walking distance' and note "that when a community is unable to provide these basic services and retail outlets, older people commonly feel discontent and their connections to the place can deteriorate because they are forced to travel elsewhere to meet those needs". Firdaus (2017) includes park/playground/library among the services required and notes that proximity of the dwelling to these facilities is positively associated with positive mental states, through association of these neighbourhood characteristics with recovery from mental fatigue, stress reduction and social cohesion. Kramer et al (2016) point to the social engagement role of shops and services. The study finds that high levels of satisfactions with facilities for engagement in social and other daily activities in subjects' current neighbourhood were associated with a strong intention to stay put in their current homes. Bates et al (2019) highlight the importance of affordable rental accommodation being situated within easy reach of shops and services. They point out a tendency for affordable accommodation to shift to the periphery, away from services, as areas are redeveloped and gentrified. As Kylén et al (2019) point out, proximity to shops and services is also a relevant requirement for people in the "younger old" demographic. The study looks specifically at the perception of home by younger old people (defined by the sample population as 67-70 years old), as literature suggests that these perceptions and attendant requirements are very different from those of the older old population. There is continuity between the groups, though, in terms of the NOpS associated. For both groups these centre around the home as a secure base, as a comforting environment, as a source of emotional attachment and as a starting point for engagement in social activities | _S_SOCIAL | _S1_Social_activity | S1.2_Proximity_to_activities_and_facilities | Mackenzie et al (2015) Smith, J., Cartledge, M. (2011) Firdaus, C. (2017) Kramer, C., Pfaffenbach, C. (2016) Bates, L., Wiles, J., Kearns, R., Coleman, T. (2019) Kylén, M., Löfvist, C., Haak, M., Iwarsson, S. (2019) Molinsky, J., Forsyth, A. (2018) Hilcoat-Nallatambay, S., Ogg, J. (2014) | Mackenzie et al is rather an extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study Smith et al is a fairly specific case study, with some issues as to applicability in Europe: the study looks at the rebuilding of a rural community in Kansas after a 2007 tornado. Nevertheless, an interesting article: it investigates which elements of the cultural landscape promote emotional attachment to place in retirees. It also highlights some tensions between sustainability ambitions and affordability of dwellings. Kramer et al is a well-designed study analysing a large body of material and taking into account different (sub)urban and socio-cultural settings. Interesting for its focus on the baby boom generation: predictive value for future demand Bates et al is a well-executed study (questionnaire and interview based, of course). Only drawback is the study population was quite specific (low-income residents of an island community in the Auckland, New Zealand metropolitan area). Study defines older renters as those over 55 years of age, which fits well with broad H4L scope Kylén et al is a qualitative study, but very well-defined with careful selection of respondents and well-designed interview and analysis protocols Although published in an academic journal, Molinsky et al is a position paper/white paper rather than a study Hilcoat-Nallatambay et al is explicitly presented as a challenge to the current consensus. |
| SOC | 21 | Meaningful destinations within walking distance | Informal carers need easy access to various services and amenities preferably at walking distance e.g. grocery stores and other shopping facilities, pharmacist and other primary care services, social connections, community services (incl work) | _S_SOCIAL | _S1_Social_activity | S1.2_Proximity_to_activities_and_facilities | Scharlach, A. (2017) | |
| SOC | 22 | The home should be situated in a neighbourhood that is perceived as safe by the home's occupants. | The study quotes evidence that living in an area that is perceived as "unsafe" has a negative impact on social activity and contributes to functional decline. Qualitative operational parameters that might be used in verification of the KPI include: * proximity to everyday services * strong social cohesion * sense of belonging/familiarity | _S_SOCIAL | _S1_Social_activity | S1.2_Proximity_to_activities_and_facilities | Berglund-Snodgrass, L., Nord, C. (2019) | Well executed case study, but quite small-scale, based on a comparative analysis at two ECH complexes. Study abandons traditional distinctions between inner and outer safety in favour of an approach in which these kinds of safety are considered as co-constitutive situational effects. The focus of the study is on Extra Care Housing. This is within H4L scope, as ECH is considered as a special type of ordinary housing (not as a "light" form of residential LTC facility) |
| SOC | 23 | Home within easy reach of accessible and affordable public and individualized transport services | WHO (2015) notes the importance of easy access, and proximity to affordable public transportation from home environment supporting access for example to social activities and other facilities. As ideas for indicators, WHO (2015) puts forward: Proportion of public transport services (incl. vehicles and stops) with designated places for older people or people who have disabilities. It refers to the ability of people with disabilities and older people to safely ride in a public transport vehicle in order to reach their destination Proportion of housing within walking distance (500 m) to a public transportation stop. Having an accessible stop is in favour of the older person, the informal carer, but also professional carers. NB: additional indicators would be needed to take into consideration the safety and quality of the route to the transportation stop. | _S_SOCIAL | _S1_Social_activity | S1.2_Proximity_to_activities_and_facilities | WHO (2015) | |
| SOC | 24 | Housing programmes and resources | availability of a resource listing age-friendly home maintenance, support and care-giving services. | _S_SOCIAL | _S1_Social_activity | S1.2_Proximity_to_activities_and_facilities | Orpana, H. et al (2016) | |
| SOC | 25 | The home environment and immediate neighbourhood support social participation/ preventing social exclusion. | This includes proximity to and accessibility of community activities, and opportunities for social engagement, and contact with significant others Home environment and immediate neighbourhood provides for a supportive physical environment that promotes mobility and does provides access to suitable socially-oriented activities for both older adults and their carer to attend together e.g. senior centres, dementia cafes, etc. Home environment provides for a supportive physical and social infrastructure that facilitates opportunities for meaningful interpersonal connections. | _S_SOCIAL | _S1_Social_activity | S1.2_Proximity_to_activities_and_facilities | Levasseur, M. et al (2015) Scharlach, A. et al (2017) Mackenzie et al (2015) | Mackenzie et al is rather an extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study |
| SOC | 26 | Home environment provides easy and affordable access to specific "care" support needs | Home environment provides easy and remote access to supportive services that specifically recognise and support the work of informal carers such as respite care, psychosocial services, peer support, carer allowances | _S_SOCIAL | _S1_Social_activity | S1.2_Proximity_to_activities_and_facilities | Pföhner, M. et al (2019) | |
| SOC | 27 | Home environment supports sense of autonomy and purpose of informal carers | Home environment should be a place that promotes the wellbeing of informal carers by promoting their sense of autonomy and sense of purpose. There could potentially be several indicators, notably indicators that facilitate and promote access to social connections and social activities in and outside the home (both virtual and actual) | _S_SOCIAL | _S1_Social_activity | S1.2_Proximity_to_activities_and_facilities | Maquire, R. et al (2019) | |
| SOC | 28 | Home's neighbourhood offers opportunities for engagement in socio-cultural-religious and/or life-long learning activities | Proportion of older adults among all reported visitors to local cultural facilities and events and/or Proportion of older people who were enrolled in education or training, either formal or non-formal, in the past year. | _S_SOCIAL | _S1_Social_activity | S1.2_Proximity_to_activities_and_facilities | WHO (2015) | |
| SOC | 29 | Dwelling's immediate environment offers opportunities for informal social interaction | The dwelling's immediate environment offers opportunities for informal social interaction | _S_SOCIAL | _S1_Social_activity | S1.3_Ability_to_find_social_contacts_outside_the_home | Lager, D., van Hoven, B., Hulgen, P.P.P. (2013) | Study well-grounded in literature and theory, but in itself small-scale, qualitative and case study based |
| SOC | 30 | Home environment and neighbourhood support social participation/help prevent social exclusion | Home environment and immediate neighbourhood provides for a supportive physical environment that promotes mobility and does provides access to suitable socially-oriented activities for both older adults and their carer to attend together e.g. senior centres, dementia cafes, etc. Home environment provides for a supportive physical and social infrastructure that facilitates opportunities for meaningful interpersonal connections. | _S_SOCIAL | _S1_Social_activity | S1.3_Ability_to_find_social_contacts_outside_the_home | Levasseur, M. et al (2015) Scharlach, A. (2017) | |

| | | | | | | | | |
|-----|----|--|--|-----------|---------------------|--|---|---|
| SOC | 31 | The home's immediate environment offers opportunities for engagement in (organized) social activities | To tackle the risk of loneliness among occupants, the home's immediate environment must offer opportunities for engagement in (organized) social activities Where home environments are integrated into a larger building (apartment complex) or other form of complex (e.g. a retirement village or community living facility), the complex must have suitable spaces for the organisation of a suitable range of social activities The literature review in Gray et al (2018) mentions quite a number of studies into the correlation between loneliness and isolation (two different concepts) on the one hand and engagement in social activities and relationships with neighbours, friends and relatives on the other. It also mentions a list of types of activities that come out of the literature as being beneficial. While it is hardly reasonable to require a complex to have separate spaces for each of these activities, the list could be used as a checklist to assess the suitability of such spaces as are available within the complex. The 'ideal menu' of group activities emerging from the literature: * provision of 'something for everyone' in physical and hobby activities * a range of different forms of mental stimulation and physical exercise to suit various tastes * activities which will foster emotional support and informal contacts that develop into real friendship, addressing emotional loneliness * breaking the vicious circle which leads through loneliness to poorer health, and thus to reduced capacity to engage with others and make new friends (health promotion events and similar) * supporting the most frail and especially those with mobility problems to take part in community life * helping residents maintain links with the wider community, in particular links with other age groups and with healthier people * encouragement of internet use as an important gateway to the wider social environment * offering specialised help to those whose are too frail or immobile to leave their homes, or who have become withdrawn due to bereavement or crisis leading to rupture of social networks | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Gray et al (2018) | Literature review looking at strategies to avoid loneliness in occupants of retirement housing, focusing primarily on the value of organized social activities. Retirement housing is within scope for H4L: it concerns sheltered housing for the over 55 or 60; specific to the UK; some retirement housing offers on-site services, but residential care homes are excluded from the definition. Organized social activities themselves are out of scope for H4L (we're not certifying services), but evaluation could be on the basis of whether the home is situated in an environment that offers the opportunity to engage in social activities; and for apartment buildings and complexes (the literature review specifically mentions retirement villages), whether appropriate physical spaces for social activity are available in the building. Interesting observation in the study with regards to financial feasibility of integration of features in the home environment: risk of loneliness and its attendant adverse effects is highest among older residents with lower SES, who tend to live in accommodation towards the lower end of the market (often rented). There is a table of factors contributing to higher loneliness and isolation in the study. |
| SOC | 32 | Home's neighbourhood offers variety of spaces for socializing with other community dwellers | The home should be situated in a neighbourhood that offers a variety of spaces suitable for socializing with other community dwellers. These spaces should be within walking distance (accessible routes). They should take the form of appropriate 'third place' destinations. Smith et al (2011) note that various kinds of spaces (indoor spaces generally) are used as socializing spaces by older adults (often impromptu): shops, restaurants, churches... Gardner (2011) introduces the concept of 'third places', using a definition from Oldenburg (1989) which says they are places "that are located outside of the home (first place) and work (second place) and share several essential features: they are on neutral ground, they act as 'levelers', conversation is the main activity, they are accessible, 'regulars' spend time in them, they are physically plain and unassuming, the mood is playful, and people feel like they are a 'home away from home'." Notable 'third places' identified by the subjects in Gardner (2011) were public parks, certain local businesses (with a strong preference for small single-purpose shops), community | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Smith, J., Cartledge, M. (2011) Gardner, P. (2011) | Smith et al is a fairly specific case study, with some issues as to applicability in Europe: the study looks at the rebuilding of a rural community in Kansas after a 2007 tornado. Nevertheless, an interesting article: it investigates which elements of the cultural landscape promote emotional attachment to place in retirees. It also highlights some tensions between sustainability ambitions and affordability of dwellings. Difficult to gauge the quality of evidence: it is such a one-off situation. Apparently, the community in question (because it needed to rebuild almost entirely, turned into a living lab for all kinds of research. Gardner focuses primarily on the neighbourhood as a "place of aging", referring to older studies on the home as a "place of aging". Interesting because it employs a qualitative, in-depth approach to gain a better understanding of those social and physical elements of the neighbourhood that contribute to well-being. |
| SOC | 33 | Home's immediate environment has sitting spaces to enable social interaction. | The home's immediate environment should have sitting spaces to enable social interaction. For homes inside apartment buildings or complexes, this space should be situated within the building/complex KPI from the literature review section of the study. Verification of the criterion can be done in conjunction with verification of any Outdoor access criteria we include for the home's immediate environment. | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | van Hees et al (2017) | Study uses photovoice methodology to elicit responses and opinions from a study population of 14 professionals and 18 older people. Haven't encountered this methodology much before, so hard to gauge the quality of evidence |
| SOC | 34 | The home and its environment (up to neighbourhood/village level) offer accessible opportunities for engagement in meaningful activity and social contacts. | Next to practical considerations on home modifications, size, costs and so on, major drivers of desire/willingness to move home proved to be "uncertainty about the ability to actively engage in the community and the fear of becoming socially isolated". By implication, these are requirements to impose on suitable home environments. "The more so as participants in Martin et al (2019) also expressed concern that moving away from familiar surroundings would lead to emotional distress and/or social isolation. Darab et al (2018) point to the preference expressed by their study subjects for co-housing arrangements. This seems at odds with the great value placed on privacy and autonomy by the study group, but shows that in addition there is a deep need to satisfy social interaction needs. | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Martin, D., Long, O., Kessler, L. (2019) Darab, S., Hartman, V., Holdsworth, L. (2018) | Martin et al is very much an exploratory, qualitative study, survey-based Interesting take, as such: study examines motives for relocation among older adults to infer conditions for successful ageing in place. Older adults here defined as those over 60 years of age, so a fairly broad definition. Follow-up survey questions were put to respondents who had answered "not" or "unsure" to the question "Do you want to stay in your own home as you grow older?" For Darab et al, a note of caution is sounded in the study itself that the regional/furoral context of the study population may shape the group's preferences differently than those of their metropolitan counterparts |
| SOC | 35 | Home enables social dignity by providing access to seven essential conditions | Social dignity, a construct based on the taxonomy constructed by Nora Jacobson (2007, 2009) is generated in the interactions between and amongst individuals and groups and comes in two types: Dignity-of-Self and Dignity-in-Relation. The seven essential conditions are: * Meaning, self and self-expression * Safety and security * Ability to sustain meaningful relationships * Access to community and civic life * Participation in school, work or leisure * Respectful care relationships * Control, flexibility and spontaneity | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Gibson, B.E. et al (2012) | Extent to which essential conditions can be evaluated and how varies. Important publication! Piquant, too, as its primary focus is on younger adults (19-55) with mobility disabilities, and their home environment needs are presented as underaddressed relative to older persons. This seems a false dichotomy, or at any rate a too facile assumption that older people's needs were actually being catered for (which our project suggests cannot have been the case) |
| SOC | 36 | The home environment allows free choice in manner and level of social engagement | The home environment must offer occupants free choice in the manner and level of social engagement entered upon (at the scale levels relevant for H4L) Study gives examples of another balancing act: "wanting to remain on good terms with a neighbour for mutual reassurance, but at the same time not wanting to be forced into false companionship...keeping the children close, but not so close that authority and control are lost" | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Ewart, I., Luck, R. (2013) | An interesting innovative approach in this study is that it takes account of and tries to itemize a fundamental shift in the perception of home that occurs as people age, and encounter age-related issues: the home loses its significance "as a personal statement, or a reflection of identity, and becomes more important as a base for planning activities outside the immediate confines of the house." The home as somewhere you leave, and not only somewhere to reside. |
| SOC | 37 | Home accommodates gendered differences in activity preferences | Preferences in activities to achieve self-fulfilment and experience positive emotions differ markedly between genders, and in fact the specifically feminine character of spaces and opportunities for social engagement can be a hindrance to engagement in social activity by males. | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Saxsmith, I. et al (2014) | Interesting study, part of the ENABLE-AGE project. Limited source of KPIs, but definitely worth another look as a source of NnPs |
| SOC | 38 | Home is situated in direct proximity to and easy reach of likeminded others | To support social engagement and contribute to feelings of self-worth and purpose, the home should be situated in direct proximity to and easy reach of likeminded others Kylén et al (2019) point out that the home and its direct environment should facilitate social engagement and mutual help and support with others, primarily neighbours. Though these may be socially and demographically diverse, special worth is attached by respondents to the ability to engage meaningfully with peers. Lager et al (2013) point out that when a dwelling is situated in a neighbourhood where likeminded others are also domiciled, this contributes both to social activity and to personal wellbeing, as well as being associated with a sense of agency and emotional attachment to the living environment. Kramer et al (2016) find that "older people who are in touch with their children on a daily basis (and probably live in close proximity) less often have plans of moving upon retirement". The study specifically looks at willingness and motives to move home among German people of approaching retirement age (roughly, the baby boom generation) as well as their reasons for what the study calls "reasons for residential persistence". | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Kylén, M., Löfvist, C., Haak, M., Iwarsson, S. (2019) Lager, D., van Hoven, B., Hügen, P.P.P. (2013) Kramer, C., Pfaffenbach, C. (2016) | Kylén et al is a qualitative study, but very well-defined with careful selection of respondents and well-designed interview and analysis protocols. Lager et al is well-grounded in literature and theory, but in itself small-scale, qualitative and case study based. Kramer et al is a well-designed study analysing a large body of material and taking into account different (sub)urban and socio-cultural settings. Interesting for its focus on the baby boom generation: predictive value for future demand. |

| | | | | | | | | |
|-----|----|--|---|-----------|---------------------|--|---|---|
| SOC | 39 | Home's immediate environment supports continuation of existing social activities, networks and contexts | The home's immediate environment should offer opportunities for continuation of existing social activities, networks and contexts, or at any rate the opportunity to establish/engage in contacts/activities that represent conceptual continuity within the lived experience of the occupant The criterion is primarily relevant for home environment in an extra care and/or community living setting. The study found a marked difference in perceived safety between the ECH location with an architectural and spatial design that allowed residents to continue activity and social engagement patterns from previous life phases, and the location where the architectural/spatial design required residents to reconstruct their social identities | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Berglund-Snodgrass, L., Nord, C. (2019) | Well executed case study, but quite small-scale, based on a comparative analysis at two ECH complexes. Study abandons traditional distinctions between inner and outer safety in favour of an approach in which these kinds of safety are considered as co-constitutive situational effects. The focus of the study is on Extra Care Housing. This is within H4L scope, as ECH is considered as a special type of ordinary housing (not as a "light" form of residential LTC facility) |
| SOC | 40 | The social living environment of older people from migrant communities, is sensitive to their specific socio-cultural needs and preferences, and supports trust building and development of social capital | Very hard to see how we can make this verifiable: perhaps through qualitative evaluation of the (proposed) living environment by target group representatives. Nevertheless, an important point made by the study: simply creating ethnically homogeneous living communities is not sufficient to support social connectivity, and in fact may have an adverse effect if such living arrangements are experienced as (socially) unsafe and/or adversarial by occupants | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Luo, H. (2015) | Study's main interest is in examining the role of the housing environment in building and strengthening social capital for older immigrants. Applicability of its findings may be limited by the specificity of its study group (older Chinese migrants in Canada); on the other hand, ageing immigrant populations are a feature in many EU MSS. Fairly small-scale study (though part of a larger programme), conducted using a focus group approach |
| SOC | 41 | Appropriate social contact opportunities and services available within reachable distance of the home | Described in the article as elements of a home's neighbourhood that contribute towards the establishment of a supportive living environment | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Molinsky, J., Forsyth, A. (2018) | |
| SOC | 42 | The home should be situated in a neighbourhood that is perceived as safe by the home's occupants. | This can be roughly equated to a neighbourhood that scores above average on security and solidarity themes, such as crime rates against older people. Berglund-Snodgrass et al (2019) quote evidence that living in an area that is perceived as "unsafe" has a negative impact on social activity and contributes to functional decline. Qualitative operational parameters that might be used in verification of the KPI include: * proximity to everyday services * strong social cohesion * sense of belonging/familiarity WHO (2015) argues that perceived safety can further promote people's wellbeing and inclusion in society by reducing their anxiety about leaving home to engage in physical exercise and social activities. Cramm et al (2013) measured wellbeing using the 15-item version of the Social Production Function Instrument for the Level of Well-being (SPF-L). The scale measures both physical and social wellbeing. Solidarity was measured with 10 items, each scored on a five-point scale. The scale was based on a theory common in work science to measure solidarity in employee teams. Security was assessed using four items, each scored on a four-point scale Study outcomes show that security and solidarity scores are each associated with higher levels of wellbeing among older people; moreover the results suggest a multiplicative effect from the combination of these attributes, and a reinforcing effect from higher scores on security on the effect that a higher level of solidarity has on wellbeing. In most cases, verification could make use of municipal data. | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Berglund-Snodgrass, L., Nord, C. (2019) WHO (2015) Gamm, J., Nieboer, A. (2013) | Berglund-Snodgrass et al is a well executed case study, but quite small-scale, based on a comparative analysis at two ECH complexes. Study abandons traditional distinctions between inner and outer safety in favour of an approach in which these kinds of safety are considered as co-constitutive situational effects. The focus of the study is on Extra Care Housing. This is within H4L scope, as ECH is considered as a special type of ordinary housing (not as a "light" form of residential LTC facility) WHO refers to the World Health Organization's publication Measuring the Age-Friendliness of Cities - A Guide to Using Core Indicators. Cramm et al is a study looking into the effect of neighbourhood attributes solidarity and security on well-being of community-dwelling older people in the Netherlands, as well as into the combined effect on wellbeing of these attributes. Looks a fairly study analysis, based on a sample of 869 older adults (defined as 70+) living in 92 neighbourhoods in the city of Rotterdam. |
| SOC | 43 | The neighbourhood offers opportunities for social interaction, within range of the home and by accessible routes. | This should include a choice of spaces within walking distance. This is especially important for people with dementia. Engel et al (2016) present an interesting argument by pointing out: * "on the one hand, that results from the current study and other studies indicate that it is primarily the social environment people find themselves in that contributes to QoL, with the built environment not or almost not contributing directly; * nevertheless, social interactions take place within the neighbourhood built environment. The built environment can, therefore, be seen as a facilitator or barrier for the social environment". This observation can be seen as support to the Homes4Life decision to give precedence to social aspects of the neighbourhood over outdoor access features. A significant observation in van Hees et al (2017): although both professionals and older people identified the same spots of spaces within the neighbourhood as important for social interaction and place attachment, the professionals did so from a purely functional perspective, while older people's selections were driven by emotional attachment to places, the significance of certain spaces in their own life history and so on. Gabriel et al (2015) room in on the significance for people with dementia | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Engel, L. et al (2016) van Hees et al (2017) Gabriel, M., Faulkner, D., Stirling, C. (2015) | Engel et al should be used with some caution, as study only considers the built environment as being the outdoor neighbourhood environment (urban design, land use and transportation system), not the home itself. Interesting study, though: it examines the association between the built environment and social cohesion with QoL community-dwelling older adults (age over 65, sample size 160 people) on low income in the metropolitan area of Vancouver. As for evidence quality: the authors themselves stress that results should be considered as hypothesis-generating and need confirmation in a larger longitudinal study. Van Hees et al uses photovoice methodology to elicit responses and opinions from a study population of 14 professionals and 18 older people. Gabriel et al is the final report of the Australian AHURI programme |
| SOC | 44 | Green spaces present in home environment | The living environment provides for high quality green spaces which support social contacts between neighbors and strengthens communities for the ageing population. | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Kemperman, A., Timmermans, H. (2014) | |
| SOC | 45 | Home is situated in a walkable neighbourhood with accessible public spaces and buildings | According to WHO (2015) an indicator is the proportion of streets in the neighbourhood that have pedestrian paths which meet locally accepted standards. Also relevant according to WHO (2015): existence of sidewalks and bicycle lanes that are in good condition, frequent and safe pedestrian crossing as well as public seating options, median islands, etc. | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | WHO (2015) Mettie Institute / Stanford Center on Longevity (2015) | |
| SOC | 46 | Home environment provides spaces and design features conducive to spontaneous, proposed and organized interaction | To contribute to Friend bonding (dimension of place attachment), the home environment must provide spaces and design features conducive to spontaneous, proposed and organized interaction. In the immediate environment of the home, this includes the presence of multiple "third place thresholds" Lies et al (2017) uses a five-dimensions model of place attachment developed by Raymond et al (2010), which breaks this down into: * place dependence * place identity * nature bonding * friend bonding * family bonding The present study examines the relative importance of these five dimensions and explores which design features of the home environment contribute to each dimension. The study took place among residents of a senior co-housing community in the US Midwest. Despite a number of communal facilities on-site, this concerns independent living and is thus in scope for H4L. The relative importance of the five dimensions in decreasing order of importance: * Friend bonding * Nature bonding * Place dependence * Place identity * Family bonding The design features associated with these types of interaction found in the study were: Spontaneous interaction * Individual home front porch * Nodes and Sidewalk System * Clustered mailboxes * Clustered parking. Proposed Interaction: * Common House Game Room * Common House Hearth Room Organized interaction * Common House Dining Room * Common House Patio * Individual Home Great Room | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Lies, M., Kang, M., Sample, R. (2017) Gardner, P. (2011) | Lies et al is a small-scale observational study, but well grounded in place making and place attachment theory. Exploratory in nature, and small scale, but very useful and practically applicable findings. If adopted in any of our certification pilots, verification could be through assigning a score based on the number of features present. Gardner focuses primarily on the neighbourhood as a "place of aging", referring to older studies on the home as a "place of aging". Interesting because it employs a qualitative, in-depth approach to gain a better understanding of those social and physical elements of the neighbourhood that contribute to well being. |
| SOC | 47 | Home's neighbourhood supports self-organization of social interaction | The dwelling is situated in a neighbourhood that offers older adults opportunities for co-creation and self-organization of social interaction. This contributes to sense of agency and emotional attachment to living environment, as well as stimulating meaningful interaction with others | _S_SOCIAL | _S1_Social_activity | S.1.3_Ability_to_find_social_contacts_outside_the_home | Lager, D., van Hoven, B., Huijen, P.P.P. (2013) | Study well-grounded in literature and theory, but in itself small-scale, qualitative and case study based |

| | | | | | | | | |
|-----|----|--|--|-----------|---------------------|---|--|---|
| SOC | 48 | Availability of places with spiritual significance within accessible walking distance | For many older adults, the availability of places with spiritual significance within walking distance (accessible routes) of the home is important to support sense of identity and emotional attachment. Churches, in this study, but the type of space may of course vary | _S_SOCIAL | _S1_Social_activity | S1.3_Ability_to_find_social_contacts_outside_the_home | Smith, J., Cartledge, M. (2011) | Fairly specific case study, with some issues as to applicability in Europe: the study looks at the rebuilding of a rural community in Kansas after a 2007 tornado. Nevertheless, an interesting article: it investigates which elements of the cultural landscape promote emotional attachment to place in retirees. It also highlights some tensions between sustainability ambitions and affordability of dwellings. Difficult to gauge the quality of evidence: it is such a one-off situation. Apparently, the community in question (because it needed to rebuild almost entirely), turned into a living lab for all kinds of research. |
| SOC | 49 | Home is close to established social networks | The home should be situated so that proximity to established social networks is ensured. This can include networks for practical issues such as maintenance. KPI deduced on the basis of findings in Kramer et al (2016) that high levels of satisfaction of residents with these aspects of their current neighbourhood are associated with a strong intention to stay put in their current homes. Coleman et al (2016) for social networks for practical issues. Their study indicates that where older people have the opportunity to manage maintenance and engage in maintenance activities in interdependent groups, rather than having to engage with standardized and/or external services, home maintenance can actually function as a social facilitation agent. | _S_SOCIAL | _S1_Social_activity | S1.3_Ability_to_find_social_contacts_outside_the_home | Kramer, C., Pfaffenbach, C. (2016) Coleman, T., Kearns, R., Wiles, J. (2016) | Kramer et al is a well-designed study analysing a large body of material and taking into account different (sub)urban and socio-cultural settings. Interesting for its focus on the baby boom generation: predictive value for future demand? Coleman is likewise well-executed. Only drawback is the study population was quite specific (island community in the Auckland, New Zealand metropolitan area). Study subjects lived independently and were between 65 and 94 years of age. |
| SOC | 50 | Home is situated in an area that facilitates establishment of reciprocal social relationships with e.g. neighbours | This contributes to a sense of safety and security and supporting the emergence of a sense of social cohesion. Fernandez-Carro et al (2019) observe that the home environment provides reassurance and sense of safety through existence of common and shared spaces e.g. common room for meal taking, communal laundry, shared gardens and patios. Berglund-Snodgrass et al (2019) link this aspect on the one hand to the provision of spaces that offer conceptual continuity with occupants' previous lives, with spatial / architectural characteristics like subjective safety and non-institutionalized feel being referenced. | _S_SOCIAL | _S1_Social_activity | S1.3_Ability_to_find_social_contacts_outside_the_home | Rowles, G., Bernard, M. (2013) Fernandez-Carro, C., Vlachantoni, A. (2019) Berglund-Snodgrass, L., Nord, C. (2019) | Rowles et al is primarily a scene setting essay, intended as the opener and scene setter for a book featuring explorations of various aspects of environmental gerontology. Berglund-Snodgrass et al is a well-executed case study, but quite small-scale, based on a comparative analysis at two ECH complexes. Study abandons traditional distinctions between inner and outer safety in favour of an approach in which these kinds of safety are considered as co-constitutive situational effects. The focus of the study is on Extra Care Housing. This is within H&L scope, as ECH is considered as a special type of ordinary housing (not as a "light" form of residential LTC facility). |
| SOC | 51 | The home environment gives occupants virtual access to those in their social group | The home environment must enable occupants to access those in their social group, either being able to visit locally or virtually, or allowing access to the home for people who visit. This KPI derives from one of the studies central concepts, namely that as people grow more housebound, the significance of the home shifts from being a safe haven and place of attachment, to a place from which escape is sought and which must function as a platform for engagement with the world beyond the front door. In terms of NoPs, this means that the outward-focused engagement role of the house takes on a more prominent role as people become more housebound. It also implies that people will have difficulties making accurate assessment of their own future needs and opportunities. To tackle the risk of loneliness among occupants, the home must offer physical and/or virtual opportunities for social engagement with children, friends and relatives. Though studies differ in their findings on the relative importance of contacts with relatives as opposed to friends and acquaintances, most studies do agree that older residents who are in frequent contacts with these others experience less loneliness and a higher level of well-being. | _S_SOCIAL | _S1_Social_activity | S1.4_Online_connectivity | Ewart, I., Luck, R. (2013) | An interesting innovative approach in this study is that it takes account of and tries to remedy a fundamental shift in the perception of home that occurs as people age, and encounter age-related issues: the home loses its significance "as a personal statement, or a reflection of identity, and becomes more important as a base for planning activities outside the immediate confines of the house." The home as somewhere you leave, and not only somewhere to reside. |
| SOC | 52 | Home offers physical and/or virtual opportunities for social engagement | The home environment must enable occupants to access those in their social group, either being able to visit locally or virtually, or allowing access to the home for people who visit. This KPI derives from one of the studies central concepts, namely that as people grow more housebound, the significance of the home shifts from being a safe haven and place of attachment, to a place from which escape is sought and which must function as a platform for engagement with the world beyond the front door. In terms of NoPs, this means that the outward-focused engagement role of the house takes on a more prominent role as people become more housebound. It also implies that people will have difficulties making accurate assessment of their own future needs and opportunities. To tackle the risk of loneliness among occupants, the home must offer physical and/or virtual opportunities for social engagement with children, friends and relatives. Though studies differ in their findings on the relative importance of contacts with relatives as opposed to friends and acquaintances, most studies do agree that older residents who are in frequent contacts with these others experience less loneliness and a higher level of well-being. | _S_SOCIAL | _S1_Social_activity | S1.4_Online_connectivity | Gray et al (2018) | Interesting observation in the study with regards to financial feasibility of integration of features in the home environment: risk of loneliness and its attendant adverse effects is highest among older residents with lower SES, who tend to live in accommodation towards the lower end of the market (often rented). There is a table of factors contributing to higher loneliness and isolation in the study. |
| SOC | 53 | Home environment supports sense of autonomy and purpose of informal carers | Home environment should be a place that promotes the wellbeing of informal carers by promoting their sense of autonomy and sense of purpose. There could potentially be several indicators, notably indicators that facilitate and promote access to social connections and social activities in and outside the home (both virtual and actual). | _S_SOCIAL | _S1_Social_activity | S1.4_Online_connectivity | Maquire, R. et al (2019) | |
| SOC | 54 | Information and support needs of carers are easily accessible and understandable, and include personalised tailored support services or tools | Home allows for home-bound carers to access relevant web-based information (community services, information needs, support needs) and to receive primary care services in the home. Additionally, home environment provides access to community services that are able to provide easily accessible and tailored support through a personalised assessment of needs of the informal carers. | _S_SOCIAL | _S1_Social_activity | S1.4_Online_connectivity | Röthner, M. et al (2019) Walker, J. et al (2017) Greenwood, N. et al (2019) Lefranc, A. et al (2017) | |
| SOC | 55 | Monitoring and care platforms deployed in the home environment of people living with dementia incorporate in their design the five key concern areas / themes | The study suggests that in developing platforms for monitoring / intervention aimed at emotional wellbeing, a participatory design strategy is required which should take into account five key themes: Communication; isolation; Frustration; Carer challenges; interventions. | _S_SOCIAL | _S1_Social_activity | S1.4_Online_connectivity | Mulvénna, M. et al (2017) | Sympathetic study, especially given its ICT-findings, but very small scale and anecdotal set-up |
| SOC | 56 | The home and any assistive devices and monitoring systems deployed in it, are designed to allow occupants the opportunity to shape and alter their daily routines both in the short term and as needs/interests change | | _S_SOCIAL | _S1_Social_activity | S1.4_Online_connectivity | Mackenzie et al (2015) | Rather an extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study |
| SOC | 57 | The home environment enables the use of social technology software and systems to support occupants in fulfilling their social needs. | The article looks into the social needs of older people, the resources used to fulfill them and the relation of non-fulfillment to loneliness and isolation. Social technology is one of four resources, of which the other three are currently more important: relationships with other people, participating in activities and personal circumstances. The relatively minor role that social technology plays seems to be due to unfamiliarity and distrust, largely through lack of habituation in earlier life. It is to be expected that future generations of older occupants will attach more importance to the accessibility of social technology from within the home environment. For now, the KPI is mainly one of "readiness". Interesting point re NoPs: the article demonstrates that the social needs of older people are congruent with those in earlier life. In other words, social needs don't change, but fulfillment patterns do as resources people can call on become scarce. A finding at odds with some other models, that suppose social interests actually change with ageing. | _S_SOCIAL | _S1_Social_activity | S1.4_Online_connectivity | ten Bruggencate, T., Luyck, K., Sturm, J. (2019) | Qualitative study, well-grounded in literature but rather small-scale in execution |
| SOC | 58 | The home provides affordable internet access | Proportion of household with affordable internet access at home. | _S_SOCIAL | _S1_Social_activity | S1.4_Online_connectivity | WHO (2015) | |
| SOC | 59 | Meaningful destinations within walking distance | Informal carers need easy access to various services and amenities preferably at walking distance e.g. grocery stores and other shopping facilities, pharmacist and other primary care services, social connections, community services incl work. | _S_SOCIAL | _S1_Social_activity | S2.2_Connection_to_place_of_employment | Scharlach, A. (2017) | |
| SOC | 60 | Home employment workers can easily and legally be accessed | Home environment provides visible and clear information concerning family and home employment options. | _S_SOCIAL | _S2_Employment | S2.1_Suitability_of_the_home_as_a_place_of_work | EFPE (2019) | |
| SOC | 61 | The home supports informal carers' work-life-care balance | Home environment is conducive (ICT ready) and allows cares to combine work with care responsibilities e.g. can work from home (ICT and fast wifi connexion) or mean duration of commuting time (one-way) for working carers is less than 30 mins | _S_SOCIAL | _S2_Employment | S2.1_Suitability_of_the_home_as_a_place_of_work | van der Lippe, T., Lippényi, Z. (2018) Eurostat (2017) | |
| SOC | 62 | The home environment offers opportunities for engagement in volunteer activity | Proportion of older people in local volunteer registers. | _S_SOCIAL | _S2_Employment | S2.1_Suitability_of_the_home_as_a_place_of_work | WHO (2015) | |
| SOC | 63 | Housing is affordable for informal carers | Housing costs needs to be reasonable and affordable for informal carers (who often need to reduce working time, incl OPP): Best options to avoid housing cost overburden is to live in: -owner occupied housing with no more mortgage -have possibility to receive housing allowances -Possibility to relocate to public rental housing in the same community e.g. with secure and affordable tenures; | _S_SOCIAL | _S2_Employment | S2.2_Connection_to_place_of_employment | Eurostat (2019b) Eurostat (2017b) Glendinning, C. et al (2009) Pittini, A. (2012) | |
| SOC | 64 | Home environment offers opportunities for paid employment | Proportion of older people who are currently unemployed. Primarily relevant at neighbourhood level (and above, but these larger scales are out of scope for Homes4Life) | _S_SOCIAL | _S2_Employment | S2.2_Connection_to_place_of_employment | WHO (2015) | Bit of mental agility required to frame this as KPI. But I suppose neighbourhood unemployment figures say something about the extent to which an older person or informal carer can find paid employment that can be accessed from the home. |
| SOC | 65 | The home supports informal carers' work-life-care balance | Home environment is conducive (ICT ready) and allows cares to combine work with care responsibilities e.g. can work from home (ICT and fast wifi connexion) or mean duration of commuting time (one-way) for working carers is less than 30 mins | _S_SOCIAL | _S2_Employment | S2.2_Connection_to_place_of_employment | van der Lippe, T., Lippényi, Z. (2018) Eurostat (2017b) | |

| | | | | | | | |
|-----|----|---|---|-----------|-----------------|---|------------|
| SOC | 66 | Availability of accessible transportation options | WHO (2015) lists as indicators the presence of accessible and affordable public transportation (e.g., bus, light rail, subway) and/or alternative (individualised) transportation service for people with mobility issues. And also points to the proportion of public transport services (incl. vehicles and stops) with designated places for older people or people who have disabilities. It refers to the ability of people with disabilities and older people to safely ride in a public transport vehicle in order to reach their destination. Proportion of housing within walking distance (500 m) to a public transportation stop. Having an accessible stop is in favour of the older person, the informal carer, but also professional carers. NB: Additional indicators would be needed to take into consideration the safety and quality of the route to the transportation stop. | _5_SOCIAL | _5.2_Employment | 5.2.2_Connection_to_place_of_employment | WHO (2015) |
|-----|----|---|---|-----------|-----------------|---|------------|

| Identification | | Criterion | Description | Taxonomy cluster | | | Suitability | | | Source data | Notes |
|----------------|--------|---|--|------------------|--------------------|-------------------------------|-------------|------------------------------|--|--|-------|
| Cluster | Number | Proposed title | | KPI Cluster | Category | Subcategory | Verifiable | If yes, type of verification | Source | Quality and approach study | |
| ECN | 1 | Acceptable earn-back time for investments in age-friendly housing | Refers to the time required to recoup the funds expended in the investment of an AFI. Buildings Performance Institute Europe (2011) note "Payback expectations/Investment horizons: Even though many energy savings measures are financially rational in that they have a positive Net Present Value (NPV) or a high Internal Rate of Return (IRR), the time taken for the initial outlay to be recouped is a major barrier." Vanstraelen, L. et al (2015) observe that "Currently investors act on energy efficiency measures in buildings with short or medium pay back periods of less than 10 years, leading to energy efficiency of less than 30% savings. However, European targets for 2050 require energy savings of up to 80% in buildings, requiring investments with a much longer payback period, ranging from 20 to 40 years." Finally, Artola, L. et al (2016) find that "the (high) upfront costs of renovation and the long payback for some measures are probably the most important barriers found in literature." | _5_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | | | Buildings Performance Institute Europe (2011) Vanstraelen, L. et al (2015) Artola, L. et al (2016) | | |
| ECN | 2 | Age-friendly homes must be affordable to all. | According to Firdaus (2017), financial dependency is negatively associated with mental health. This is specifically so where there is financial dependency for housing arrangements. Molinsky et al (2018), quote a figure of 30 percent of income as being "a generally accepted indicator of housing unaffordability" WHO (2015) and Kano et al (2018) confirm this 30% figure and note that housing costs should be taken to include renting costs, mortgage payment, and repair and maintenance costs. Bates et al (2019) point out issues of precarity and resilience under adversity among low-income older renters. It shows that and how housing precarity negatively affects residents' physical, social and emotional wellbeing. The KPIs are formulated in terms of strategies to avoid these precarities. Note that the current exercise looks only at Emotional, Social and Economic clusters; the study also points out negative effects of precariousness in Physical and Outdoor access aspects of the home. EUROSTAT speaks of 'housing cost overburden rate', which represents the percentage of the population (so this varies per country) living in a household where total housing costs (net of housing allowances) represent more than 40% of the total disposable household income. By the same token, an age-friendly home is not a financial burden when the housing costs for an average older single-person or multi-person household are less than 40% of the average income/(state)pension in a particular country. In verification of the KPI, the 30% figure could be taken as optimum performance, the 40% threshold as the minimum standard to be achieved. | _5_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | Yes | Quantitative | Firdaus, G. (2017) Molinsky, J., Feysyrb, A. (2018) Bates, L. Wiles, J., Kearns, R., Coleman, T. (2019) WHO (2015) Kano, M. et al (2018) FEANTS (2019) | Although published in an academic journal, Molinsky et al is a position paper/white paper rather than a study. Bates et al is a well-executed study (questionnaire and interview based, of course). Only drawback is the study population was quite specific (low-income residents of an island community in the Auckland, New Zealand | |
| ECN | 3 | Adequate maintenance must be possible within reasonable limits for housing cost expenditure | To maintain affective ties to the home environment, and help preserve location-specific aspects of personal identity, adequate maintenance must be possible within reasonable limits for housing cost expenditure Study has an interesting take on home maintenance issues: where many studies consider these primarily from a Physical safety and comfort perspective, this paper finds that maintenance problems cause stress and anxiety, thus "rupturing affective ties to place, limiting access to preferred identities and reducing well-being. The paper also finds that an interdependence approach to maintenance, as a communal and self-help experience and at the direction of older people themselves, plays a part in maintaining and strengthening social relationships. The above is also a NoP issue: older people need to feel in control of the maintenance and upkeep of their living environment. Satisfaction of the criterion could look to the quantitative threshold for housing costs found in another article above (maintenance costs should fit within an envelope of 30% of income on housing costs for the lowest 40% earners). Depending on financial arrangements, depreciation costs for the investment could be assessed, or access to and terms of financing to cover the investment, or cost effects in terms of rent and service costs, depending on tenure and method of financing of maintenance work | _5_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | Yes | Quantitative | Coleman, T., Kearns, R., Wiles, J. (2016) | Well-executed study (case study and interview based, of course). Only drawback is the study population was quite specific (island community in the Auckland, New Zealand metropolitan area). Study subjects lived independently and were between 65 and 94 years of age. | |

| | | | | | | | | | | |
|-----|---|--|--|-------------|--------------------|-------------------------------|-----|--------------|--|---|
| ECN | 4 | Housing must be affordable for informal carers | <p>Housing costs needs to be reasonable and affordable for informal carers (who often need to reduce working time, incl OPP):</p> <p>Best options to avoid housing cost overburden is to live in:</p> <ul style="list-style-type: none"> - owner occupied housing with no more mortgage - have possibility to receive housing allowances - Possibility to relocate to public rental housing in the same community e.g. with secure and affordable tenures; <p>According to EUROSTAT, The proportion of the population whose housing costs exceeded 40 % of their equivalised disposable income was highest for tenants with market price rents (26.3 %) and lowest for persons in owner-occupied dwellings with a loan or mortgage (4.7 %)</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | Yes | Qualitative | Eurostat (2019b) Eurostat (2017b) Glendinning, J., C. et al (2009) Pittini, A. (2012) | Important to note that the primary perspective for the KPI is that of the informal carer, and not necessarily a co-habiting informal carer |
| ECN | 5 | Occupants must have long-term security on costs of housing | <p>To support personal sense of security and emotional wellbeing, occupants must have long-term security on costs of housing, or alternatively on the long-term availability of appropriate, affordable housing arrangements</p> <p>Rental arrangements need to offer long-term security on costs of housing, or alternatively on the long-term availability of appropriate, affordable housing arrangements</p> <p>Rented accommodation for older women living alone must offer long-term security on affordability</p> <p>Tenancy contracts should offer long-term security on housing costs, and allow tenants to carry through modifications to improve the fit of the home environment to their personal preferences</p> <p>Bates et al (2019) focus specifically on (low-income) tenants, and note that insecurity about future living arrangements contributes substantially to precarity and feelings of anxiety.</p> <p>For this, and for the other KPIs from this study, it is essential that strategies to satisfy them take account of and employ the resilience under adversity that older renters are shown by the study to possess. At the very least, this is necessary to avoid stigmatization and establish and respect agency on the part of the older renters. The 'agency-enabling' aspect of the strategies could be evaluated qualitatively</p> <p>The focus of Darab et al (2018) is more specific still, zooming in on the needs of older, female tenants living alone. A large part of the value of this study (which merits being mentioned quite emphatically in general discussions) lies in elucidating how KPIs and NoPIs defined elsewhere and/or more generally, specifically apply to the group of financially disadvantaged older women living alone. While the study was conducted in Australia, this is also a large and growing group in much of Europe. It is</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | Yes | Quantitative | Mackenzie et al (2015) Bates, L Wiles, J., Kearns, R., Coleman, T. (2019) Darab, S., Hartman, Y., Holdsworth, L. (2018) From the Szabo, A. et al (2017) | Mackenzie et al is rather an extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study. Bates et al is a well-executed study (questionnaire and interview based, of course). Only drawback is the study population was quite specific (low income residents of an island |
| ECN | 6 | Private and public sector operatives should have long-term security on market conditions. Proved demand of this profile of homes | <p>Demand for this profile of homes should be well-attested, and their should be solid predictions of a market growth rate of at least 3% in 10 years. Both private and public bodies in order to foster or /and invest in age friendly living environments should have the evidence to assure the demand, specially for the private companies profitability should be guaranteed.</p> <p>Building Radar (2015) notes the following on growth prognoses: "Further, we looked into different sectors of the construction industry which are expected to prosper in the near future and it is expected to have a steady growth pattern. 2015 was a very important year for the construction industry in Europe...By 2020, New Residential market growth rate: 7.6%"</p> <p>"Technological Developments in Europe. A major goal in the EU is to promote green energy and encourage "smart infrastructure". Policy aims include investing in technology, fostering innovation in the construction industry. Our research indicates that Europe has some of the most advanced energy efficient measures for the development of infrastructure. All these measures are part of the EU's strategy to promote eco-innovation and environmentally friendly techniques for development and infrastructure.</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | | | van Hoof, J. et al (2018) Silverbridge Properties Ltd (2016) Building Radar (2015) Ruddock, L., Ruddock, S. (2017) | |
| ECN | 7 | Financial instruments in place for home ownership among less affluent older adults. | <p>Where possible, financial instruments must be available to facilitate home ownership among older adults with lower and middle incomes</p> <p>The KPI is inferred from the marked differences noted in Szabo et al (2017) between home owners and tenants in the effects of loneliness and SES on quality of life. "Findings suggest that owners capitalise on their material and financial resources more than tenants in terms of their quality of life." Study findings suggest that home ownership is associated with sense of control and feelings of stability and security. Studies consulted by the authors find, among other things "...people strive to become home-owners for non-economic, lifestyle reasons. In particular, freedom of choice, power to control the home and possibilities for activities were mentioned as the most important motives for ownership by couples aged 60 or older."</p> <p>There are differences of opinion in the literature cited to what degree differences between home-owners and tenants are dependent on socio-economic factors (primarily SES). The consensus of opinion seems to be that differences between home-owners and tenants are at least partially independent of SES.</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | Yes | Qualitative | Szabo, A. et al (2017) | Well-designed study, and a good overview of the literature |

| | | | | | | | | | | | | |
|-----|----|--|--|-------------|--------------------|-------------------------------|--|-----|--|--------------|--|---|
| ECN | 8 | The home environment must allow tailoring of adjustments and features to suit individual needs and preferences | Home adjustments are a very standard feature of course, but the study does highlight the importance of being able to decide and choose individually, on the basis of self-perceived needs and preferences. Arguably, this has an Economic component, as lower income groups may find it hard to have this need catered for | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | | Yes | | Qualitative | Kylén, M., Löfqvist, C., Haak, M., Iwarsson, S. (2019) | Some of the occupants will concern goods and services, but where choices concern actual home components, evaluation could take place on the basis of the availability or not of customization options |
| ECN | 9 | Availability of a choice of affordable housing, supported by programmes and resources | Orpana et al (2016) and Sheffield University (2017) Availability of affordable housing that is appropriately located, well-built, well-designed, secure and for which waiting times are short. availability of affordable multi-purpose and ageing-in-place housing options. Orpana et al also note the importance in this respect of the availability of programmes for increasing accessibility, safety and adaptability of housing (e.g. hand rails, ramps). | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | | Yes | | Quantitative | Orpana, H. et al (2016) Sheffield City Council (2017) | |
| ECN | 10 | Affordable internet access | Proportion of household with affordable internet access at home. | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | | Yes | | Quantitative | WHO (2015) | |
| ECN | 11 | Housing programmes and resources | availability of programmes for increasing accessibility, safety and adaptability of housing (e.g. hand rails, ramps). | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | | Yes | | Quantitative | Orpana, H. et al (2016) | |
| ECN | 12 | Proved demand of need of specific materials for age-friendly homes | the increasing demand of specific products for this type of housing will foster the research and innovation of the industry related to the construction sector to achieve more and better solutions for age friendly living environments | _6_ECONOMIC | _6.1_Affordability | 6.1.2_Willingness_to_pay | | | | Quantitative | RIBA Architecture (2018) Coleman, R. (1998) | |
| ECN | 13 | The home environment must allow tailoring of adjustments and features to suit individual needs and preferences | Home adjustments are a very standard feature of course, but the study does highlight the importance of being able to decide and choose individually, on the basis of self-perceived needs and preferences. Arguably, this has an Economic component, as lower income groups may find it hard to have this need catered for | _6_ECONOMIC | _6.1_Affordability | 6.1.2_Willingness_to_pay | | Yes | | Qualitative | Kylén, M., Löfqvist, C., Haak, M., Iwarsson, S. (2019) | Some of the occupants will concern goods and services, but where choices concern actual home components, evaluation could take place on the basis of the availability or not of customization options |
| ECN | 14 | Viable public sector business case | This is a measure of the direct financial viability of the home from a public sector perspective. If less additional (semi)public money is required than for a 'normal' owner-occupied home than it is 'undersubsidized'. It should be noted that 'normal' owner-occupied homes receive various tax benefits, which can be seen as indirect forms of subsidy; "there is a generalised bias in favour of home ownership embedded in national fiscal codes in the euro area ... the user cost of owner-occupied housing is almost 40% below the efficient level under a neutral tax system where the netreturn to owner-occupiers is fully subject to taxation". Therefore, for a rental age-friendly home the subsidies should be less than 40% total housing cost (paid by tenant + subsidies). For a bought owner-occupied age-friendly home, the subsidies should be 0 (provided that the same tax rules apply as for 'normal' owner-occupied homes). This can be calculated in a single yes/no variable or it can be quantified in terms of an annual amount oversubsidized or undersubsidized. | _6_ECONOMIC | _6.1_Affordability | 6.1.2_Willingness_to_pay | | Yes | | Quantitative | Fatica, S., Prammer, D. (2018) | |
| ECN | 15 | Viable business case in terms of nursing home and other healthcare cost savings | Ageing in place is often argued to be a more affordable option than aging in a nursing home. (The question is affordable for whom, we can focus only on the user or on the public sector as well). The costs of the potential remodeling project (i.e. all age-friendly adaptations as compared to a 'normal' appartement) multiplied by the estimated years of extension should be less than the nursing home costs that the of these extensions years. For other healthcare costs, the estimated home-based healthcare costs with home adaptations (e.g. AAL smart monitoring devices, telemedicine etc) + extended home-based care costs should be lower than the estimated out-of-home (e.g. hospital based) healthcare costs that would otherwise have been incurred. This can be a yes or no estimation (quantification is difficult for 'what if' situations) | _6_ECONOMIC | _6.1_Affordability | 6.1.2_Willingness_to_pay | | Yes | | Quantitative | Retirement Living (2019) | |

| | | | | | | | | | | |
|-----|----|--|--|-------------|--------------------|-------------------------------|-----|--|--|---|
| ECN | 16 | ROI between +/- 10% of non-age friendly homes, for both ownership and tenancy markets | To push the property developers to invest in age friendly housing business model has to prove that it's profitable. The % is based upon on the basis of the energy efficiency labels. | _6_ECONOMIC | _6_1_Affordability | 6.1.2_Willingness_to_pay | | | Peine, A., Arentshorst, M. (2017) Sullivan, J. (2018) Khalfani-Cox, L. (2017) Murray, A. (2017) | |
| ECN | 17 | Housing must be affordable for informal carers | Housing costs needs to be reasonable and affordable for informal carers (who often need to reduce working time, incl OPP): Best options to avoid housing cost overburden is to live in: - owner occupied housing with no more mortgage - have possibility to receive housing allowances - Possibility to relocate to public rental housing in the same community e.g. with secure and affordable tenures; According to EUROSTAT figures, the proportion of the population whose housing costs exceeded 40 % of their equivalised disposable income was highest for tenants with market price rents (26.3 %) and lowest for persons in owner-occupied dwellings with a loan or mortgage (4.7 %) | _6_ECONOMIC | _6_2_Choice | 6.2.1_Dwelling_type | Yes | | Eurostat (2019b) Eurostat (2017b) Glendinning, J. C. et al (2009) Pittini, A. (2012) | Important to note that the primary perspective for the KPI is that of the informal carer, and not necessarily a co-habiting informal carer |
| ECN | 18 | Availability of affordable housing is guaranteed in cases of upgrading/genitrication | When homes are upgraded / genitricated, sufficient housing options should be available for residents in the income brackets represented in the home's neighbourhood before upgrading / genitrication <i>Orpana (2016) and Sheffield University (2017) point to the importance of the availability of affordable housing that is appropriately located, well-built, well-designed, secure and for which waiting times are short. Availability of affordable multi-purapose and ageing-in-place housing options.</i> <i>Hui et al (2014) specifically note that upgrading and genitrication may have the effect of displacing original home occupants on financial grounds, thus negatively affecting their sense of belonging and identity.</i> | _6_ECONOMIC | _6_2_Choice | 6.2.1_Dwelling_type | Yes | | Orpana, H. et al (2016) Sheffield City Council (2017) Hui, E.C.M., Wong, F.K.W., Chung, K.W., Lau, K.Y. (2014) | Some care needs to be taken interpreting the results of Hui et al, as the study was carried out in a very different socio-cultural context (Hongkong) |
| ECN | 19 | Affordable rental accommodation needs to be situated within reach of social and healthcare services | Study points out tendency for affordable accommodation to shift to the periphery, away from services, as areas are redeveloped and genitricated. Evaluation could use distance criteria (plus accessibility of routes) also to be employed for other social NoPs/KPIs | _6_ECONOMIC | _6_2_Choice | 6.2.2_Living_environment_type | Yes | | Bates, L. Wiles, J., Kearns, R., Coleman, T. (2019) | Well-executed study (questionnaire and interview based, of course). Only drawback is the study population was quite specific (low-income residents of an island community in the Auckland, New Zealand metropolitan area). Study defines older renters as those over 55 years of age, which fits well with broad HHL scope. |
| ECN | 20 | The home and its environment enable economic activity for its occupants, through access to transport | WHO (2015) mentions easy access, and proximity to affordable public transportation from home environment supporting access for example to social activities and other facilities. Among possible indicators it lists proportion of public transport services (incl. vehicles and stops) with designated places for older people or people who have disabilities. It refers to the ability of people with disabilities and older people to safely ride in a public transport vehicle in order to reach their destination Proportion of housing within walking distance (500 m) to a public transportation stop. Having an accessible stop is in favour of the older person, the informal carer, but also professional carers. NB: Additional indicators would be needed to take into consideration the safety and quality of the route to the transportation stop. The Metlife Institute and Stanford Center on Longevity (2013) report mentions the presence of accessible and affordable public transportation (e.g., bus, light rail, subway) and/or alternative (individualised) transportation service for people with mobility issues | _6_ECONOMIC | _6_2_Choice | 6.2.2_Living_environment_type | Yes | | WHO (2015) | |

| | | | | | | | | | |
|-----|----|---|--|-------------|-------------|---------------------------------|--------------|--|---|
| ECN | 21 | Home employment workers can easily and legally be accessed | Home environment provides visible and clear information concerning family and home employment options | _6_ECONOMIC | _6.2_Choice | 6.2.3_Living arrangements_type | Qualitative | EFPE (2019) | |
| ECN | 22 | Access to general/indirect "carer" needs such as home care/home support services (primary target: care recipient) | Home care services are available and affordable in the community supporting independence of care recipient whilst helping caregivers feel more competent in caring for their relatives (e.g. through providing respite, maintaining a supportive relationship with caregivers, teaching them new skills, and providing help to the caregivers to navigate the healthcare system) | _6_ECONOMIC | _6.2_Choice | 6.2.3_Living arrangements_type | Qualitative | Care Alliance Ireland (2014) | |
| ECN | 23 | Positive attitude towards older people (or more widely: society cohesion) | Proportion of older people who report feeling respected and socially included in their community. Measures of social capital, such as social cohesion, may also be an indicator of the inclusiveness of a community, which can be assessed through self-report surveys. | _6_ECONOMIC | _6.2_Choice | 6.2.4_Neighbourhood_occupants | Qualitative | WHO (2015) | |
| ECN | 24 | Home must offer opportunity to co-habit with self-selected others | Co-habitation with elected others is associated positively with mental health in older adults and with the perceived utility of the home. Conversely, co-habitation with non-elected others or under circumstances beyond the control of the subject are negatively associated with mental health | _6_ECONOMIC | _6.2_Choice | 6.2.2_Neighbours_co_occupants | Qualitative | Huidas, G. (2017) Hui, E.C.M., Wong, F.K.W., Chung, K.W., Lau, K.Y. (2014) | Some care needs to be taken interpreting the results of Hui et al, as the study was carried out in a very different socio-cultural context (Hongkong) |
| ECN | 25 | Tenancy contracts must allow modifications to homes on the initiative of tenants. | Tenancy contracts should offer long-term security on housing costs, and allow tenants to carry through modifications to improve the fit of the home environment to their personal preferences <i>Inferred KPI on the basis of the literature and the study findings. It looks like the greater degree of autonomy and control afforded by home ownership is the central factor in improvements in QoL. Consequently, if similar levels of autonomy and control can be provided for tenants, similar beneficial effects on QoL should be evident.</i> | _6_ECONOMIC | _6.2_Choice | 6.2.6_Decision_making_authority | Qualitative | Szabo, A. et al (2017) | Well-designed study, and a good overview of the literature |
| ECN | 26 | housing support awareness | Awareness of rent subsidy or other programmes among older people (e.g. home loans). | _6_EC OND | _6.2_Choice | 6.2.6_Decision_making_authority | Quantitative | Orpana, H. et al (2016) | |
| ECN | 27 | Cooperate Social responsibility | CSR is a business self-regulation that aims to contribute to societal goals by engaging on ethically-oriented practices. This type of policy must be aligned and integrated into the company's business model. Xia et al (2018) note "In the construction industry, CSR is becoming a growing agenda in recent years, mainly for two paradoxical reasons: On one hand, the construction industry is intrinsically 'irresponsible' (Lu et al., 2015) whereby different construction activities such as the extraction, processing and transportation of raw materials, design, construction, and demolition of built products use excessive resources and energy (Zhao et al., 2012). On the other hand, the construction industry is socially responsible as it materialises the built environment through the creation of a wide variety of necessary buildings, industrial plants and other infrastructures (Jiang and Wong, 2016), which are instrumental to enhancing the health, economic, social and cultural aspects of humanity (Xiong et al., 2016)." | _6_ECONOMIC | _6.2_Choice | 6.2.6_Decision_making_authority | Quantitative | Xia, B. et al (2018) | |
| ECN | 28 | Age-friendly housing projects contribute to market leadership and a positive brand image | Companies want to be positioned as leaders in the AFH market, and see positive value in identifying themselves with AFH concepts. Arentshorst, M., Peine, A. (2018) note that "stakeholders consulted in [their] research indicated that the development of a shared vision should be developed by means of a multi-stakeholder process." | _6_ECONOMIC | _6.2_Choice | 6.2.6_Decision_making_authority | Qualitative | Abramsson, M. (2018) Arentshorst, M., Peine, A. (2018) Zhang, Y. (2015) Afsana et al (2018) | |
| ECN | 29 | Housing programmes and resources must be widely available | availability of a resource listing age-friendly home maintenance, support and care-giving services. | _6_EC OND | _6.2_Choice | 6.2.7_Choice_information | Quantitative | Orpana, H. et al (2016) | |
| ECN | 30 | Availability of information about home adaptation options (?) | Availability of local sources providing information about possibilities (services and funds) to retrofit/adapt one's home. | _6_EC OND | _6.2_Choice | 6.2.7_Choice_information | Quantitative | Orpana, H. et al (2016) | |

| Identification | | Criterion | Description | Taxonomy cluster | | | Source details | | Notes |
|----------------|--------|---|--|------------------|--------------------|-------------------------------|--|----------------------------|-------|
| Cluster | Number | | | KPI Cluster | Category | Subcategory | Source | Quality and approach study | |
| ECN | 1 | Acceptable earn-back time for investments in age-friendly housing | Refers to the time required to recoup the funds expended in the investment of an AFH. Buildings Performance Institute Europe (2011) note "Payback expectations/investment horizons: Even though many energy savings measures are financially rational in that they have a positive Net Present Value (NPV) or a high Internal Rate of Return (IRR), the time taken for the initial outlay to be recouped is a major barrier." Vanstraelen, L. et al (2015) observe that "Currently investors act on energy efficiency measures in buildings with short or medium pay back periods of less than 10 years, leading to energy efficiency of less than 30% savings. However, European targets for 2050 require energy savings of up to 80% in buildings, requiring investments with a much longer payback period, ranging from 20 to 40 years." Finally, Artola, I. et al (2016) find that "the (high) upfront costs of renovation and the long payback for some measures are probably the most important barriers found in literature." | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | Buildings Performance Institute Europe (2011) Vanstraelen, L. et al (2015) Artola, I. et al (2016) | | |

| | | | | | | | | |
|-----|---|--|--|-------------|--------------------|-------------------------------|---|--|
| ECN | 2 | Age-friendly homes must be affordable to all. | <p>According to Firdaus (2017), financial dependency is negatively associated with mental health. This is specifically so where there is financial dependency for housing arrangements.</p> <p>Molinsky et al (2018), quote a figure of 30 percent of income as being "a generally accepted indicator of housing unaffordability"</p> <p>WHO (2015) and Kano et al (2018) confirm this 30% figure and note that housing costs should be taken to include renting costs, mortgage payment, and repair and maintenance costs.</p> <p>Bates et al (2019) point out issues of precarity and resilience under adversity among low-income older renters. It shows that and how housing precarity negatively affects residents' physical, social and emotional wellbeing. The KPIs are formulated in terms of strategies to avoid these precarities. Note that the current exercise looks only at Emotional, Social and Economic clusters; the study also points out negative effects of precariousness in Physical and Outdoor access aspects of the home.</p> <p>EUROSTAT speaks of 'housing cost overburden rate', which represents the percentage of the population (so this varies per county) living in a household where total housing costs (net of housing allowances) represent more than 40% of the total disposable household income. By the same token, an age-friendly home is not a financial burden when the housing costs for an average older single-person or multi-person household are less than 40% of the average income/(state)pension in a particular country. In verification of the KPI, the 30% figure could be taken as optimum performance, the 40% threshold as the minimum standard to be achieved.</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | <p>Firdaus, G. (2017)</p> <p>Molinsky, J., Forsyth, A. (2018)</p> <p>Bates, L. Wiles, J., Kearns, R., Coleman, T. (2019)</p> <p>WHO (2015)</p> <p>Kano, M. et al (2018)</p> <p>FEANTSA (2019)</p> | <p>Although published in an academic journal, Molinsky et al is a position paper/white paper rather than a study.</p> <p>Bates et al is a well-executed study (questionnaire and interview based, of course). Only drawback is the study population was quite specific (low-income residents of an island community in the Auckland, New Zealand metropolitan area). Study defines older renters as those over 55 years of age, which fits well with broad H4L scope</p> |
| ECN | 3 | Adequate maintenance must be possible within reasonable limits for housing cost expenditure | <p>To maintain affective ties to the home environment, and help preserve location-specific aspects of personal identity, adequate maintenance must be possible within reasonable limits for housing cost expenditure</p> <p><i>Study has an interesting take on home maintenance issues: where many studies consider these primarily from a Physical safety and comfort perspective, this paper finds that maintenance problems cause stress and anxiety, thus "rupturing affective ties to place, limiting access to preferred identities and reducing well-being. The paper also finds that an interdependence approach to maintenance, as a communal and self-help experience and at the direction of older people themselves, plays a part in maintaining and strengthening social relationships.</i></p> <p><i>The above is also an HoP issue: older people need to feel in control of the maintenance and upkeep of their living environment.</i></p> <p><i>Satisfaction of the criterion could look to the quantitative threshold for housing costs found in another article above (maintenance costs should fit within an envelope of 30% of income on housing costs for the lowest 40% earners). Depending on financial arrangements, depreciation costs for the investment could be assessed, or access to and terms of financing to cover the investment, or cost effects in terms of rent and service costs, depending on tenure and method of financing of maintenance work</i></p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | <p>Coleman, T., Kearns, R., Wiles, J. (2016)</p> | <p>Well-executed study (case study and interview based, of course). Only drawback is the study population was quite specific (island community in the Auckland, New Zealand metropolitan area). Study subjects lived independently and were between 65 and 94 years of age.</p> |
| ECN | 4 | Housing must be affordable for informal carers | <p>Housing costs needs to be reasonable and affordable for informal carers (who often need to reduce working time, incl OPP):</p> <p>Best options to avoid housing cost overburden is to live in:</p> <ul style="list-style-type: none"> - owner occupied housing with no more mortgage - have possibility to receive housing allowances - Possibility to relocate to public rental housing in the same community e.g. with secure and affordable tenures; <p>According to EUROSTAT, The proportion of the population whose housing costs exceeded 40 % of their equivalised disposable income was highest for tenants with market price rents (26.3 %) and lowest for persons in owner-occupied dwellings with a loan or mortgage (4.7 %)</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | <p>Eurostat (2019b)</p> <p>Eurostat (2017b)</p> <p>Glendinning, C. et al (2009)</p> <p>Pittini, A. (2012)</p> | <p>Important to note that the primary perspective for the KPI is that of the informal carer, and not necessarily a co-habiting informal carer</p> |

| | | | | | | | | |
|-----|----|--|---|-------------|--------------------|-------------------------------|---|---|
| ECN | 5 | Occupants must have long-term security on costs of housing | <p>To support personal sense of security and emotional wellbeing, occupants must have long-term security on costs of housing, or alternatively on the long-term availability of appropriate, affordable housing arrangements</p> <p>Rental arrangements need to offer long-term security on costs of housing, or alternatively on the long-term availability of appropriate, affordable housing arrangements</p> <p>Rented accommodation for older women living alone must offer long-term security on affordability</p> <p>Tenancy contracts should offer long-term security on housing costs, and allow tenants to carry through modifications to improve the fit of the home environment to their personal preferences</p> <p>Bates et al (2019) focus specifically on (low-income) tenants, and note that Insecurity about future living arrangements contributes substantially to precarity and feelings of anxiety.</p> <p>For this, and for the other KPIs from this study, it is essential that strategies to satisfy them take account of and employ the resilience under adversity that older renters are shown by the study to possess. At the very least, this is necessary to avoid stigmatization and establish and respect agency on the part of the older renters. The 'agency-enabling' aspect of the stratagems could be evaluated qualitatively</p> <p>The focus of Darab et al (2018) is more specific still, zooming in on the needs of older, female tenants living alone. A large part of the value of this study (which merits being mentioned quite emphatically in general discussions) lies in elucidating how KPIs and NoPs defined elsewhere and/or more generally, specifically apply to the group of financially disadvantaged older women living alone. While the study was conducted in Australia, this is also a large and growing group in much of Europe. It is</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | <p>Mackenzie et al (2015)</p> <p>Bates, L. Wiles, J., Kearns, R., Coleman, T. (2019)</p> <p>Darab, S., Hartman, Y., Holdsworth, L. (2018)</p> <p>Szabo, A. et al (2017)</p> | <p>Mackenzie et al is rather an extensive qualitative study cum literature review, making use of material from the Australian Housing and Independent Living study.</p> <p>Bates et al is a well-executed study (questionnaire and interview based, of course). Only drawback is the study population was quite specific (low-income residents of an island community in the Auckland, New Zealand metropolitan area). Study defines older renters as those over 55 years of age, which fits well wit broad H4L scope.</p> <p>Szabo et al is a well-designed study, which also presents a good overview of relevant literature.</p> |
| ECN | 6 | Private and public sector operatives should have long-term security on market conditions. Proved demand of this profile of homes | <p>Demand for this profile of homes should be well-attested, and their should be solid predictions of a market growth rate of at least 3% in 10 years. Both private and public bodies in order to foster or /and invest in age friendly living environments should have the evidence to assure the demand, specially for the private companies profitability should be guaranteed .</p> <p>Building Radar (2015) notes the following on growth prognoses: "Further, we looked into different sectors of the construction industry which are expected to prosper in the near future and it is expected to have a steady growth pattern. 2015 was a very important year for the construction industry in Europe... By 2020, New Residential market growth rate: 7.6%"</p> <p>"Technological Developments in Europe. A major goal in the EU is to promote green energy and encourage "smart infrastructure". Policy aims include investing in technology, fostering innovation in the construction industry. Our research indicates that Europe has some of the most advanced energy efficient measures for the development of infrastructure. All these measures are part of the EU's strategy to promote eco-innovation and environmentally friendly techniques for development and infrastructure.</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | <p>van Hoof, J. et al (21018)</p> <p>Silverbridge Properties Ltd (2016)</p> <p>Building Radar (2015)</p> <p>Ruddock, L., Ruddock, S. (2017)</p> | |
| ECN | 7 | Financial instruments in place for home ownership among less affluent older adults. | <p>Where possible, financial instruments must be available to facilitate home ownership among older adults with lower and middle incomes</p> <p>The KPI is Inferred from the marked differences noted in Szabo et al (2017) between home owners and tenants in the effects of loneliness and SES on quality of life. "Findings suggest that owners capitalise on their material and financial resources more than tenants in terms of their quality of life." Study findings suggest that home ownership is associated with sense of control and feelings of stability and security. Studies consulted by the authors find, among other things "...people strive to become home-owners for non-economic, lifestyle reasons. In particular, freedom of choice, power to control the home and possibilities for activities were mentioned as the most important motives for ownership by couples aged 60 or older."</p> <p>There are differences of opinion in the literature cited to what degree differences between home-owners and tenants are dependent on socio-economic factors (primarily SES). The consensus of opinion seems to be that differences between home-owners and tenants are at least partially independent of SES.</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | <p>Szabo, A. et al (2017)</p> | Well-designed study, and a good overview of the literature |
| ECN | 8 | The home environment must allow tailoring of adjustments and features to suit individual needs and preferences | <p>Home adjustments are a very standard feature of course, but the study does highlight the importance of being able to decide and choose individually, on the basis of self-perceived needs and preferences. Arguably, this has an Economic component, as lower income groups may find it hard to have this need catered for</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | <p>Kylén, M., Löfqvist, C., Haak, M., Iwarsson, S. (2019)</p> | Some of the occupants choices will concern goods and services, but where choices concern actual home components, evaluation could take place on the basis of the availability or not of customization options |
| ECN | 9 | Availability of a choice of affordable housing, supported by programmes and resources | <p>Orpana et al (2016) and Sheffield University (2017) Vavailability of affordable housing that is appropriately located, well-built, well-designed, secure and for which waiting times are short.</p> <p>availability of affordable multi-purpose and ageing-in-place housing options. Orpana et al also note the importance in this respect of the availability of programmes for increasing accessibility, safety and adaptability of housing (e.g. hand rails, ramps).</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | <p>Orpana, H. et al (2016)</p> <p>Sheffield City Council (2017)</p> | |
| ECN | 10 | Affordable internet access | <p>Proportion of household with affordable internet access at home.</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | <p>WHO (2015)</p> | |
| ECN | 11 | Housing programmes and resources | <p>availability of programmes for increasing accessibility, safety and adaptability of housing (e.g. hand rails, ramps).</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.1_Objective_affordability | <p>Orpana, H. et al (2016)</p> | |
| ECN | 12 | Proved demand of need of specific materials for age-friendly homes | <p>the increasing demand of specific products for this type of housing will foster the research and innovation of the industry related to the construction sector to achieve more and better solutions for age friendly living environments.</p> | _6_ECONOMIC | _6.1_Affordability | 6.1.2_Willingness_to_pay | <p>RIBA Architecture (2018)</p> <p>Coleman, R. (1998)</p> | |

| | | | | | | | | |
|-----|----|--|--|-------------|--------------------|-------------------------------|--|--|
| ECN | 13 | The home environment must allow tailoring of adjustments and features to suit individual needs and preferences | Home adjustments are a very standard feature of course, but the study does highlight the importance of being able to decide and choose individually, on the basis of self-perceived needs and preferences. Arguably, this has an Economic component, as lower income groups may find it hard to have this need catered for | _6_ECONOMIC | _6.1_Affordability | 6.1.2_Willingness_to_pay | Kylén, M., Löfqvist, C., Haak, M., Iwarsson, S. (2019) | Some of the occupants choices will concern goods and services, but where choices concern actual home components, evaluation could take place on the basis of the availability or not of customization options |
| ECN | 14 | Viable public sector business case | This is a measure of the direct financial viability of the home from a public sector perspective. If less additional (semi)public money is required than for a 'normal' owner-occupied home than it is 'undersubsidized'. It should be noted that 'normal' owner-occupied homes receive various tax benefits, which can be seen as indirect forms of subsidy; "there is a generalised bias in favour of home ownership embedded in national fiscal codes in the euro area ... the user cost of owner-occupied housing is almost 40% below the efficient level under a neutral tax system where the netreturn to owner-occupiers is fully subject to taxation". Therefore, for a rental age-friendly home the subsidies should be less than 40% total housing cost (paid by tenant + subsidies). For a bought owner-occupied age-friendly home, the subsidies should be 0 (provided that the same tax rules apply as for 'normal' owner-occupied homes). This can be calculated in a single yes/no variable or it can be quantified in terms of an annual amount oversubsidized or undersubsidized. | _6_ECONOMIC | _6.1_Affordability | 6.1.2_Willingness_to_pay | Fatica, S., Prammer, D. (2018) | |
| ECN | 15 | Viable business case in terms of nursing home and other healthcare cost savings | Ageing in place is often argued to be a more affordable option than aging in a nursing home. (The question is affordable for whom, we can focus only on the user or on the public sector as well). The costs of the potential remodeling project (i.e. all age-friendly adaptations as compared to a 'normal' appartement) multiplied by the estimated years of extension should be less than the nursing home costs that the of these extensions years. For other healthcare costs, the estimated home-based healthcare costs with home adaptations (e.g. AAL smart monitoring devices, telemedicine etc) + extended home-based care costs should be lower than the estimated out-of-home (e.g. hospital based) healthcare costs that would otherwise have been incurred. This can be a yes or no estimation (quantification is difficult for 'what if situations') | _6_ECONOMIC | _6.1_Affordability | 6.1.2_Willingness_to_pay | Retirement Living (2019) | |
| ECN | 16 | ROI between +/- 10% of non-age friendly homes, for both ownership and tenancy markets | To push the property developers to invest in age friendly housing business model has to prove that it's profitable. The % in based upon on the basis of the energy efficiency labels. | _6_ECONOMIC | _6.1_Affordability | 6.1.2_Willingness_to_pay | Peine, A., Arentshorst, M. (2017) Sullivan, J. (2018) Khalifani-Cox, L. (2017) Murray, A. (2017) | |
| ECN | 17 | Housing must be affordable for informal carers | Housing costs needs to be reasonable and affordable for informal carers (who often need to reduce working time, incl OPP): Best options to avoid housing cost overburden is to live in: - owner occupied housing with no more mortgage - have possibility to receive housing allowances - Possibility to relocate to public rental housing in the same community e.g. with secure and affordable tenures; According to EUROSTAT figures, the proportion of the population whose housing costs exceeded 40 % of their equivalised disposable income was highest for tenants with market price rents (26.3 %) and lowest for persons in owner-occupied dwellings with a loan or mortgage (4.7 %) | _6_ECONOMIC | _6.2_Choice | 6.2.1_Dwelling_type | Eurostat (2019b) Eurostat (2017b) Glendonning, C. et al (2009) Pittini, A. (2012) | Important to note that the primary perspective for the KPI is that of the informal carer, and not necessarily a co-habiting informal carer |
| ECN | 18 | Availability of affordable housing is guaranteed in cases of upgrading/genitrication | When homes are upgraded / gentrified, sufficient housing options should be available for residents in the income brackets represented in the home's neighbourhood before upgrading / genitrication <i>Orpana (2016) and Sheffield University (2017) point to the importance of the availability of affordable housing that is appropriately located, well-built, well-designed, secure and for which waiting times are short. Availability of affordable multi-purpouse and ageing-in-place housing options.</i> <i>Hui et al (2014) specifically note that upgrading and genitrication may have the effect of displacing original home occupants on financial grounds, thus negatively affecting their sense of belonging and identity.</i> | _6_ECONOMIC | _6.2_Choice | 6.2.1_Dwelling_type | Orpana, H. et al (2016) Sheffield City Council (2017) Hui, E.C.M., Wong, F.K.W., Chung, K.W., Lau, K.Y. (2014) | Some care needs to be taken interpreting the results of Hui et al, as the study was carried out in a very different socio-cultural context (Hongkong) |
| ECN | 19 | Affordable rental accommodation needs to be situated within reach of social and healthcare services | Study points out tendency for affordable accommodation to shift to the periphery, away from services, as areas are developed and gentrified. Evaluation could use distance criteria (plus accessibility of routes) also to be employed for other social NoPs/KPIs | _6_ECONOMIC | _6.2_Choice | 6.2.2_Living_environment_type | Bates, L. Wiles, J., Kearns, R., Coleman, T. (2019) | Well-executed study (questionnaire and interview based, of course). Only drawback is the study population was quite specific (low-income residents of an island community in the Auckland, New Zealand metropolitan area). Study defines older renters as those over 55 years of age, which fits well with broad H4L scope |
| ECN | 20 | The home and its environment enable economic activity for its occupants, through access to transport | WHO (2015) mentions easy access, and proximity to affordable public transportation from home environment supporting access for example to social activities and other facilities. Among possible indicators it lists proportion of public transport services (incl. vehicles and stops) with designated places for older people or people who have disabilities. It refers to the ability of people with disabilities and older people to safely ride in a public transport vehicle in order to reach their destination Proportion of housing within walking distance (500 m) to a public transportation stop. Having an accessible stop is in favour of the older person, the informal carer, but also professional carers. NB: Additional indicators would be needed to take into consideration the safety and quality of the route to the transportation stop. The MetLife Institute and Stanford Center on Longevity (2013) report mentions the presence of accessible and affordable public transportation (e.g., bus, light rail, subway) and/or alternative (individualised) transportation service for people with mobility issues | _6_ECONOMIC | _6.2_Choice | 6.2.2_Living_environment_type | WHO (2015) | |
| ECN | 21 | Home employment workers can easily and legally be accessed | Home environment provides visible and clear information concerning family and home employment options | _6_ECONOMIC | _6.2_Choice | 6.2.3_Living_arrangement_type | EFFE (2019) | |

| | | | | | | | | |
|-----|----|---|--|-------------|-------------|---------------------------------|--|---|
| ECN | 22 | Access to general/indirect "carer" needs such as home care/home support services (primary target: care recipient) | Home care services are available and affordable in the community supporting independence of care recipient whilst helping caregivers feel more competent in caring for their relatives (e.g. through providing respite, maintaining a supportive relationship with caregivers, teaching them new skills, and providing help to the caregivers to navigate the healthcare system) | _6_ECONOMIC | _6.2_Choice | 6.2.3_Living_arrangement_type | Care Alliance Ireland (2014) | |
| ECN | 23 | Positive attitude towards older people (or more widely: society cohesion) | Proportion of older people who report feeling respected and socially included in their community. Measures of social capital, such as social cohesion, may also be an indicator of the inclusiveness of a community, which can be assessed through self-report surveys. | _6_ECONOMIC | _6.2_Choice | 6.2.4_Neighbours_co_occupants | WHO (2015) | |
| ECN | 24 | Home must offer opportunity to co-habit with self-selected others | Co-habitation with elected others is associated positively with mental health in older adults and with the perceived utility of the home. Conversely, co-habitation with non-elected others or under circumstances beyond the control of the subject are negatively associated with mental health. | _6_ECONOMIC | _6.2_Choice | 6.2.4_Neighbours_co_occupants | Firdaus, G. (2017) Hui, E.C.M., Wong, F.K.W., Chung, K.W., Lau, K.Y. (2014) | Some care needs to be taken interpreting the results of Hui et al, as the study was carried out in a very different socio-cultural context (Hongkong) |
| ECN | 25 | Tenancy contracts must allow modifications to homes on the initiative of tenants. | Tenancy contracts should offer long-term security on housing costs, and allow tenants to carry through modifications to improve the fit of the home environment to their personal preferences <i>Inferred KPI on the basis of the literature and the study findings. It looks like the greater degree of autonomy and control afforded by home ownership is the central factor in improvements in QoL. Consequently, if similar levels of autonomy and control can be provided for tenants, similar beneficial effects on QoL should be evident.</i> | _6_ECONOMIC | _6.2_Choice | 6.2.6_Decision_making_authority | Srabo, A. et al (2017) | Well-designed study, and a good overview of the literature |
| ECN | 26 | housing support awareness | Awareness of rent subsidy or other programmes among older people (e.g. home loans). | _6_ECONOMIC | _6.2_Choice | 6.2.6_Decision_making_authority | Orpana, H. et al (2016) | |
| ECN | 27 | Cooperate Social responsibility | CSR is a business self-regulation that aims to contribute to societal goals by engaging on ethically-oriented practices. This type of policy must be aligned and integrated into the company's business model. Xia et al (2018) note "In the construction industry, CSR is becoming a growing agenda in recent years, mainly for two paradoxical reasons: On one hand, the construction industry is intrinsically 'irresponsible' (Lu et al., 2015) whereby different construction activities such as the extraction, processing and transportation of raw materials, design, construction, and demolition of built products use excessive resources and energy (Zhao et al., 2012). On the other hand, the construction industry is socially responsible as it materialises the built environment through the creation of a wide variety of necessary buildings, industrial plants and other infrastructures (Jiang and Wong, 2016), which are instrumental to enhancing the health, economic, social and cultural aspects of humanity (Xiong et al., 2016)." | _6_ECONOMIC | _6.2_Choice | 6.2.6_Decision_making_authority | Xia, B. et al (2018) | |
| ECN | 28 | Age-friendly housing projects contribute to market leadership and a positive brand image | Companies want to be positioned as leaders in the AFH market, and see positive value in identifying themselves with AFH concepts. Arentshorst, M., Peine, A. (2018) note that "stakeholders consulted in [their] research indicated that the development of a shared vision should be developed by means of a multi-stakeholder process." | _6_ECONOMIC | _6.2_Choice | 6.2.6_Decision_making_authority | Abramsson, M. (2018) Arentshorst, M., Peine, A. (2018) Zhang, Y. (2015) Afsana et al (2018) | |
| ECN | 29 | Housing programmes and resources must be widely available | availability of a resource listing age-friendly home maintenance, support and care-giving services. | _6_ECONOMIC | _6.2_Choice | 6.2.7_Choice_information | Orpana, H. et al (2016) | |
| ECN | 30 | Availability of information about home adaptation options (?) | Availability of local sources providing information about possibilities (services and funds) to retrofit/adapt one's home. | _6_ECONOMIC | _6.2_Choice | 6.2.7_Choice_information | | |