Senior housing in Scotland: a development and investment opportunity?

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Abstract

Purpose – This article aims to understand the housing needs of older people and to ascertain the level of demand and supply of age-related housing in Scotland. It also explores interest in different types of retirement accommodation and tenure options.

Design/methodology/approach – A review of existing literature is undertaken on senior housing preferences and residential satisfaction. Primary data is collected from an online survey of people over 55 in Scotland to ascertain demand side requirements with secondary data on current supply obtained from the Elderly Accommodation Counsel and data on future pipeline collated from market reports.

Findings – The results from the survey confirm earlier research that seniors when looking for accommodation in their retirement years particularly focus on the local area, access to shops, social relations with neighbours and the design of the home interior. Current analysis of the level of supply at a county level reveals that there is significant undersupply with some particularly striking regional differences. Along with a desire for owner occupation there is interest, particularly among the 75 plus age group, to lease their accommodation, perhaps a consequence of volatile property markets, insufficient pension provision or a desire to pass wealth to their family prior to death. This shortfall in supply highlights development opportunities and raises the possibility of introducing a build-to-rent senior housing offering, which may be of interest to institutional investors.

Practical implications – The Scottish Government is currently reviewing its strategy for Scotland's older people. The results are of practical benefit as they expose the gaps in supply of age-related stock at county level. This may require the government to introduce policy measures to encourage a mix of housing types suited for the ageing demographics of the population. This research highlights opportunities for developers and investors to fill that gap and explains why advancements in technology should be incorporated in the design process.

Originality/value – This paper brings together supply side data of senior housing in Scotland and provides insights into the housing preferences of seniors. It will be of direct value and interest to developers and institutional investors.

Keywords Senior housing, Residential satisfaction, Build-to-rent, IoT in home living

Paper type Research paper

1. Introduction

Scotland's population is ageing. By 2028 there are projected to be 38,100 more people of pensionable age in Scotland with the number projected to increase by 240,000 by mid-2040 (National Records of Scotland, 2019a). Suitable senior housing, amongst other things, is a key aspect in enhancing quality of life for an ageing world population, a view supported by the United Nations (2017) "as populations grow older, it is more important than ever that Governments" design innovative policies and public services specifically targeted to older persons, including policies addressing housing, employment, health care, infrastructure and social protection, among others' (p. 2).

The current strategy for senior housing in Scotland is due to expire in 2021 (Scottish Government, 2011) and so it is an appropriate time to investigate this subject and review the changes in demand and supply, along with societal changes, that have occurred since this strategy was adopted. Anecdotal evidence would suggest that the number of houses being built specifically to meet the demands of older people who are still capable of living independently, appear to be very low. Older people are defined in this paper as those over the age of 65, the age the Organisation for Economic Co-operation and Development (OECD) uses to define older people (OECD, 2019, p. 1).

There are indications that there are a substantial number of people in the UK of retirement age who would like to move to smaller homes, but cannot find a suitable property, due to a lack of options. Many of these people live in mainstream homes with only a small percentage, circa 7%, living in more specialised housing (Torrington, 2014). Given present levels of demand and with the population over 65 continuing to grow, it seems to be a surprising and a potential market failure, that more developers have not seen the potential opportunity in this subsector of the housing market. This potential maybe not only for the construction of senior housing for sale but also to let, as there is growing evidence that seniors who are owner occupiers would be willing to consider renting an age suitable dwelling, particularly in their later years.

In this paper we will use the term "senior housing" to refer to housing built specifically for the needs of those aged over 65 [1]. In the literature this is sometimes referred to as "retirement housing" and includes the range of different types of age restricted housing such as flats, houses and retirement villages and whether they have onsite care. However, care homes will not form part of this research as they are viewed as operations more focused on health care, rather than housing.

The aim of this research is to answer three central questions: first, what are the needs of older people in terms of achieving residential satisfaction, secondly what is the current provision of senior housing in Scotland across both the public and private sector and thirdly is there enough demand for senior housing in Scotland to warrant more supply.

The first objective will be to establish the needs of senior citizens in order for them to achieve residential satisfaction. For example, is it the house itself that is important, or the location or a combination of the two? The second objective will be to find out how much demand there is in Scotland for senior specific housing and to establish what types of housing are of the most interest to seniors living in Scotland. The third objective will be to research house-building data to find out how much senior housing exists, the amount that is currently being built and in the pipeline across the public and private sector in Scotland. The final objective will be to identify areas for further research and key points which need to be addressed in order to make future improvements.

The remainder of this paper is structured as follows. Section 2 contains a critical review of the literature relating to residential satisfaction, senior household needs, levels of disability, illness and life expectancy in Scotland and technological solutions to aid independent living. Section 3 outlines the research design followed by results and analysis in Section 4. Section 5 examines the supply of senior housing in Scotland while Section 6 presents conclusions from the research.

2. Literature review
Where a person lives is one of the most important factors in determining their overall happiness and well-being and a significant topic in environmental psychology. In relation to our first question it is important to establish what older people need in order to be happy in their home environments as this will help to shape the provision of suitable senior housing in the future (Lawrence, 2002).

2.1 Residential satisfaction

Bonaiuto (2004) describes residential satisfaction as "the experience of pleasure or gratification deriving from living in a specific place" (p. 267). Rioux and Werner (2011) proposed that residential satisfaction depends on four main components namely the local area, access to services, relations with neighbours and the home itself, and these four components will be used in this section as a basis for reviewing other relevant literature to help determine their relative importance in helping to achieve residential satisfaction. The study (ibid) involved interviewing 103 participants ranging in age from 72 to 86 living at home in central France and comprised two questionnaires, the first constructed specifically to measure residential satisfaction, the second an environmental quality questionnaire aimed at evaluating both physical and social environments, and thirdly, the participants were evaluated on several psychological variables based on the French adaption of the *Satisfaction with Life Scale* [2]. The findings were that residential satisfaction corresponded to a four-dimensional structure as above, based on the physical location rather than psychological or behavioural aspects. Figure 1 below gives an indication of some of the key predictors that will influence overall satisfaction across the four subscales that will be examined in this paper.

2.2 The local area: physical characteristics

The first of the satisfaction subscales is the local area. This concerns aesthetics, safety in the neighbourhood and the pace of activity. Burby and Rohe (1990) looked at the needs of the elderly by examining ten housing developments in Durham, North Carolina. These developments ranged from high rise age-segregated to one – and two-storey age integrated developments. The authors found over and above everything else that neighbourhood quality had the biggest effect in terms of residential satisfaction. Lower neighbourhood quality, as indicated by the percentage of boarded-up dwelling units in this study, increased the perceptions of crime. This fear in turn led to less social interaction, which contributed to an overall decrease in residential satisfaction.
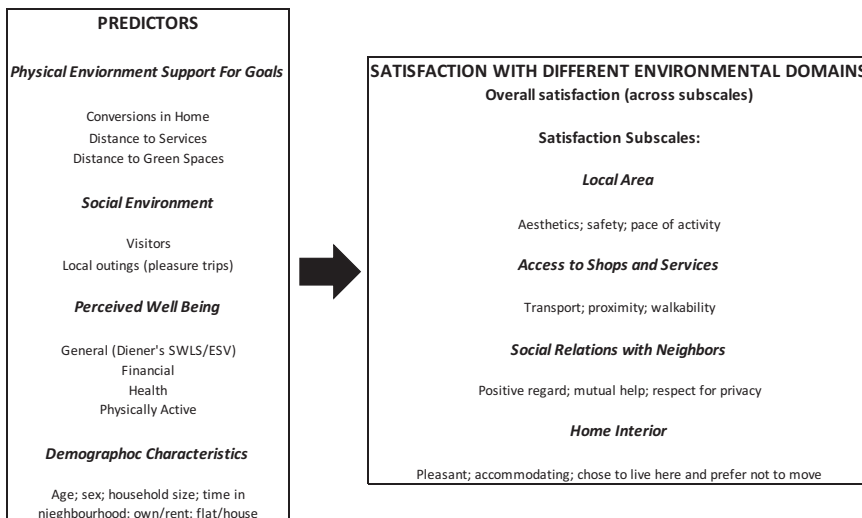

Source(s): Rioux and Werner, 2011 (p.159)

Rojo-Pérez *et al.* (2001) also identified that the existence of barriers to an older person, such as "narrow pavements, streets in a poor state of repair, badly-parked cars that make it hard for pedestrians to walk on pavements, roadworks, etc." (p. 194), contributed to residents perceiving problems in relation to the environmental quality of the neighbourhood.

Neighbourhood services in Burby and Rohe (1990) were found to be inconsequential in increasing residential satisfaction in areas characterized by high crime rates, "housing for the elderly should not be located in a service-rich neighbourhood, if it also is characterized by high crime rates" (p. 336). It is also important to note that those residents living in high rise blocks had higher perceptions of crime than those in one – or two-storey developments even though crime rates were in some cases statistically lower, an important perception which should be recognised when designing new developments.

2.3 Access to shops and services

As people get older and less mobile, proximity to shops, leisure facilities, medical facilities and transport links become even more important. While seniors may have been able to stay in their homes previously, with reduced mobility, they are less able to get to places that they were previously able to reach and are forced to move (Rioux and Werner, 2011). Rojo-Pérez *et al.* (2001) found that whilst access to some services took on average 11–15 min amongst those they studied, for a fifth of the group it took up to 30 min to reach the same facilities. Clearly physical mobility is a huge factor in terms of accessibility.

The Centre for Ageing Research at Lancaster University identified the location of the home as a key housing-related factor influencing health and well-being (Communities and Local Government Committee, 2018). They identified that homes that are inaccessible to friends and relatives can leave residents at risk of becoming isolated. Furthermore, where local facilities are not readily accessible, this leads to people being less inclined to leave their homes and more likely to experience knock on effects on their health as they become less active and more reliant on nearby food shops, which may not have the same variety of products, which can further contribute to ill health.

2.4 Social relations with neighbours

According to the International Longevity Centre UK (ILCU-Beach, 2018), chronic loneliness affects 1.2 million older people in the UK. It is important to note that loneliness does not mean isolation – it is a subjective feeling. Housing can play an important role in combating loneliness if there are a variety of options available that older people can choose from to best suit their particular needs.

Social relationships with neighbours can have a positive impact on residential satisfaction if people give positive regard to one another, respect each other's privacy and are mutually helpful. Where people engage in anti-social behaviour there is a negative impact on residential satisfaction. Bonaiuto (2004) discusses residential satisfaction in terms of three different factors: personal, social and physical. In terms of social factors, Bonaiuto (2004) suggests that similarity to neighbours and the correct balance of separation and togetherness are the key happiness drivers. Similarity is not defined, but it is fair to assume that this would encompass things like age, interests, income and beliefs. The author purports that residential environment is important to overall quality of life, but that it tends to rank lower in comparison with other factors like friendships.

In the local area section above there is discussion on how Burby and Rohe (1990) identified the physical aspects of neighbourhood quality as being the most significant driver of residential satisfaction. However, Brown (1995) took a different position, criticising the limited scope of studies focusing on neighbourhoods, commenting that most studies concerned themselves with these physical characteristics. Brown argued it is necessary to

look at the aggregated characteristics of the people living in those neighbourhoods to understand how the neighbourhood contextual effects influence human behaviour. That is to say that if housing was to be built in an area that had high rates of poverty, older people may be reluctant to move to those areas because of a fear of crime, even if the physical characteristics of the neighbourhood were pleasant on first viewing.

Lawton and Yaffe (1980) studied personal victimization and fear of crime in relation to a variety of measures of well-being of 662 older people in 53 public housing sites. They found that age integration was strongly associated with a fear of crime. Rosow (1961) theorised in his initial argument that segregating older people would have the effect of demoralizing them, but his results from research on a housing development in Cleveland found quite the opposite, with older people more inclined to socialise in age-segregated environments. These arguments point to the conclusion that older people, who have similar interests, would benefit from living in age-specific communities where they have less fear of crime and are thus more likely to interact socially with their neighbours.

2.5 Home interior design

Many homes are not designed to be accessible for those with age related mobility issues because they were built for younger families in the first instance. Evans *et al.* (2002) undertook a study to better understand how living conditions would affect the psychological well-being of elderly people living independently in the community. The housing quality observation measure consisted of 45 items, incorporating 3-point rating scales of infrastructure (e.g. home in good repair), amenities (e.g. presence of custom cabinets), support for mobility impairment (e.g. handrails in main hallway). The study queried residents of Tompkins County, with a minimum age of 60, about feelings of belongingness, sense of ownership and ability to personalize the homes they were living in. The results found that a sense of place attachment and a sense of fitting into the community was felt most strongly by those residents living in the best quality of housing. There is a positive attachment to overall feelings of residential satisfaction in homes that are adapted to the needs of older people, which again is an important element in the design of new build housing.

Phillips *et al.* (2005) found in a study of 518 older persons (60+) in Hong Kong that interior dwelling conditions had a bigger impact on residential satisfaction than the exterior environment. They also found that residential satisfaction is almost entirely based on resident's subjective appraisal of the environment. If the dwelling environment is consistent with what residents have experienced before and is able to meet their needs, then there will be a positive association and vice-versa.

2.6 Initial assessments

All four sub-scales are important considerations for planners and those designing suitable senior housing to support the needs and demands of an ageing population. In respect of achieving residential satisfaction, how older people interact with their neighbours appears to be the most convincing measure of happiness and well-being out of the four sub-scales. As highlighted, loneliness is a problem that affects large numbers of elderly people in the UK, and feelings of isolation can be linked to depression and unhappiness (Mental Health Foundation, 2017). Although neighbourhood quality is an important factor in achieving residential satisfaction, it is so because if residents do not feel safe in their environment, they are less likely to socialise with neighbours. Easy access to services encourages older people to get out more and this has the added effect of encouraging social behaviour and interaction with neighbours. Living in a quality home has been linked to greater feelings of attachment and fitting into the community.

While the evidence might suggest that for the majority, the quality of social relationships and the feeling of being part of the community are the most significant factors, this may not hold true for every senior as subjective factors are also very important. Brown's (1995) urban ecological model of ageing sums this up well. The theory states that the environment should not exceed the level of individual ability or competence to manage the demands. Well-being therefore depends on a state of balance achieved when the person in question has their needs met in terms of their own expectations. In the context of housing there is a high correlation between those who are residentially satisfied and have achieved overall psychological well-being, which highlights the importance of building a range of senior housing to meet the varying subjective needs of older people.

2.7 Disability, illness and life expectancy in Scotland
Disability and illness are major factors for many of those aged 60 plus and this needs to be factored in when considering their housing needs in later life. Table 1. below summarises information from the Scottish Public Health Observatory (2020) on clinical conditions and incidence with age in Scotland. To put some figures to this analysis, in 2018/19 out of 1,026,114 people in Scotland who were aged 65 or over, 43,479 were diagnosed with dementia, representing a rate of 42.4 per 1,000 of population. According to Alzheimer's Research UK [3], a person's risk of developing dementia rises from one in 14 over the age of 65 to one and six over the age of 80, from data sourced across the UK. As a further summary, an analysis by NHS Health Scotland of data from the Scottish Household Survey, 2005/06, reported that 54% of people aged 75 plus are living with long-standing illness or disability (NHS Scotland, 2010).

Average life expectancy in Scotland for people born between 2016 and 2018 was 77 years for males and 81.1 years for females. Healthy life expectancy was 61.9 years for males and 62.2 years for females, although these average figures hide some significant regional differences, as the gap in life expectancy between the most and least deprived areas was 13.1 years for males and 9.8 years for females (National Records of Scotland, 2019b). This difference in life expectancy between males and females potentially has an impact on the marketing of senior housing, as Gibler *et al.* (1998) found in a survey in the US, that interest in community senior housing was relatively higher among females, perhaps recognising the potential of widowhood.

Clinical condition	Incidence in older people
Cancer	Breast, colorectal, lung and prostate cancer increases with age
Type 2 diabetes	More common in older people peaking in the 70 plus age group
Disability	For both men and women, the prevalence of having a disability rises steadily with age, with the highest rates at age 75 plus
Heart disease	Strongly related to age and gender, with the highest rates in those age 75 years plus and highest in men
Stroke	Strongly related to age, with rates highest in the older age groups. However, reduction in stroke incidents have been greater in the over 75s compared to the under 75s
Osteoarthritis	Increases with age. Rates are highest in people aged 75 plus
Mental health	The types of mental health problems people experience vary with age. Dementia is more common in older people. The marked rise in alcohol consumption in early 2000s may subsequently lead also too increases in alcohol related dementia and cognitive impairment in the future
Source(s): Scottish Public Health Observatory (2020).	

Table 1.
Clinical conditions and age in Scotland

2.8 IT solutions to home living
In designing senior housing, close attention needs to be paid to the solutions offered by technology. While there is no standardised approach to IoT solutions, advances in technology have already provided solutions to aid accessibility, improve communication and the monitoring of activities within the home. The use of electronic equipment and sensors around the home, often referred to as "telecare" is well established in Scotland (Sergeant, 2010). While it is recognised that each person's needs may be different, in designing all senior housing, there should be a basic level of technology integration, that can be adapted at the software level to customise how seniors interact in their home environment. For those with physical disabilities the technology focuses on environmental controls such as door opening and ventilation, whereas for those suffering from mental health issues such as dementia, the emphasis is on mental prompts to assist with personal and mental well-being, such as reminders to take medicines and general safeguard in the home [4]. There is of course crossover as the distinction between physical and mental health issues may well become intertwined as the occupant ages. Looking to the future, the use of robots in reducing feelings of loneliness is being trialled [5], and the benefits of robots are explored by Bemelmans *et al.* (2012), Robinson *et al.* (2014), and by Abdi *et al.* (2018). Table 2. below lists some of the technological options that assist with maintaining independence in the home.

3. Research design
In order to clarify the findings from the literature review in the context of Scotland and to quantify possible levels of demand for the types of senior housing looked at in this paper, a survey instrument was devised to understand the housing needs of seniors in Scotland.

The survey was aimed at the over 55 population as opposed to the population over 65, in order to see how preferences changed across a number of different age ranges, including those who are not yet of retirement age, but might be considering their options ahead of time. Demos, quoted in the Communities and Local Government Committee Report (2018),

Technology	Benefit
Motion sensors	Assist with presence detection to build a picture of the occupant's daily habits. Can also be used in cupboards to monitor eating patterns
Temperature/Humidity/ Air Quality	Monitor health of occupant and fabric of the building. Able to focus on energy efficiency and well-being. May help identify issues with fuel poverty and poor ventilation
Safety sensors	Heat, smoke and carbon monoxide detectors can be linked to the Internet to allow for early warning and for help to be sent
Health wearables	Monitor general health and can be used to control the smart home
Voice assistants	Control smart devices in the home, provide reminders on appointments and medication and may assist with loneliness
Video Doorbells/Intercoms	When connected to the Internet can allow the homeowner to speak to whoever is at the door using a mobile phone or can be connected to smart speakers
Smart home control	Solutions such as smart plugs, lights and heating provide two benefits. The first is additional ways to control the devices through mobile phone/ tablet interfaces with voice, programmable buttons and automations based on inputs such as time of day or temperatures. The second is the ability to remotely monitor and if required, assist with control or changing of settings
Tablet devices	Designed primarily for communication and information sharing rather than integrating with the home environment or being inherently part of the building design

Source(s): C. Laurenson (TL Tech Smart Home Solutions) [6]

Table 2.
Technology to assist
with home living

highlighted that not enough adults think about housing suitable for their age-related needs until they reach the age of 75 or 80, by which time it is far more difficult to move for practical reasons. Demos urged government to help seniors plan early, perhaps five or ten years in advance, to streamline the process, so in this survey it was felt important to understand the needs of those approaching retirement as well as those who are well into their retirement years.

The survey was designed in partnership with the Elderly Accommodation Counsel (EAC), a UK charity specialising in housing options for older people. The survey was hosted on their website, Housingcare.org and was also promoted on Facebook in order to maximise responses. The survey was conducted in the summer of 2020. A total of 136 questionnaires were completed, 26 in the age bracket 75+, 51 in the age bracket 65–74 and 59 in the age bracket 55–64. As this was an internet-based survey that was open to all those aged over 55, residents in Scotland, who accessed the Elderly Accommodation Council website during the summer of 2020, it was not possible to give a response rate.

The survey instrument was split into four sections and totalled 33 questions. The section headings were as follows: (1) About You, (2) Property Concerns, (3) Residential Satisfaction and Moving on and (4) Senior Housing Choice. The first three sections sought to gather information on the responder in order to establish their current status in terms of age, tenure, preferences, wealth and general level of residential satisfaction. The fourth section focused on explaining different types of senior housing to the participants (not all of which are currently available in Scotland) and the respondents were then asked to rank how likely they would be to consider moving into these different types of housing, if at all.

Furthermore, data from the EAC was gathered to show the number of senior housing developments in the public sector and from Knight Frank highlighting the current pipeline for private sector senior housing in Scotland. This data was compared with the results from the fourth section of the survey to see if the supply of senior housing met levels of demand.

4. Data and analysis
The data was split into three different bands, separated by ten-year age gaps, in order to identify movements in attitude and concerns as participants aged. The age of 65 was the first point of separation, (the age the OECD uses to define older people), with 75 the next point of separation as this cohort were deemed to be more likely to have different concerns, likely relating to health and independence. In analysing the data not all of the questions contained in the survey have been looked at in detail for reasons of brevity, with only the most noteworthy discussed below.

4.1 Section one – the respondents
Section one consisted of eight questions centred on information relating to the participant and their home. Some interesting observations and distinctions between the age groups were made.

4.1.1 Number of people living in your current home. As Figure 2 illustrates, in the 75+ category, 65% of those interviewed said they currently live alone. Section 2 above, highlighted the issue of loneliness among older people in the UK and the results confirm that many of the survey respondents found themselves living alone.

4.1.2 Number of bedrooms. Figure 3 illustrates that there is a significant disparity, especially in the 75+ category, between the number of people in residence and the number of bedrooms. A total of 88% of those in the 75+ category have more than one bedroom and yet 65% of the respondents said they lived alone. In the context of the general housing shortage that exists in Scotland, this is an interesting, if not surprising result, and it raises questions around why older people continue to remain in homes that could be said to be bigger than

Number of People Living in Your Current Home
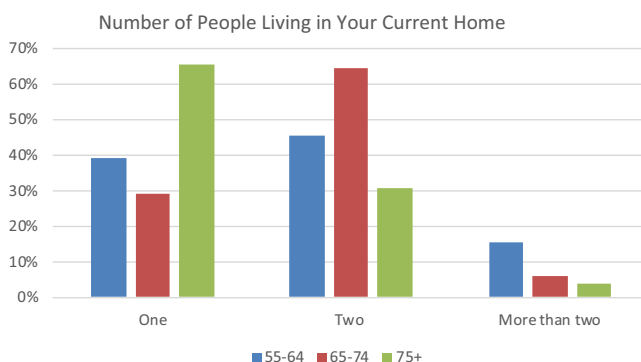
Source(s): Authors

Figure 2.
Number of people
living in your
current home

Number of Bedrooms in Your Current Home
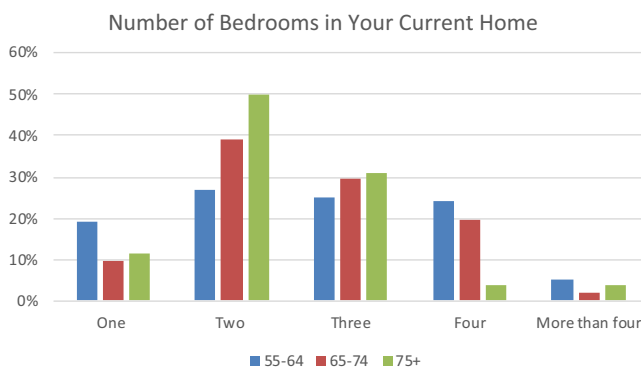
Source(s): Authors

Figure 3.
Number of bedrooms in
your current home

they require and whether this is because of a lack of supply in specialist senior housing or a lack of desire to move. This will be investigated later in the paper.

4.1.3 House type and property tenure. It is worth noting that the majority of respondents lived in houses as opposed to flats, which may have implications for developers of specialist senior housing when considering the types of accommodation that will more likely to appeal to potential clients, but again this could be due to a lack of choice.

Figure 4 illustrates that most of those surveyed live-in owner-occupied accommodation. This is not surprising, given that for much of their adult lives, home ownership has been promoted by the UK government. However, trends in society are changing and for developers/investors looking to enter this market it may well be that a blend of tenure options may be worth considering. For example, it is possible that more elderly seniors will consider moving into the private rented sector (PRS) in the coming years. A blend of offerings, including build-to-rent (BTR) developments, specifically geared towards older people, may make sense, especially with ownership rates declining and average ages increasing (Sullivan, 2018). This is discussed in more depth later in Section 4.4.
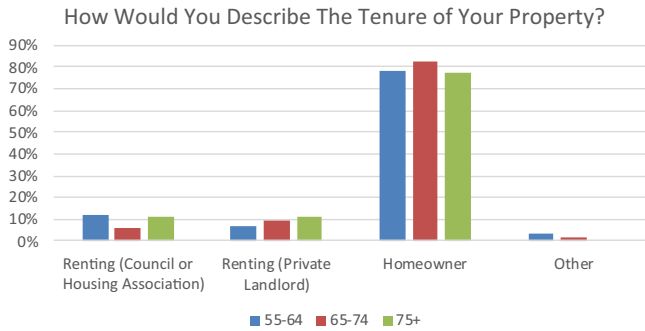
How Would You Describe The Tenure of Your Property?

Figure 4.
How would you
describe the tenure of
your property?

Source(s): Authors

4.2 Section two – property concerns

Section two of the survey comprised nine sections and within each section respondents could choose to highlight the three to five concerns listed, if the issue was relevant to them (The list of concerns was informed by an earlier survey conducted by EAC). The participant could select all concerns in each section, if appropriate. At the end of each section participants were asked their overall level of concern for that section. The results are illustrated in Figure 5. The general trend was that the level of overall concern rises as the age of the survey responder rises. There were a couple of notable exceptions, one being that the level of concern for "Condition of Property" followed the opposite trend, with survey responders less concerned with the condition of their property as they grew older. There was also a discrepancy in the level of concern for "Location", as less concern was shown amongst the 65–74 age group than the 55–64 age group. These results could be the result of sample size. Each property concern will be analysed in more detail to highlight the main issues flagged within those age brackets.

4.2.1 Size and space. Overall levels of concern followed an upward trend as participants got older. The clear concern highlighted by those over 65 was that the garden was too large, which is relevant as over 80% of the participants in this study had a garden.

4.2.2 Independence. The standout concern in this section for people over 75, was a feeling of having too much responsibility for their home. The comments below give an

Property Concerns (Overall)

Figure 5.
Property concerns
(overall)

Source(s):Authors

idea of some of the things that participants in this survey have particularly struggled with. One respondent stated that "I have Parkinson's and want to live closer to family", another commented that they had "no family in the region able to assist when any problems arise". Independence is an important theme running through this study as it has been identified as one of three principles the Scottish Government is considering in constructing future policy for ageing (Scottish Government, 2018). They state "Our vision is for older people in Scotland to enjoy full and positive lives in homes that meet their needs. To achieve this aim, we have identified three principles: Right Advice, Right Home and Right Support" (p. 7). Right support means ensuring older people have access to care services and use of innovations in technology to support and maintain independence and well-being.

4.2.3 Cost-affordability and condition of property. The cost of home maintenance ranks highly as a concern for all three age groups. Council tax, high rent, heating costs, cost of cleaners were all highlighted as problems, which contributed to affordability concerns.

Generally, there were low levels of concern on the condition of property across the age bands. Interestingly in terms of overall level of concern, this section was the only one which reversed the general trend, with participants less concerned about the condition of the property as they got older. However, there were some other concerns highlighted in the comments. The quality of central heating was raised as a concern number of times. Also mentioned were requirements for rewiring, external painting and drains needing replaced.

4.2.4 Security and safety. Fears about the external environment were significant, and as highlighted in the study by Burby and Rohe (1990) in Section 2, neighbourhood characteristics are important in making older people feel safe in their environment. Some of the participants highlighted their external concerns in the comments section, which raises questions around whether we need to think about having age segregated communities in order to protect vulnerable older people from general societal problems. Concerns were noted about "drug dealing and fighting outside" and "the building is joined with families and children using bikes and scooters without due care for the elderly walking on the pavement". As discussed in Section 2, Lawton and Yaffe (1980) found that age integration was strongly associated with a fear of crime. The inference is there is a discord between older and younger communities, and this is something that needs to be addressed so that older people feel safer in integrated communities.

Internal concerns like stairs and falls were also noted as a concern. "I am 91, on my own–despite alarms and precautions–one is inevitably aware of falls, fire and stroke".

4.2.5 Quality of life. A total of 45% of people over 75 in the survey identified that lack of human contact was their main concern. Housing can play an important role in combating loneliness if there are a variety of options available that older people can choose from to best suit their particular needs. Specialist senior housing can provide a community feeling to combat these feelings. For example, there are positive associations with retirement villages as places of security that also maintain a level of independence, with options to socialise with people of a similar age (Croucher *et al.*, 2006).

4.3 Section three – residential satisfaction and moving on
In order to ascertain the current level of residential satisfaction, participants were asked on a scale of one to ten, with 10 being very satisfied, how happy they were in their current home. For all three of the age groups the average was seven out of ten. Given that the likely respondents to the survey were people who may have been interested in moving, or people having some sort of issues in their homes, seven out of ten was a higher figure than expected. However, the range of answers was more interesting as they fell between 1 and 10. Whilst the

average was quite high, clearly some people were very dissatisfied in their current accommodation and those who were satisfied have room to be more content. Most older people are reluctant to move to a new house, but it is uncertain whether this is because they are genuinely satisfied in their own homes, or because there is a lack of housing options that will meet their subjective needs (McMeeken, 2017).

4.3.1 Willingness to move. Most of the participants in the survey, consistent across the age groups, stated that they would consider moving. This is higher figure than reported in the Communities and Local Government Committee report (2018), where it was suggested that quarter to a third would consider moving, but it is acknowledged that our survey result may be affected by self-selection bias.

4.3.2 To rent or buy?. There was a marked change in attitude for the 55–64 age group compared with the older cohorts. The over 75 group was much less attached to buying their future home compared to the 55–64 group, if they were to move (see Figure 6). This may well be related to several issues. First, those who have insufficient pension provision may find that their annual income is inadequate to maintain the standard of living that they were expecting in retirement and may feel that they have no option but to use the equity in their home, even if this was not planned (Chen and Jensen, 1985), a state that could be described as "house rich but cash poor" (Davidoff *et al.*, 2017). Secondly, others may wish to pass wealth down to their family in advance of their death in order to help children or grandchildren enter the property market. Thirdly, because of the costs associated with purchase, the volatility of house prices, the potential lack of liquidity and the relatively short occupancy period of the final home for the most elderly, many seniors and their family may well view renting as a more sensible financial strategy, which prevents exposure to the ownership market and gives them more flexibility, should say a move to a care home become necessary. Thus moving from homeownership to the PRS may well become an attractive proposition, particularly for those in the final years of life who may no longer see owning a house as a life style objective, on the understanding that there is security of tenure which would prevent eviction for reasons other than non-payment of rent. To date BTR schemes in Scotland focused on the general housing market have been few, with developments in Aberdeen by LaSalle and in Edinburgh by Aberdeen Standard being the most notable (LaSalle, 2015). However, more recently according to Scarlett (2019) a number of institutional players in the general BTR sector have now committed to Scotland including MODA, L&G, Platform, Vastint and Get Living.
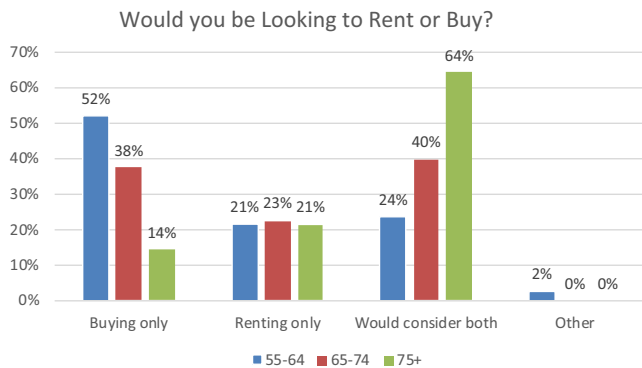

Figure 6.
Would you be looking to rent or buy?

Source(s): Authors

4.4 Section four – senior housing choices
Among the senior housing choices explained to participants of the survey, there was a clear indication that mainstream adaptable housing and retirement villages were the two most popular options as indicated in Table 3. Retirement villages are presently very rare in Scotland with only two currently open: Inchmarlo [7] and Auchlochan [8]. This is a very different scenario to Australia and the US where there is a well-developed market in these types of developments. The leading retirement village in the UK, Hartrigg Oaks [9], is run by the Joseph Rowntree Housing Trust.

Mainstream adaptable housing ranked lower for the people over 75, perhaps an indication that they realised they may need a greater level of care than mainstream housing could offer. Other forms of housing such as cohousing and intergenerational housing scored lower, perhaps because they are not yet available in Scotland and the information about them is limited. As Age UK (2014) pointed out "there needs to be a significant improvement in the availability of independent information and advice on older people's housing and care options, which takes full account of individual financial circumstances" (p. 6).

5. Supply side
Data on the level of private sector senior housing available in Scotland is harder to source. The International Longevity Centre UK has conducted research into the level of senior housing in the UK and has found that there is only enough specialist housing to accommodate 5% of the over 65 population in the UK (ILCU and FIRSTPORT, 2016). Based on the current levels of supply and the projected changes in age demographics over the coming years they estimate 'that there could be a retirement housing gap of 160,000 homes by 2030 if current trends continue. By 2050, the gap could grow to 376,000' (ILCU and FIRSTPORT, 2016, p. 21). Analysis by Savills suggests that 18,000 senior homes will be required per annum based on existing levels of provision and current trends in ageing. This represents more than double the level of current supply across the UK (Bryant, 2016).

In the context of this paper, senior housing completions in Scotland are split into three sectors, statutory, voluntary and private. In reality the statutory and voluntary sectors are

Housing type	Median
Mainstream adaptable housing (55–64)	7
Mainstream adaptable housing (65–74)	7
Retirement villages (75+)	7
Retirement villages (65–74)	7
Sheltered housing (65–74)	6
Retirement villages (55–64)	6
Cohousing (65–74)	6
Mainstream adaptable housing (75+)	5
Sheltered housing (75+)	5
Extra care housing (75+)	5
Cohousing (75+)	5
Intergenerational housing (75+)	5
Intergenerational housing (55–64)	5
Cohousing (55–64)	5
Sheltered housing (55–64)	5
Extra care housing (55–64)	5
Intergenerational housing (65–74)	4
Extra care housing (65–74)	3.5
Source(s): Authors	

Table 3.
Housing type
preference

sometimes amalgamated, as some local authorities maintain a development agency role, whilst housing associations are assigned their budget for the building of affordable housing, but for the purposes of explaining our data the sectors will have three separate definitions. Statutory completions are those built by local authorities, voluntary completions are those built by housing associations and private completions are those built by private sector companies.

5.1 Statutory sector
Under the Housing (Scotland) Act 2001, local authorities are required to prepare and submit a Local Housing Strategy (LHS) which is supported by an assessment of housing need and demand and subject to consultation and engagement with communities. The government had set a target of 50,000 affordable homes to be built by March 2021. This need is now unlikely to be met as a consequence of COVID-19. Funding for these homes comes from the Affordable Housing Supply Programme. Local authorities use their 3-years Resource Planning Assumption (RPA) from the Scottish Government to prepare Strategic Housing Investment plans (SHIPs) for their areas. These plans are the key documents for identifying strategic housing projects to assist the achievement of the 50,000 homes target. Currently, it does not appear that there is any policy obligation to build a set amount of senior homes per annum. It is up to local authorities to define need based on the demographics of their area.

5.2 Voluntary sector
Housing Associations are independent not-for-profit organisations that provide affordable homes (for rent or to purchase) for people in need. Housing Associations that have registered with the Homes and Communities Agency (HCA) are known as Registered Social Landlords (RSLs). Housing Associations are now the UK's major providers of new homes for rent. Many also run shared ownership schemes to help people who cannot afford to buy their own homes outright. Over recent years a number of local authorities have transferred all or part of their housing stock, including their sheltered housing, to RSLs.

5.3 Private sector
The private sector completions are those by private companies. McCarthy and Stone is the biggest player in the senior housing market in the UK (with approximately 70% of the market) and offers different categories of senior housing that can be bought outright, part buy/part rent or rented [10]. Interestingly, based on an analysis of 87 senior housing units advertised for rent on the McCarthy and Stone website in October 2020, the average initial yield was 8.50% (based on asking prices).

5.4 Elderly accommodation counsel data
Data obtained for this study from the EAC suggests there are just over 5,600 units available for private sale and rent in Scotland (a unit typically being a one or a two-bed flat or house and there are very few three bed units). In the statutory and voluntary sectors there are another 40,700 units combined, according to EAC data. However, even with the public sector statistics considered, the numbers would appear to fall far short against the perceived demand for these types of accommodation.

Table 4 below illustrates by county, the levels of senior housing across the private, statutory and voluntary sectors. The levels of senior housing have also been compared with mid-year population estimates for people over 65 in Scotland to give a percentage of senior housing units in relation to the population in each county (National Records of Scotland, 2020). Of note is the lack of supply in the Orkney Island (1%) and Fife (2%), while Dundee

County	Private	Statutory	Voluntary	Total	Population over 65s as at 2020	% Units v population over 65s
Aberdeen	400	2,209	872	3,481	36,157	10%
Aberdeenshire	242	1,491	1,130	2,863	51,073	6%
Angus	87	673	578	1,338	27,790	5%
Argyll and Bute	69	0	684	753	22,210	3%
Dumfries and Galloway	125	0	1,178	1,303	38,570	3%
Dundee	57	2,900	1,522	4,479	26,067	17%
East Ayrshire	27	423	428	878	24,952	4%
East Dunbartonshire	267	124	424	815	24,476	3%
East Lothian	184	133	488	805	21,731	4%
East Renfrewshire	299	246	454	999	19,186	5%
Edinburgh	1,051	1,089	3,623	5,766	79,355	7%
Eilean Siar/ Western Isles	0	0	233	233	6,895	3%
Falkirk	80	374	490	944	30,449	3%
Fife	243	475	530	1,248	77,024	2%
Glasgow	363	0	3,894	4,257	85,164	5%
Highland	200	579	960	1,739	53,088	3%
Inverclyde	115	0	548	663	16,508	4%
Midlothian	37	96	375	508	17,383	3%
Moray	45	151	569	765	20,716	4%
North Ayrshire	134	591	235	960	30,532	3%
Orkney Island	29	49	0	78	5,306	1%
Perth and Kinross	364	283	946	1,593	35,834	4%
Renfrewshire	235	329	762	1,326	33,887	4%
Scottish Borders	168	0	1,609	1,777	28,616	6%
South Ayrshire	308	569	361	1,238	28,744	4%
South Lanarkshire	288	1,432	1,108	2,828	62,706	5%
Stirling	78	238	525	841	18,264	5%
West Dunbartonshire	0	274	423	697	16,731	4%
West Lothian	107	149	923	1,179	30,485	4%
Total	5,602	14,877	25,875	46,354	969,899	5%

Source(s): Elderly accommodation counsel
Note(s): A limitation of this data is that a "unit" is not defined in terms of the number of bedrooms

(17%) and Aberdeen (10%) look better provided, all compared against the Scottish average of 5%. While the exact level of demand is not known at the county level, and accepting that there are regional differences in health and life expectancy, the data does illustrate the considerable regional differences in supply and indicates where there is significant under provision and where development opportunities may exist. It is recognised that there are also significantly different levels of average earnings, house prices and rental prices in these areas which would be factors in determining whether a new scheme would be profitable. In areas, where it is not profitable for the private sector to build senior housing, provision of new supply may have to fall on the shoulders of the statutory and voluntary sectors, with the financial support of the Scottish government. Given that by 2035 over 30% of the population in Scotland will be over 60 (presently 23%) and by 2039 over 800,000 people will be aged 75 or over (an 85% increase), preparation and planning for new supply of senior housing would seem urgent to give seniors choice on the type of housing that suits their needs and to avoid a housing crisis among the elderly.

5.5 Future pipeline

It is difficult to quantify the exact future pipeline of supply in the private sector, but according to statistics provided by Knight Frank, there were around 20 planning submissions for senior-specific housing developments in Scotland comprising a range of sizes, as of June 2020. The total number of units included in these planning permissions totalled circa 2,500 [11].

5.6 The supply of rental properties and institutional investment in senior housing

Knight Frank (2020), forecast that the number of private sector senior housing available for let in the UK will increase from the current base of 5,000 to more than 13,000 by 2024, on the back of "housing with care" operators allocating some of their stock to the rental market. It is worth noting however, that even with this increase the rental market will still only account for 3% of the total number of private senior housing units. All indications are that the rental model will become more prevalent in the years to come, thus giving more choice, but housing for purchase is still the dominant option available in the senior housing market.

Home ownership rates are declining in the UK, down from 73.3% in 2007 to 65.2% in 2018 [12]. Given this overall trend it is likely that more older people will consider moving into the PRS sector in coming years. A blend of products, including build-to-rent sector developments specifically geared towards older people seems to be the direction of travel, especially with ownership rates declining and average ages increasing (Sullivan, 2018). There is already evidence of a change in this subsector with AXA the main investors in Retirement Villages Ltd, Legal and General involved with Inspired Villages and Goldman Sachs with Riverstone Living.

However, evidence from the US would indicate that convincing investors of the opportunity may not be straightforward. Worzala *et al.* (2009) looked at the perceptions of fund managers towards investing in senior housing in the US and found that among those surveyed, senior housing was low on their list of priorities due to unfavourable risk and return ratios. However, the authors (ibid) argued that this was due to a lack of understanding of this subsector. Mueller and Laposa (1998) also made the case for institutional investment in senior housing in the US, believing that it will enjoy a stable future demand through an ageing population along with diversification benefits to the portfolio as the sector should be independent of economic and business cycles.

The core fundamentals for investment in senior housing are there – an ageing population underpinned by a structural undersupply of suitable housing options for older people. Investment may be enhanced with better data on demand and supply in this sector. Other barriers include affordability for owner occupiers, with large ground rents and service charges making it difficult for retirees to justify living in senior housing (Property Investor Today, 2019), and this latter point is worthy of future research.

6. Conclusions

In trying to understand the key factors that affect residential satisfaction among the elderly population, the literature suggested four themes; the local area, access to shops and services, social relations with neighbours and the home interior. The evidence suggested that having good relations with neighbours was the most important determinant across the studies. As highlighted in Section 2, loneliness is a huge problem in the UK, and evidence suggests that having the correct balance of separation and togetherness are key happiness drivers (Bonaiuto, 2004). However, the needs of older people are subjective, and the quality of social relationships will not necessarily be the most important determinant of happiness for every individual. Brown's (1995) urban ecological model of ageing suggests that well-being is achieved when the person in question has their needs met in terms of their own expectations. Therefore, it is pivotal that there are a variety of housing options to cater for older people's differing needs.

Data from the primary research highlighted that many older people feel that they lack human connection and it is vital to consider this when building retirement housing. Although on average participants in the survey said they were enjoying a reasonable level of residential satisfaction, there were those who disagreed, and the results from the survey highlighted some of the practical issues that private developers and statutory and voluntary sector providers need to look at when planning senior specific accommodation, ensuring that advances in technology are incorporated into the design.

Given the findings from wider research and this survey, it is evident that there is insufficient senior-specific housing in Scotland to cope with the current levels of demand, with quite pronounced under provision in several regions. This is a problem which will only continue to be exacerbated as the population of over 65's continues to increase in number and proportion compared with the rest of the demographic.

There is a limited supply of private sector senior housing in Scotland. Although the statutory and voluntary sectors contribute to the pool, given current pressure on public sector finances, future supply is likely to be led by the private sector, where it is deemed profitable. McMeeken (2017) argues that a lack of accommodation for older people is set to be the next great housing crisis. For this crisis to be averted there is a need for the Scottish government to introduce policies which encourage more age-related housing, such as the creation of a use class order to cover homes for the elderly. If left to the market there is danger that the existing behaviour among house builders of building predominantly starter and family houses will continue and the dislocate between demand and supply of housing suitable for the elderly will continue, exacerbated by the demographic shift of the population with the number aged 60 or over increasing from 23% to 30% by 2035.

Developers and investors also need to be aware of the latent demand among the most elderly seniors to lease their home. This may be due to several factors including insufficient pension provision or a desire to pass wealth onto their family prior to death, and it importantly gives seniors, and in particular the most elderly seniors, a choice of tenure other than outright ownership. The UK has seen a rise in the BTR sector targeted at the general housing market, which has attracted significant institutional investment. While to date, there have been relatively few BTR schemes in Scotland, there would be appear to be an opportunity to extend this letting model to senior housing in Scotland and across the UK. This may well be an opportunity that the investment community would welcome and help support the development of much needed extra supply.

While it is acknowledged that this research has focused on Scotland, with a population of only 5.5 million people, it is likely that many of the issues and possible solutions outlined in this paper will have resonance in many developed countries across the world. According to the United Nations [13] virtually every country in the world is experiencing growth in the number and proportion of older persons, with the population aged 65 and over, growing faster than all other age groups. The health, well-being and provision of appropriate housing for this segment of the population is likely to be one of the great challenges that many countries will face over the decades to come.

Notes

1. It is acknowledged that some developers, such as McCarthy and Stone, operate age restricted developments targeted at the 55 plus age group.

2. *"a multi item scale to measure life satisfaction as a cognitive-judgemental process"* (Diener *et al.*, 1985).

3. https://www.dementiastatistics.org/statistics/prevalence-by-age-in-the-uk/

4. For evidence of the success of IT solutions in care homes, please see the "*Moose in the Hoose*" project in Edinburgh. https://aceit.org.uk/moose-in-the-hoose/#:~:text=Moose%20in%20the%20Hoose%20is,relaxed%20and%20supportive%20group%20setting.

5. https://www.theguardian.com/society/2020/sep/07/robots-used-uk-care-homes-help-reduce-loneliness

6. https://www.tltechsmart.com/

7. https://inchmarlo-retirement.co.uk/

8. https://auchlochan.mha.org.uk/

9. https://www.jrht.org.uk/

10. See: https://www.mccarthyandstone.co.uk/great-places-to-live/types-of-developments/

11. Applications ranged significantly in size from as many as 1,061 elderly housing units at Bertha Park, Perth to 7 retirement residential units at Hillhouse Wynd, Kirknewton.

12. https://www.statista.com/statistics/543443/house-owners-among-population-uk/

13. https://www.un.org/en/sections/issues-depth/ageing/

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