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Co-housing as an Age-friendly Urban Initiative: Case Study Among Senior People in Reykjavík, Iceland

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Summary

Seniors are widely reaching retirement age in good health and capable of living independently longer than previous generations. Since years have been added to life, life has to be added to years. The senior population faces multiple challenges to maintain independent and active, often socially marginalized and age discriminated by, presumed to be inactive and at risk for social isolation and loneliness. The urban conditions have to meet seniors people's needs in order for them to be able to actively age. As the home and local environment becomes more significant to people's quality of life as they age, urban age-friendly initiatives should be made at that level.

The purpose of the research is to analyse how urban domains in Reykjavík affect seniors ageing process in the city, and how senior co-housing can impact the ageing population. It aimed to explore the socio-cultural context of the main concepts on the city level of Reykjavík, Iceland and their relations through gender-sensitivity.

Social research design was conducted to explore a case study, to capture everyday experiences of seniors towards the urban landscape in Reykjavík. Primary data was collected through qualitative methods that targeted seniors and senior co-housing residents, as well as experts on seniors and co-housing, which concluded with four focus groups, three individual and one joint interview. Secondary data sources were used to support primary data, with triangulation of interview methods to analyse the variables.

The findings showed that senior's urban domains greatly affect the opportunities for active ageing. Active ageing is perceived by seniors in Reykjavík as optimization of health, participation and security in older life. Social interactions and participation was valued highly important for health and security, facilitated through community centers, social activities and opportunities from neighbourhood services and facilities. Gendered inequalities were identified, but not as significant issues for senior women. Comprehensive improvements need to be made for health services and the seniors call for intergenerational bridging, to create understanding and empathy across generations. Co-housing has a great potential for improving senior people's daily lives, by bridging the gaps between neighbourhood services, social activities and housing and serving as a facilitator for social interactions, providing support and safety in older years.

This research contributes to scientific knowledge about the human and social factors of housing, and provides valuable information for age-friendly policies and implementing age-friendly projects in Reykjavík, Iceland.

Keywords

Active ageing, urban domains, co-housing, age-friendly, gender sensitive

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Foreword

To senior women, wherever you may be.
May the urban spaces be yours.

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1. Introduction

1.1 Background and Problem Statement

Accelerating urbanization and the ageing population are two of this century's major global demographic trends in human development (Plouffe & Kalache, 2010; World Health Organization (WHO), 2007). While the explosive growth of urbanization has been one of the main topics since the late 20th century, the latter topic is recently gaining momentum. Global life expectancy has doubled since 1900 (WHO, 2020), with the growing importance of utilizing concepts such as *active ageing* (AA), to describe the life-long personal process of ageing. Seniors are widely reaching retirement age in good health and capable of living independently longer than previous generations (Mandelman, 2021; Walker, 2002; WHO, 2002). This is particularly relevant in the Global North, where over 80% of the world's senior population is expected to be living by 2050 (Plouffe & Kalache, 2010; WHO, 2007).

Since years have been added to life, life has to be added to years (Walker, 2002; WHO, 2002). The senior population faces multiple challenges to maintain pride and independence. Seniors are often socially marginalized, age discriminated by employment, presumed to be inactive through ageist tendencies and often at risk for social isolation, loneliness and depression (Walker, 2002). Availability of sufficient resources tend to reduce through declining mobility and having to rely fixed pension incomes, which can affect quality of life and well-being (Mandelman, 2021; WHO, 2007). Unpredictable personal or societal shocks are often dismissed, such as “the cost of living increases due to inflation, loss of investments due to market downturns, loss of a spouse, or added expenses due to illness” (Mandelman, 2021, p. 9). This challenges seniors ability to actively age.

The challenges of the senior population predominately affect women. Senior women generally live longer than men, they are more frequently childless than previous generations and increasingly living alone, often divorced, widowed or single (Labit, 2015; Lodovici et al., 2015; Paz & Tur-Sinai, 2017). Although shown to be more socially active than men, senior women in the European Union (EU) receive on average 40% lower pensions than men (Labit, 2015; Bettio et al., 2013). The gender inequalities of the past have left the senior women today more financially vulnerable than men (Bettio et al., 2013).

Through multiple projects and frameworks, WHO has advocated that seniors are a valuable resource for cities. Cities should embrace the increasing longevity of their population (WHO, 2002), by cultivating age-friendly and inclusive environments (WHO, 2007; 2020). The Age-Friendly Cities and Communities Framework (WHO, n.d.) in particular, has motivated cities in 51 countries worldwide to map their urban features and how they are affecting the senior population. There is a need to develop those measurements widely and more carefully towards the local scale and socio-cultural context (Luciano et al., 2020; Steels, 2015). By understanding how the local urban features influence senior people's ageing process within a socio-cultural context, improvements can be made and age-friendly initiatives established (Steels, 2015; WHO, 2007).

As people age, the home and local environment becomes more significant to the quality of life (Luciano et al., 2020; Oswald et al., 2007). The changing population demographics, call for variations that meet the housing demand for the diversified senior population (Mandelman, 2021). While many cities direct their policies towards facilitating *ageing in place*, senior people are simultaneously looking for opportunities to maintain active, participate in society and deepening social relations (Rusinovic et al., 2019; 2020). Co-housing has been proposed as an age-friendly housing alternative to address senior's multiple challenges (Mandelman, 2021), such as by bringing together the less socially privileged seniors (Labit, 2015) to bridge the gap

between living independently and moving to residential care homes (Rusinovic et al., 2020; Van Hoof & Marston, 2021).

1.2 Relevance of the Research Topic

Reykjavík, the capital city of Iceland, was chosen for this research to study the urban conditions for senior population. Reykjavík has a young history of urban planning but grew rapidly in the 20th century. The Icelandic population transformed from 80% living in rural areas at the dawn of the century, to less than 10% by the end of it, with most of the population migrating to the Capital area (Reynarsson, 1999). The country is known for its diverse landscapes and nature, tourism and green energy, but the impacts of the urbanization processes, housing development and planning may remain overlooked (Flender, 2019; Hlynsdóttir, 2020).

Around 1/3 of the Icelandic population lives in Reykjavík, or 141.960 people (Statistics of Iceland, 2023). Seniors made up 12% of the population in 2020 and the proportion is expected to increase to 20% in 2050 or by 15.000 people (Department of Welfare, 2021). Reykjavík is characterised by its small population, low density and low rise buildings, urban sprawl and car orientation (City of Reykjavík, 2021; Reynarsson, 1999). Reykjavík's nature is eminent, with its blue and green threads and harsh climate conditions that often restrict mobility and accessibility (Bjornsdóttir et al., 2012; City of Reykjavík, 2021; Oikarinen, 2020). Looking into the impacts of those features on the ageing populations health and well-being is necessary when implementing age-friendly policy improvements (WHO, 2007).

The city of Reykjavík has shown increasing interest to facilitate age-friendly environments through international collaborations and policies (City of Reykjavík, 2016; 2019). The city got accepted into WHO's Age-Friendly Cities Project in June 2015 (City of Reykjavík, 2016) and is currently seeking ways to diversify and expand housing options for seniors (City of Reykjavík, 2022). The city aims to develop "quality-of-life" centers that motivate social interactions and foster communities (City of Reykjavík, n.d.), since loneliness and isolation are among the biggest challenges for seniors in Reykjavík (Department of Welfare, 2021). In order to make successful policy changes and facilitate housing projects, its important accumulate scientific knowledge on seniors needs and wishes for their urban environment (WHO, 2007).

For the last decade, increasing interest has been for facilitating shared living models in housing developments in Reykjavík, such as co-living, collaborative housing and co-housing (City of Reykjavík, 2022a; 2022b; Hrafnadóttir, 2018). By studying the local conditions for co-housing developments in Reykjavík (Steels, 2015), such as existing frameworks and projects, as well as cultural perceptions towards co-housing (Luciano et al., 2020), local knowledge is accumulated on the topic. Since the quality-of-life centers propose shared spaces and co-housing features (City of Reykjavík, n.d.), the residents living in existing senior co-housing in Reykjavík (Department of Welfare, 2021) could provide valuable information for policy makers implementing age-friendly initiatives.

1.3 Research Objective

The purpose of the research is to analyse how urban domains in Reykjavík affect seniors ageing process in the city, and how senior co-housing can impact the ageing population. The aim is to explore the variables on the city level of Reykjavík, Iceland and through gender-sensitivity. The main objectives are to:

- Explore what AA means for seniors in the socio-cultural context of Reykjavík

- Identify the seniors' urban domains in Reykjavík and analyse how they influence AA among senior people
- Explore the concept of co-housing within the socio-cultural context of Iceland, both how the local conditions for co-housing affect seniors, how it is currently implemented and what motivates further production of this type of living
- Explore the possibility of senior co-housing mitigating the challenges that seniors experience in the urban environment
- Determine whether gendered imbalances are among the senior population, and how gender-sensitive initiatives can be implemented, if needed.

1.4 Main Research Question and Sub-Questions

The main research question is: *How can living in senior co-housing influence the effects that the urban domains have on seniors' active ageing process in Reykjavík, Iceland?*. The following sub-questions will help to support the main objectives of this study:

- How is AA perceived by seniors in Reykjavík?
- How do the seniors' urban domains on the city level of Reykjavík influence AA for seniors?
- What are the local conditions for co-housing in Reykjavík and how is senior co-housing currently implemented?
- If and how does gender influence seniors' urban domains, co-housing and AA in Reykjavík?

1.5 Personal Motivation

My grandmothers are among my main role models. They are very independent, active, social and thrive with people around them. Through studying housing and planning cross-culturally, the co-housing movement inspired me, as a counter movement to the individualistic way of living in Western societies. My neighbors in Scandinavia started the movement but only a few examples can be found in Iceland. The more I dug into the topic, the more I realized how women have been the creative forces and organizers of co-housing (Labit, 2015; Pedersen, 2015). Further, by realizing the gendered gap in pensions and the multiple implications it has on women (Bettio et al., 2013), it became evident to me how significant the topic is, but it may remain disguised by the all other housing challenges that modern cities face. I believe that co-housing for seniors, especially senior women, could be a groundbreaking movement to increase their well-being and facilitate active aging.

2. Literature Review

2.1 The Ageing Population

The global population is ageing. Plouffe and Kalache describe the accelerated urbanization and increasingly ageing population as “the culmination of successful human development during last century” (2010, p. 734). Global ageing is particularly relevant in countries in the Global North, where fertility rates have fallen and life expectancy increased (UN, 2019). By 2050, over 80% of the world’s senior population will be living in the Global North (Plouffe & Kalache, 2010; WHO, 2007). The following chapters will outline the main concepts and discourse on ageing.

2.1.1 Main Concepts of Ageing

Many concepts have been used in gerontology to describe the process of ageing but through the literature review, three leading concepts have been identified. These are *successful ageing* (Havinghurst, 1961; Rowe & Kahn, 1987; 1997; Torres, 1999), *active ageing* (Boudiny, 2013; Paz & Tur-Sinai, 2017; Walker, 2002; WHO, 2002) and *healthy ageing* (Hung et al., 2010; Stephens et al., 2015, WHO, 2020; 2023) (see table 1). Other concepts such as *productive ageing* (Butler & Gleason, 1985), *positive ageing* (Chong et al., 2006) and *robust ageing* (Garfein & Herzog, 1995) emerged but did not get as widely recognized. Although similar, each concept emphasizes different ways of enabling, including and empowering senior people in societies during the times of global graying (Boudiny, 2013; Chong et al., 2006; Hung et al., 2010).

Table 1: Leading concepts in the field of ageing

Successful ageing	Active Ageing	Healthy ageing
“multidimensional, encompassing three distinct domains: avoidance of disease and disability, maintenance of high physical and cognitive function, and sustained engagement in social and productive activities.” (Rowe & Kahn, 1997, p. 439)	“the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age.” (WHO, 2002, p. 12)	“the process of developing and maintaining the functional ability that enables well-being in older age.” (WHO, 2015, p. 28)

Source: Author (2023), sources listed in the table.

Early discourse on ageing is evident through Rowe & Khan’s definition of *successful ageing* (1987; 1997) being widely criticized for being culturally monotonous and ignorant of the lived experiences of senior people. Torres (1999) criticized successful ageing as being centralized around American capitalist ideologies, where well-being is limited to the dualism of success or failure. Holstein & Minkler (2003) further emphasized that the idea of *success* should be carefully associated with ageing, as health is not “attained through individual choice and effort” (Rowe & Kahn, 1998, p. 37) but is greatly influenced by gender, race, socioeconomic status, genetics and environmental forces (Eikemo et al., 2008). In that way, the idea of *success* can stress and even harm marginalized and vulnerable older people, especially women, lower-income groups and ethnic minorities (Holstein & Minkler, 2003). On the other hand, *active*

ageing and healthy ageing have been regularly revised throughout the years and alternated between being the leading concepts in the discourse in policies and projects by WHO (2002; 2007) and the United Nations (UN) (2019).

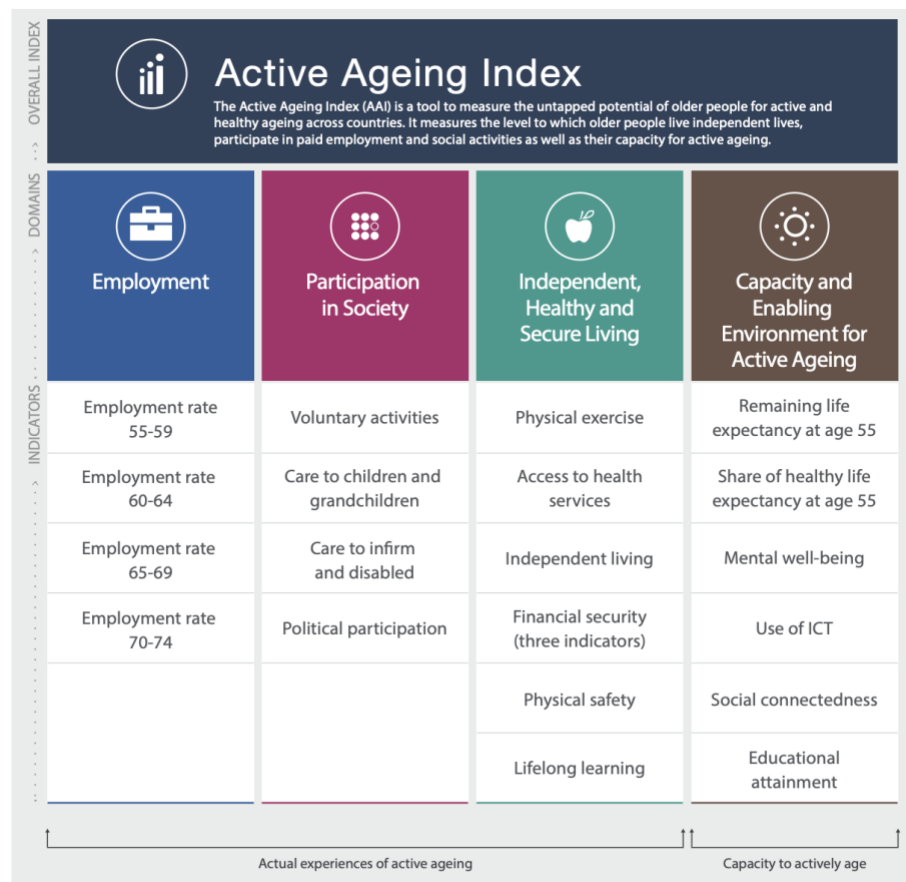
2.1.2 Active Ageing and Healthy Ageing

The concept of AA was adopted by WHO in the late 1990's and introduced as a Policy Framework in 2002 to encourage action plans that promote healthy and AA (WHO, 2002). AA is a multidimensional term that does not limit senior people's activity to physical health or activity within the labour market, but encompasses their wide participation across economic, social, cultural and even spiritual affairs in civic society (Boudiny, 2013; Walker, 2002; WHO, 2002). The term emerged from a prominent viewpoint by socio-gerontologists the 1940-1950's that was later termed as *activity theory* (Havinghurst 1961; Boudiny, 2013), which stressed that the key to life satisfaction in older years was maintaining an active lifestyle. Activity theory opposed the *disengagement theory* (Cumming and Henry, 1961) which proposed that senior people accept and even desire to disengage from society (Havinghurst, 1961). Both theories have been criticized for extremes (Paz & Tur-Sinai, 2017), as the former presumes unrealistic activity levels while people age (Narushima et al., 2016), but the latter ignores that the withdrawal between seniors and society is often not mutual, as society fails to recognize the perspectives and intentions of senior people (Boudiny, 2013).

WHO's definition of AA differs from the activity theory, as it (1) respects individual changing capacity while ageing and (2) puts the responsibility in the hands of governments and leaders to generate age-friendly environments (Narushima et al., 2016). It was also meant to be more inclusive than the term "healthy ageing", as it recognized that many factors influence the process of ageing and that it is not solely dependent on health care (WHO, 2002). In Europe, the Active Ageing Index (AAI) was launched in 2012 as a tool to measure and monitor active and healthy ageing across the 27 EU Member States (UN, 2019). The index consists of 22 indicators that are grouped into four domains (see figure 1).

The term healthy ageing returned a few years later with the World Report on Ageing and Health by WHO (2015) (see figure 2).

Figure 1: The Active Ageing Index



Source: United Nations, 2019

The new definition of healthy ageing reached a broader perspective where ageing is not determined by old age, but dependent on behaviors, preventive measures and health promotion throughout the entire lifespan. Furthermore, it reaches a person-centered approach, where each person's capacity depends on their individual circumstances and the multiplex health determinants that influence their well-being (Stephens et al., 2015; WHO, 2015).

The goal of this research is not to argue which of these two concepts is more inclusive. Both of them have contributed to the discourse on ageing and used interchangeably in recent literature (WHO, 2020; 2023). Nevertheless, after conducting a thorough literature review on the concepts of ageing in relation to the urban context, AA was chosen as one of the main concepts for this research as defined by WHO's Global Age-Friendly Cities Guide (2007). Active ageing is "a life-long personal process shaped by several factors that, alone and acting together, favour health, participation and security in older adult life" (2007, p. 1). The concept was chosen on the grounds of its relations to the independent variable, since seniors' urban domains do not solely affect health but also people's ability to be active, participate in society and feel secure. The concept is further operationalized in chapter 3.2 (see figure 8).

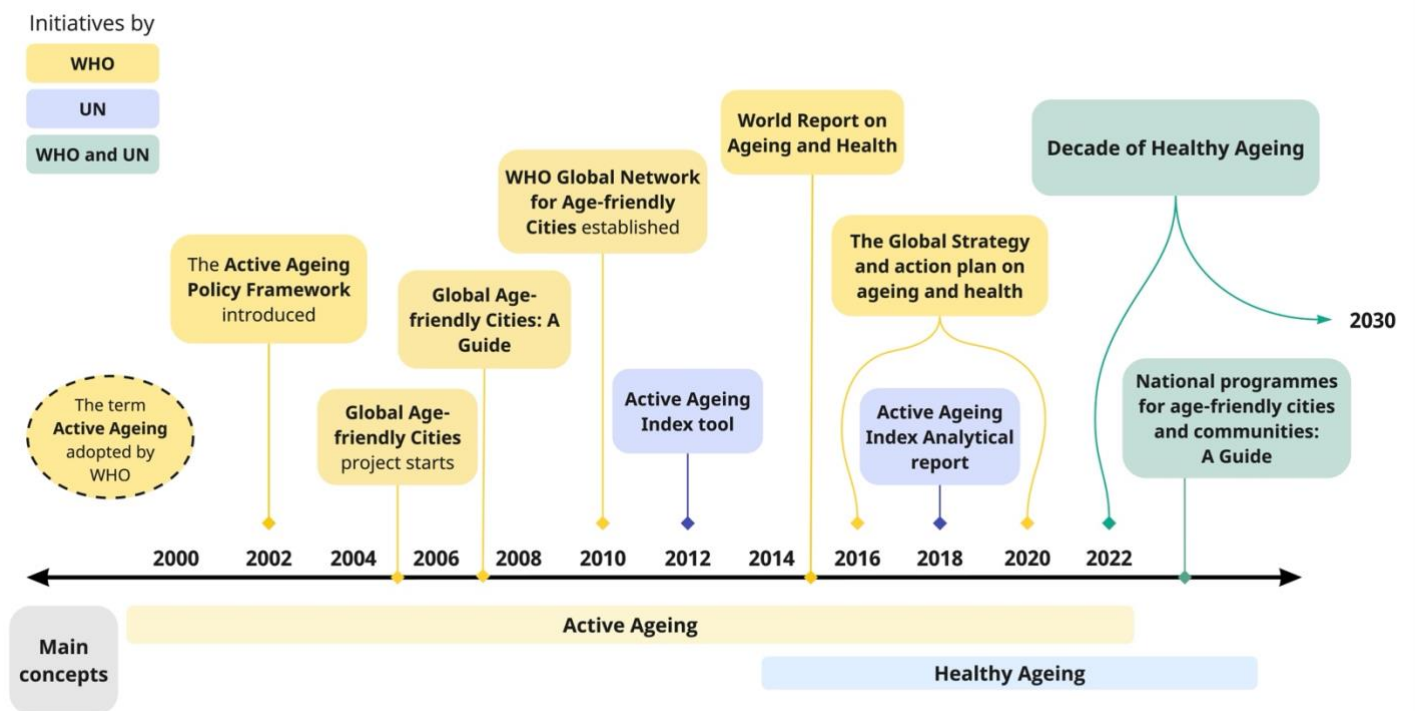
2.2 Ageing in Cities

Seniors are a valuable resource for cities. There is a growing awareness that cities have to cultivate age-friendly environments through inclusive and accessible urban domains to ensure that seniors can be healthy and active (Plouffe and Kalache, 2010; WHO, 2007).

2.2.1 Active Ageing Frameworks and Projects

Since the beginning of this century, multiple organizations such as the WHO, EU and UN have actively worked towards combining the discourse of urbanism and ageing in policy frameworks and projects (WHO, 2020). *The Global Age-Friendly Cities* project by WHO (2007) started in 2005. Global bottom-up research was conducted on the experiences of senior people and a research protocol was implemented in 33 cities. Pursuant to the project, a guide was published to motivate the whole society, from citizens to national governments, to be involved in making their city age-friendly (WHO, 2007). In 2010, the *WHO Global Network for Age-friendly Cities and Communities* was established to connect cities with the common vision of making cities inclusive and supportive environments for seniors. Currently, the network includes 1445 cities and communities in 51 countries worldwide (WHO, n.d.). The first *Global Strategy action plan on ageing and health* was coordinated from 2016-2020 (WHO, 2017) and currently, the WHO and UN collaborate on a 10 year action plan: the *Decade of Healthy Ageing (2021-2030)* (WHO, 2020). Finally, an updated Guide for age-friendly communities was published in 2023 (WHO, 2023). Figure 2 shows an overview of the main milestones.

Figure 2: Timeline of the Main Milestones on Urbanism and Ageing



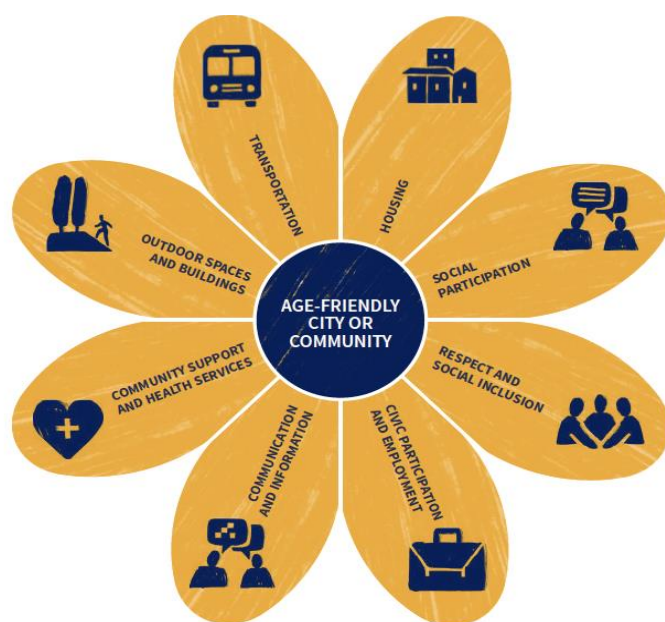
Source: Author, 2023

2.2.2 Age-friendly Cities

WHO's Age-Friendly Cities Guide (2007; 2023) and their Global Network of Age-Friendly Cities and Communities (2010) have encouraged cities worldwide to develop age-friendly initiatives. These initiatives are not limited to the responsibility of national governments or local authorities but require intersectoral collaborations with research institutions and other organizations that work in the interests of senior citizens. The Age-friendly City is also about creating awareness and bringing in stakeholders that have not previously placed age-friendly objectives on their agenda (Steels, 2015).

The Global Age-Friendly Cities Guide by WHO (2007; 2023) provides a checklist that was derived by defining urban features across 33 cities worldwide. The urban age-friendly features are divided into 8 domains of action: housing, transportation, social participation, respect and social inclusion, civic participation and employment, communication and information, community support and health services, and finally outdoor spaces and buildings (WHO, 2007; 2023) (see figure 3).

Figure 3: Age-friendly City Domains of Action

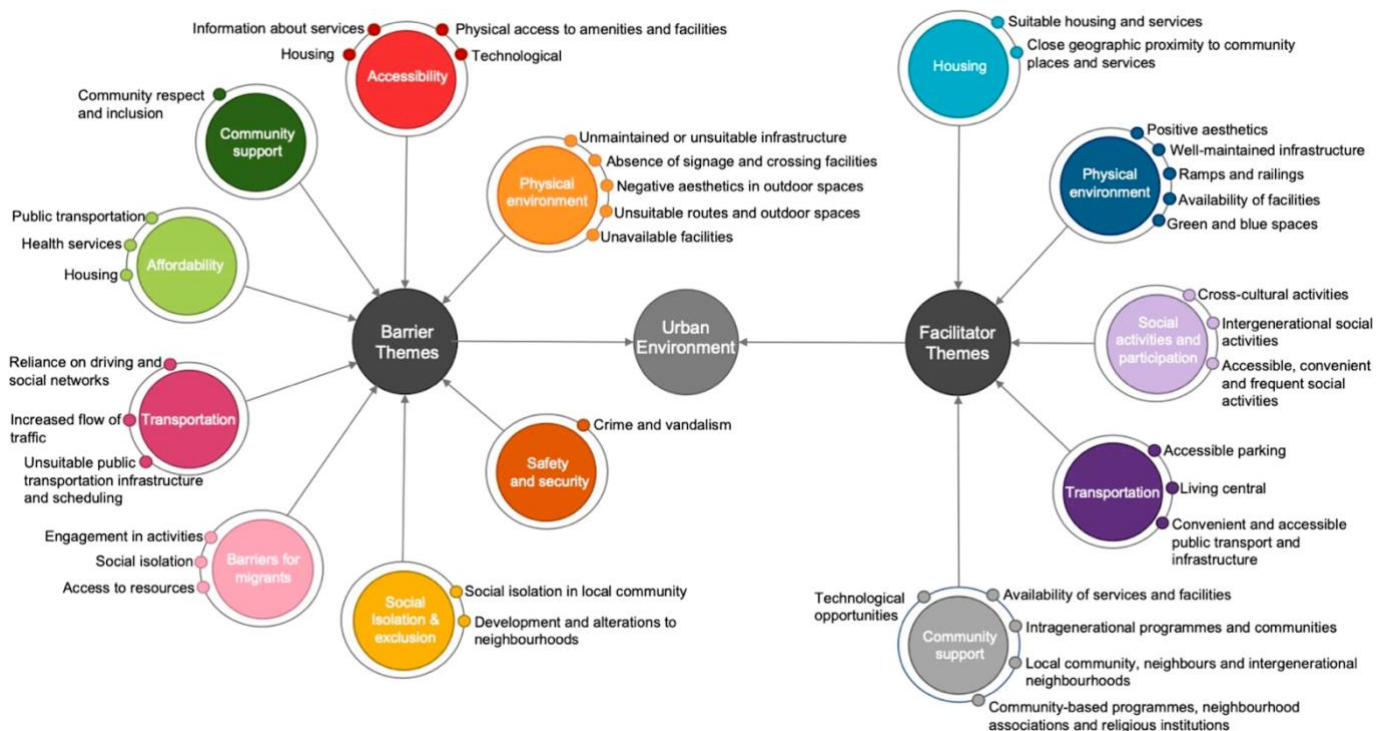


Source: WHO, 2023

The Global Age-friendly Cities Guide (2007) showed how the multi-dimensional urban features in cities interconnectivity affect the three determinants of AA; health, participation and security. It showed how, e.g. housing, transportation systems and availability of social activities can affect healthy behaviours, participation in society and security within it (Plouffe & Kalache, 2010; WHO 2007; 2023). Studies have further analysed these relationships and argued the defining features e.g. Buffel and Phillipson (2016) claiming that neighbourhoods and transportation are the most important features, while Plouffe & Kalache (2010) argue “physical accessibility, proximity, security, affordability, and inclusiveness” (p. 737).

Other studies have used different categorizations and dimensions to analyse the relationship between urban domains and AA. Lui et al. (2009) used a two-dimensional integrated model to map the urban features along a physical-social continuum. Wood et al. (2022) utilized a multidimensional socio-ecological approach, in order to analyze urban features as barriers and/or facilitators for AA. They identified thirteen themes, with eight barriers and five facilitators, while three significant characteristics were identified as both; (1) physical environment, (2) transportation and (3) community support (see figure 4) (Wood et al., 2022). Furthermore, Murtagh et al. (2021) criticized the focus on indicators in age-friendly studies, as they fail to see the deeper complexities. No matter how the urban domains are categorized, their affects on senior people remain interconnected (Steels, 2015).

Figure 4: Wood's Urban Barriers and Facilitators for Active Ageing



Source: Wood et al., 2022

Due to its significance in literature and the utilization by the City of Reykjavík (2016; 2019), WHO's Age-friendly City Domains of Action will be adapted to this study. Luciano et al. (2020) and Steels (2015) have criticised the macro-level of WHO's framework (2007). Metrics of assessment have to be developed on local levels, with sensitive indicators towards the scale to avoid disparities, using disaggregated indicators (e.g. gender or age) when needed (Steels,

2015). This study therefore aims to adapt the indicators to the city level of Reykjavík, use age-friendly collection methods as well as gender sensitive methods to acknowledge possible bias.

2.2.3 Urban Features and the Needs of Senior People

As people age, the home and their local environment gradually become more important (Luciano et al., 2020; Oswald et al., 2007). The local landscape and urban domains can highly influence their behaviors and feelings (Plouffe & Kalache, 2010; Steels, 2015). In this research, the seniors' urban domains are described as:

“The City’s structures, environment, services and policies, categorized by the affects that they have on senior people’s daily lifes. They are based on multiple determinants, such as personal, behavioural, social and economic determinants, as well as the physical urban environment and socio-cultural context The domains are interconnected and have to be adopted to the local context (Author, 2024; Plouffe & Kalache, 2010; Steels, 2015; WHO, 2002; 2023; Wood et al., 2022).

For this research, the seniors' urban domains are seven: Housing; Neighbourhood Services and Facilities; Transportation; The Built and Natural Environment; Social Activities; Health Services and lastly Respect and Inclusion (see operationalization table, figure 7). WHO (2007; 2023) has globally researched the influences that urban domains have on seniors, such as how buildings, transportation and housing can affect seniors' mobility, security and health behaviours, while communities and social activities can affect seniors participation, social and mental health (WHO, 2007). I will futher reflect those influences from the literature.

As people reach the retirement age, their physical ability often reduces. Consequently, the proximity and accessibility in the urban environment becomes increasingly important (Plouffe & Kalache, 2010). Nordbakke (2013) proposed a nuanced understanding of how cars can help maintain senior women's independent mobility, especially for those with reduced physical capacity. Environmental aesthetics and accessibility, such as with well-maintained pathways, available ramps, visible signage and crossing can positively influence feelings of safety and improve mental health (Wood et al., 2022). However, the impact of seasonal changes in cities, such as colder climates and winter conditions (Hemmersam, 2016) can present as barriers for seniors' physical and mental health (Bjornsdottir et al., 2012) which requires further exploration (Oikarinen, 2020; Steels, 2015). The effects of adjusting to pension salaries on senior's financial security and independence are also understudied (Mandelman, 2021), especially in terms of gendered gaps in pensions (Bettio, 2013). While financial resources are scaled down, health care expenses due to declining health, illnesses or injuries weigh heavier. Consequently, seniors' access to affordable health care services becomes more important (Mandelman, 2021; Van Hoof & Marston, 2021). The neighbourhood and community also have the ability to provide mutual support, encourage participation and nourish social connectedness (Van Hoof & Marston, 2021).

Housing has proven to be a particularly important determinant of senior people's quality of life (Luciano et al., 2020). As people age; they retire, their physical ability decreases and they spend more time at home or in their local environment (Oswald et al., 2007; WHO, 2007). Adequate housing is therefore highly important for this age group (Ayala et al., 2019). Generally, senior people wish to remain in their home for as long as possible, often due to strong place attachments that help them to maintain personal independence and mobility (Luciano et al., 2020). Many cities try to meet that need through policies directed towards enabling *ageing in place*, but by encouraging seniors to stay at home, the concept has also been criticized for further enhancing loneliness and isolation (Rusinovic et al., 2019). There is a need

to bridge the gap between ageing in place and living in institutional care facilities (Rusinovic et al., 2020). For seniors who do not need continuous care but do want to have more security, support and social connectedness, co-housing communities have proven to be an innovative and successful approach, that contributes to making housing more age-friendly (Mandelman, 2021; Rusinovic et al., 2020; Van Hoof & Marston, 2021).

2.3 Co-housing: An Age-Friendly Alternative

Before explaining the benefits of co-housing for seniors, the following section will cover a short history about the emergence of co-housing and how it shaped what co-housing means today.

2.3.1 Emergence and Early Ideas of Co-housing

Throughout the history, communities worldwide have collectively formed housing projects (Tummers, 2015). The ideas of co-housing can be traced back to the visions of utopian socialists and communitarian settlements in the 18th and 19th century. The main force behind shared living models that emerged in Northern Europe in the late 20th century, was the reduction of housework (Vestbro & Horelli, 2012).

As educated women increasingly entered the labour market in the 1940's, the *kollektivhus* in Sweden enabled women to combine domestic work with a career. Aims for alternative lifestyles from the mainstream society drove different types of housing to emerge (Tummers, 2015). Communal housing appeared in industrialized cities in 1970's to challenge the nuclear family model (Vestbro & Horelli, 2012). The squatter movement driven by protest-occupations in the 1980s in the Germany and Netherlands created diverse collectives and cooperatives (Tummers, 2015). In the 1980's, co-housing broke emerged in Scandinavia as simple apartment buildings with shared communal spaces (Vestbro & Horelli, 2012).

Women were the driving force in the early days of co-housing, making up most of the residents (Labit, 2015; Pedersen, 2015). The shared spaces often included a kitchen and dining room, leisure areas, spaces for childcare, communal garden and a laundry room (Labit, 2015; Tummers, 2015; Vestbro, 2010). Domestic chores were divided between residents, such as cooking, cleaning and collective childcare. Men were activated to share the collective tasks with the group, by which contributing to gender equality within the households (Vestbro & Horelli, 2012). By improving the domestic environment and relieving the burdens of daily tasks, especially for women, small steps were taken towards a more equal society (Pedersen, 2015; Vestbro, 2010). In the forty years since co-housing emerged in Northern Europe, Choi & Paulsson (2011) and Tummers (2015) argue that co-housing has expanded and re-emerged as more pragmatic than radically idealist.

2.3.2 Co-housing in the 21st Century

The recent uprise of co-housing has expanded and diversified the definition of co-housing. Labit (2015) and Tummers (2015) relate the unclear boundaries of the concept to the lack of qualitative data on co-housing. Vestbro (2010) likewise affirms that the term is spreading out, becoming more generalised and universal. They elaborate:

“The concept cohousing does not state exactly what *co* stands for. It could be *collaborative*, *cooperative*, *collective* or *communal*. Therefore it is logical to see cohousing as the wider concept.”

Tummers (2015) agrees and described co-housing as a generic term, while related concepts (see table 2) are more descriptive and may be used to emphasise the nature of relations between the residents.

Table 2: Definition of Co-housing and Related Concepts

Concept	Definition
Co-housing	Housing with common space and shared facilities
Collaborative housing	Housing oriented towards collaboration between residents
Collective housing	Emphasises on the collective organization of services in the housing
Communal housing	Housing for togetherness and sense of community
Commune	Communal type of living without individual apartments
Cooperative housing	Cooperative ownership of housing with/without common spaces or shared facilities
Co-living	Furnished room with generous shared spaces. Often rental and temporary housing under flexible terms. Commonly targeted towards students, expats, tourists and digital nomads.
Eco-villages	Community on the periphery of mainstream society. Experimental way of living that promotes health and sustainable living through integration with nature.

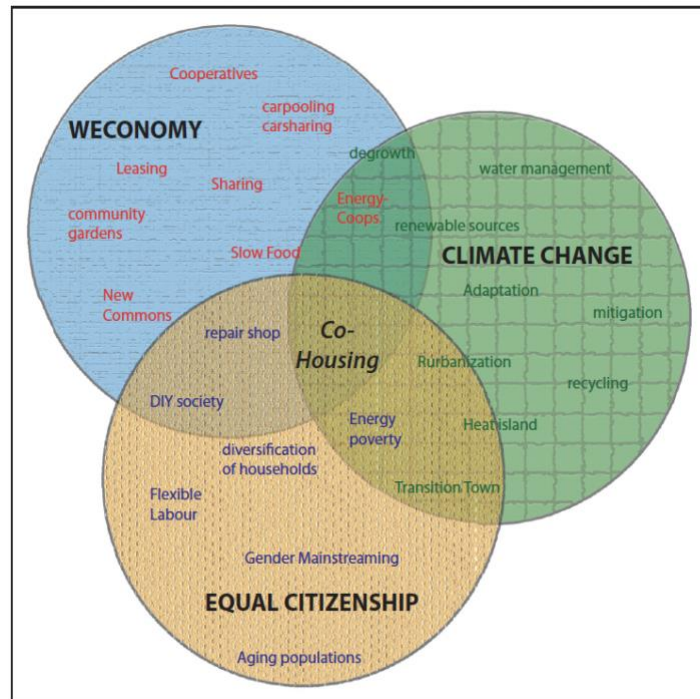
Source: Adapted from Vestbro (2010), Tummers (2015) and Von Zumbusch & Lalicic (2020)

Co-housing is a multifaceted concept that generally refers to two dimensions: the social content, referring to the communal and collaborative way of living, and to the physical structure, which is the housing and its facilities (Vestbro & Horelli, 2012). These dimensions differ and definitions vary. For instance, Czischke et al. (2020) refer to co-housing as having four fundamental dimensions: shared visions and values; organizational; relational (social); and spatial (physical layout). The latter definition places shared values and self-management at the core of co-housing. Tummers (2015) acknowledges that self-management is a common feature in co-housing, but depending on the groups and context, it can range from full self-management and co-creation to a more guided participatory process for vulnerable groups. In some cases they are built and managed by private or public housing companies or associations (Vestbro & Horelli, 2012). Although many scholars also refer to co-housing as intentional communities (Choi & Paulsson, 2011; Tummers, 2015), it depends on the groups involved, as not all co-housing is intentional (Vestbro, 2010).

While co-housing may have been about reshaping everyday structures and gendered imbalances in the 1980’s, Vestbro & Horelli (2012) observe the re-emergence of co-housing to be about overcoming isolation and finding ways to live more sustainable lifestyles (Tummers,

2015). In figure 5 from Tummers (2015), co-housing is illustrated as an integrative practise, bringing together the past and present directions. Co-housing has proven successful to address current societal challenges, particularly among the senior population (Choi, 2004). Older people are increasingly more healthy and active but through living independently, they often lack social interactions and feelings of safety in their local environment. Co-housing provides an alternative housing, that bridges the gap between remaining at home and ageing in place, to the need later in life for living in institutional care facilities (Rusinovic et al., 2020).

Figure 5: Co-housing as an Integrative Practise



Source: Tummers, 2015

2.3.3 Co-housing for Seniors

As intergenerational co-housing grew in North and Western Europe, intragenerational co-housing for the senior population emerged. From the 1980's, over 250 senior communities have been established in Denmark, with similar numbers in the Netherlands and Sweden (Pedersen, 2015). Senior co-housing developed independently, as Pedersen (2015) identified that only 5% of senior co-housing residents have previously lived in any sort of co-housing. While a number of studies have been conducted on the conditions for co-housing, such as architecture, legal frameworks and management, there remains the need to explore the human and social factor further, the range of benefits and possible challenges (Labit, 2015).

The residents in co-housing often share common characteristics. They are generally homogeneous in social class and race (Glass, 2009), often well educated (Arrigoitia et al., 2020; Choi & Paulsson, 2011), women generally outnumber men (Brenton, 2001; Glass, 2009), they are less likely to be married and have children (Glass, 2009; Labit, 2015), have higher perceived sense of community and are more likely to consider themselves healthy (Choi, 2004; Glass, 2009). The criteria of age for living in senior co-housing differs, with examples of senior co-housing for people 40+ in Sweden (Choi & Paulsson, 2011), 50+ in the UK (Arrigoitia et al., 2020), 55+ in Denmark (Choi & Paulsson, 2011) and the United States (Glass, 2009). Marital status and gender are also often criteria, as some co-housing is exclusively for single seniors (Choi & Paulsson, 2011) while other only for senior women (Arrigoitia et al., 2020). The Baba Yaga Model, established in Paris in 2012, has become widely known as co-housing for single senior women, designed with the purpose of empowering them while fostering a community (Caplan, 2022). Co-housing has widely been embraced in literature as a housing alternative to overcome isolation (Pedersen, 2015) and empower senior women in particular, as Labit (2009) explains:

“Today, more frequently childless than their mothers, outnumbering men, often on their own (divorced, widowed, single), their pensions on average 40% lower than those of men, women see mutual assistance within a co-housing community as one way of attaining better conditions for ageing well” (p. 33)

Many cities are implementing policies that support *ageing in place*, enabling senior citizens to stay at home for longer, instead of moving to residential care homes or nursing homes. The needs of seniors are moving from constant assistance to the simple security of having somebody around, possibly with assistance brought home (Rusinovic et al., 2020). Labit (2015) criticizes that co-housing often revolves around the socio-cultural elite, as co-housing projects should be open to combine institutional care, in order to benefit those who are less privileged. Senior co-housing has also been mixed together with student housing, “to alleviate the solitude of the elderly and the housing pressure for the young” (Tummers, 2015, p.7). Although the focus on seniors is important, intergenerational co-housing in France, Germany and the Netherlands has been quite successful for seniors as well (Tummers, 2015; Rusinovic et al., 2020). Steels (2015) stresses that cultural and socio-economic differences may influence the implementation of age-friendly interventions, as senior people’s cultural relations to the home, community and personal independence may vary between countries (Luciano et al., 2020).

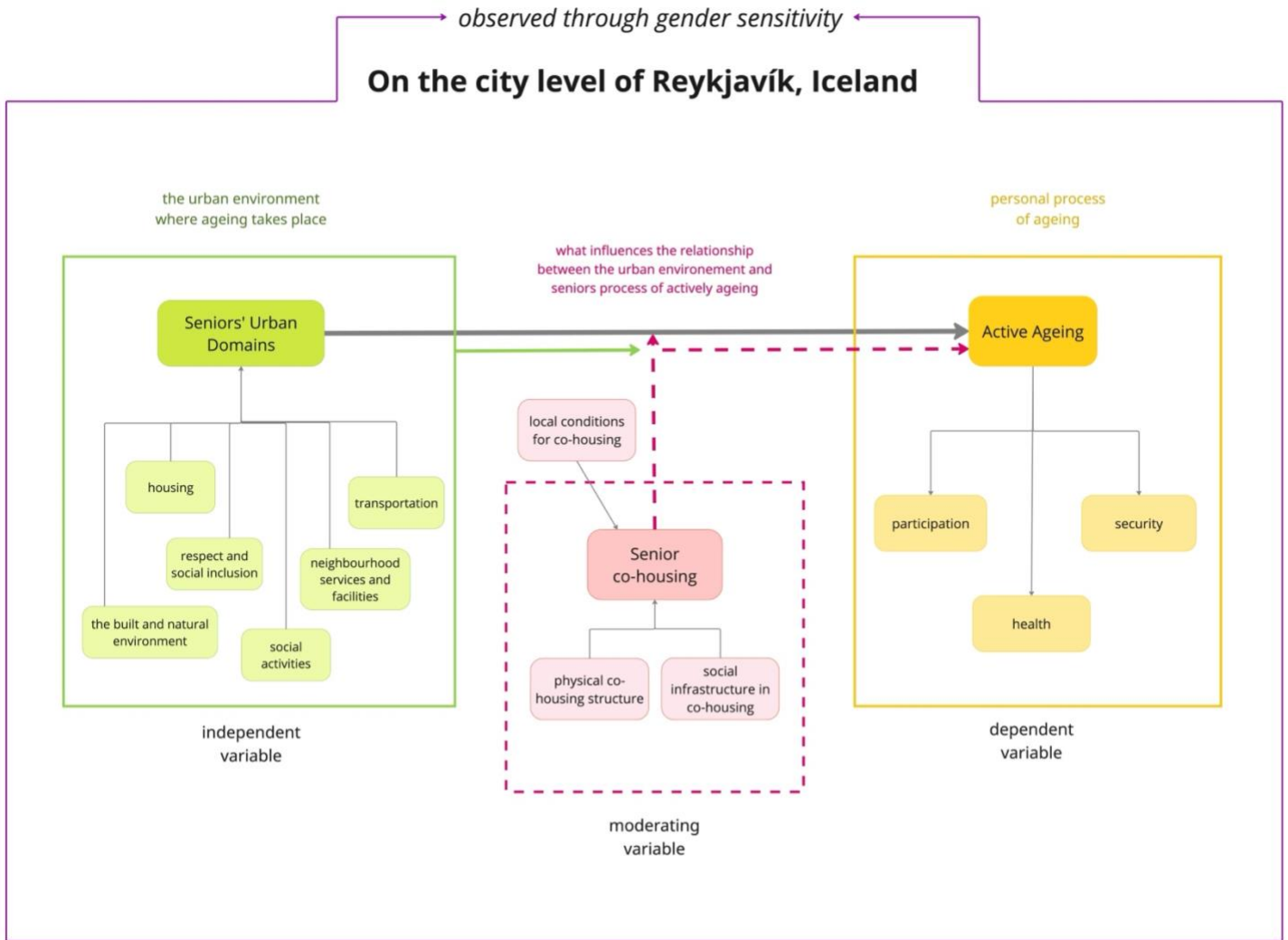
Drawing from diverse literature on co-housing for seniors, the concept *senior co-housing* will be used in this research, defined as: “Co-housing that is targeted for seniors but can be both intra- or intergenerational. It can range from bottom-up creation and self-management by the residents, to being built by private or public entities and having institutionalized structures. It is a cluster of private homes with shared spaces” (Author, 2023; Labit, 2009; Rusinovic et al., 2020, Tummers, 2015; Vestbro 2010). The concept is further operationalized in chapter 3.2 (figure 9).

2.4 Conceptual Framework and Hypotheses

The main purpose of this study is to explore how the urban domains in Reykjavík influence seniors’ ageing process in the city, and how senior co-housing could impact the ageing population. As reflected on in the previous chapter, the concept *active ageing* (dependant variable) has widely been utilized to define the ageing process for seniors (WHO, 2002). Cities worldwide aim to be more age-friendly by mapping out their urban domains (independent variable) and assess how they are affecting the seniors citizens, but there remains the need to develop adequate indicators within each local context. The home becomes an important urban domain for seniors as they age, as well as accessibility to physical and social features. Based on that understanding, I predict that *senior co-housing* (moderating variable) can serve as an age-friendly initiative that facilitates the relationship between the urban domains and the ageing process for seniors.

This study therefore explores the three main variables and how they interact within the city level and socio-cultural context of Reykjavík, Iceland. Furthermore, the variables are analysed through gender sensitivity, paying attention to gendered biases and issues. The relations between the variables are illustrated in a conceptual framework (see figure 6).

Figure 6: Conceptual Framework



Source: Author, 2024

3. Research Design and Methodology

3.1 Research Design

This study utilized a social research design to explore a case study (Loseke, 2017) in Reykjavík, the capital of Iceland. The case was typical, as it aimed to capture everyday experiences and feelings of senior people towards the urban landscape in Reykjavík (Bryman, 2016). Likewise, it explored the conditions for co-housing and how it was implemented for seniors. Accordingly, it was a relevant research strategy to gain in-depth understanding of the personal and complex ageing processes that seniors experience in Reykjavík.

Gender sensitive approaches were iteratively practiced throughout the research process, paying attention to the different rights, roles and responsibilities of the genders, that affect socio-cultural norms, biases and discriminations. These approaches ranged from representing female researchers in the literature review, choosing appropriate data collection methods, framing questions, to analysing data and presenting the results (Hofman & Trbovc, 2015).

The research had exploratory and descriptive research aims (Van Thiel, 2014). The concepts of *active ageing* and *co-housing* were explored, described and defined within the particular context of Reykjavík. The urban domains in the city of Reykjavík were likewise explored and described. Finally, the research aim was to explore how the urban domains on the city level of Reykjavík affect AA among seniors, and how senior co-housing can affect the strength of the relationship between the two.

3.2 Operationalization

After conducting a literature review on AA, urban domains and co-housing for seniors, the concepts were refined and operationalized to lay the foundation for data collection and further data analysis. In the operationalization table (figures 7, 8 & 9), the indicators were adapted into measurable entities, to measure the conditions of the concepts and variables. Although the concepts were fixed, the indicators were reiterated throughout the data collection process. Interview guides were formed according to the operationalization table (see appendix 2). The operationalization table creates a framework for the whole research process, increasing transparency, internal validity and reliability (Van Thiel, 2014).

Figure 7: Operationalization of independent variable

Concept / Variable	Indicator	Sub-Indicator	Measurements	Sources of data	
Seniors urban domains: “The city’s structures, environment, services and policies, categorized by the affects that they have on senior people’s daily lifes. They are based on multiple determinants, such as personal, behavioural, social and economic determinants, as well as the physical urban environment and socio-cultural landscape. The domains are interconnected and have to be adopted to the local context (Author, 2024; Plouffe & Kalache, 2010; Steels, 2015; WHO, 2002; 2007; 2023; Wood et al., 2022).	Housing	Housing type	Single family home or apartment / senior co-housing / other housing for seniors	Adapted by the Author in 2023 and 2024	
		Housing Tenure	Rent / home ownership		
		Living arrangement	Alone / with a partner / with family		
		Duration of occupancy	In years		
		Acceptability	Description of how the housing meets their physical, social and mental needs		
		Affordability	Feelings towards and capacity to deal with housing expenses such as rent, property charges and maintenance		
	Neighbourhood services and facilities	Availability	Identifying neighbourhood services and facilities	From literature review sources (Bjornsdottir et al., 2012; Buffel & Phillipson, 2016; Luciano et al., 2020; Nordbakke, 2013; Oswald et al., 2007; Plouffe & Kalache, 2010; Steels, 2015; WHO, 2002; 2007; 2023; Wood et al., 2022)	
		Accessibility	Description of distances / Use of transportation		
	Transportation	Availability	Identifying means of transportation: private car / public transportation / relying on family members / other services		
		Acceptability	Satisfaction towards the reliant means of transportation		
	The built and natural environment	Indoor accessibility	Absence of stairs / Presence of ramps		And adjusted with findings from primary data collection, four focus groups with seniors, three expert interviews and one follow-up individual interview.
		Outdoor accessibility	Accessible pathways and recreational areas / Visual perceptions and aesthetics		
		Effects of weather conditions	Behavioural changes due to weather / Effects on mental health		
	Health services	Availability	Identified utilized health services		
		Accessibility	Access to doctors’ appointments and treatments		
		Affordability	Costs of doctors’ appointments or treatments		
	Social activities	Availability	Identifying social activities		
		Accessibility	Location / Use of transportation		
		Age composition	Intragenerational / Intergenerational		
	Respect and inclusion	Respectful services	Experiences with services where they feel respected and included, or lack thereof, such as discrimination		
		Public education	General awareness about seniors’ perspectives, experiences and realities		
Intergenerational social spaces		Social spaces for all age groups			

Figure 8: Operationalization of dependant variable

Concept / Variable	Indicator	Sub-indicator	Measurements	Sources of data
Active Ageing Definition: “a life-long personal process shaped by several factors that, alone and acting together, favour health, participation and security in older adult life” (WHO, 2007, p. 1)	Health	Mental health	Perceptions of life satisfaction and maintaining and/or struggling with calmness, energy, quality of sleep and daily enjoyment or interests.	Adapted by the Author in 2023 and 2024. From literature review sources: (Bettio et al., 2013; Narushima et al., 2016; Paz & Tur-Sinai, 2017; UN, 2019; WHO, 2002; 2007; 2023), And adjusted with findings from primary data collection (4 focus groups with seniors, one expert interview and a follow-up individual senior interview) and secondary data sources on seniors in Reykjavik.
		Social health	Expressions of social connectedness and feelings of sense of community or lack thereof, such as loneliness or social isolation. Affected by social interactions and participation.	
		Physical health	Individual ability for daily mobility. Affected by declining health, illnesses and health conditions.	
	Participation	Social participation	Person’s involvement in activities or spaces that provide social interactions with others	
		Family interactions	Care to children, grandchildren or other relatives	
		Self-management and political involvement	Active involvement and contribution to society, e.g. by keeping up with news and advocating senior rights	
		Lifelong learning	Seeking courses, classes, workshops and such for educational purposes	
	Security	Social support and security	Access and availability of public and systematic support, as well as support from family, friends, neighbours and close circles.	
		Financial security	Identifying the national seniors’ income system, such as pension funds and subsidies	
			Individual assessment of financial situation, pensions and disposable income after reaching retirement age	
		Perceived safety	Individuals’ judgements of safety in circumstances and locations, as well as perceptions of physical safety	
	Security through technology	Identifying technological features that can enhance security		

Figure 9: Operationalization of the moderating variable

Concept / Variable	Indicator	Sub-indicator	Measurements	Sources of data	
Senior co-housing Definition: Co-housing that is targeted for seniors but can be both intra- or intergenerational. It can range from bottom-up creation and self-management by the residents, to being built by private or public entities and having institutionalized structures. It is a cluster of private homes with shared spaces (Author, 2023; Labit, 2009; Rusinovic et al., 2020; Tummers, 2015; Vestbro, 2010).	Local conditions for co-housing	Definition of co-housing	According to official documents and previous research	Adapted by the Author in 2023 and 2024.	
		Structure of existing co-housing projects	Top-down / bottom-up Self-management / serviced		
		Cultural context of housing	Cultural perceptions towards housing, such as: Collaboration / co-operation / co-management Ownership / sharing Personal space Sustainability practises		From literature review sources: (Arrigoitia & West, 2020; Brenton, 2001; Choi, 2004; 2011; Glass, 2009; Labit, 2009; Rusinovic et al., 2020, Tummers, 2015; Vestbro 2010).
		Frameworks for co-housing	Legal frameworks and regulations / Public and municipal collaborations / Support and subsidies		
	Physical co-housing structure	Shared spaces	Access to the shared spaces / Quality of the shared spaces	And adjusted with findings from primary data collection (4 focus groups with seniors, 3 expert interviews) and secondary data sources on co-housing and senior co-housing in Reykjavík.	
		Inclusive architecture	Design that meets senior people's needs		
		Additional services	Amenities e.g. hair salon, pedicurist, cafeteria		
	Social infrastructure in co-housing	Social utilization of shared spaces	Social activities in co-housing		
		Management of social infrastructure	The residents / Municipality / Family members		
		Social intentions / expectations	Intergenerational / intragenerational Gender inclusive / exclusive		

3.3 Data Collection Methods

The research utilized primary and secondary data sources. Primary data was collected through qualitative interviews (focus groups, individual and joint interviews) while secondary data included existing literature, reports and statistical data on senior citizens and co-housing in Reykjavík.

3.3.1 Primary Data Collection

Qualitative research methods were chosen for primary data collection, as they aim to understand people's words, beliefs, experiences and feelings in a perceptive and interpretative manner (Van Theil, 2014). The respondents perspective was carefully examined, with an emphasis on the context of Reykjavík (Bryman, 2016).

Multiple methods of interviewing were conducted, such as focus groups, individual interviews and a joint interview, depending on the sample and purpose of the interview (Bryman, 2016). All of the interviews were semi-structured with open-ended questions, which can be helpful when closely examining a case. The interviews were mostly conducted in

Icelandic, as preferred by the participants and researcher to ensure data reliability. The interview guide (appendix 2) was based on themes from existing knowledge while allowing for flexibility and findings beyond the frame (Bryman, 2016). Respondents received detailed information about the data collection process and analysis before giving consent to participating (see appendix 2).

3.3.1.1 Joint and Individual Interviews

Four pilot interviews were conducted in Iceland in May before the data collection started, to gain deeper insight into the landscape for seniors and co-housing in Reykjavík. They helped frame the interview guide and sample selection (Van Thiel, 2014). The individual interviews were conducted with experts and one follow-up interview was with a senior. A joint interview method was chosen for one of the interviews out of convenience and interests of two similar experts to participate (Roulston, 2021).

3.3.1.2 Focus Groups

Primary data collection began with focus groups among the senior population (see appendix 1). While ageing is a personal process, seniors are a large and diverse group. The focus group method was therefore chosen to pursue external validity (Barrett & Kirk, 2000; Rodriguez et al., 2011). Numerous studies have used focus groups to approach the senior population (Plouffe & Kalache, 2010; Rusinovic et al., 2020; Van Hoof & Marston, 2021) and it is a leading research method to develop age-friendly frameworks (WHO, 2007; Plouffe & Kalache, 2010).

3.3.1.3 Sample Selection

Non-probability sampling was used to ensure the sample's representativeness and the participants relevance to the study (Van Thiel, 2014). The sample process was targeted towards (1) senior people and specialists working with seniors and (2) people with knowledge and/or experience working towards co-housing in Iceland.

The experts were discovered while gathering secondary data and approached by purposive sampling. For the senior population, the methods were a mix of purposive, snowball and quote sampling (Bryman, 2016) (see appendix 1). The expert on geriatric care became a key informant through a pilot interview, for reaching out to the senior population. They led the researcher to the community centers and through snowball sampling, the managers at each community center chose the participants for the focus groups. The managers received detailed information about the interviews and were given a criteria for selection:

- a proportion (hopefully $\frac{1}{2}$) of the group should live in the apartments connected to the community center (co-housing)
- more than half of the respondents had to be women.

An introductory pamphlet (appendix 2) was sent out to the managers to deliver to the participants, to avert any misunderstandings or last minute withdrawals.

An age criteria had to be decided, since senior citizens is an elastic term that varies culturally. In this research, the criteria was 60 years and older, chosen on the grounds that multiple associations, activities and housing options open up to people at 60 years of age, although formal retirement age in Iceland is at 67 years. It likewise supports the metrics that

WHO used while developing their age-friendly city checklists (60 years and older) (WHO, 2007). Primarily, the research was supposed to focus solely on women, but after consideration and to avoid bias, men were brought into the interview at Borgir based on the equal participation between men and women in that particular community center (Hofman & Trbovc, 2015).

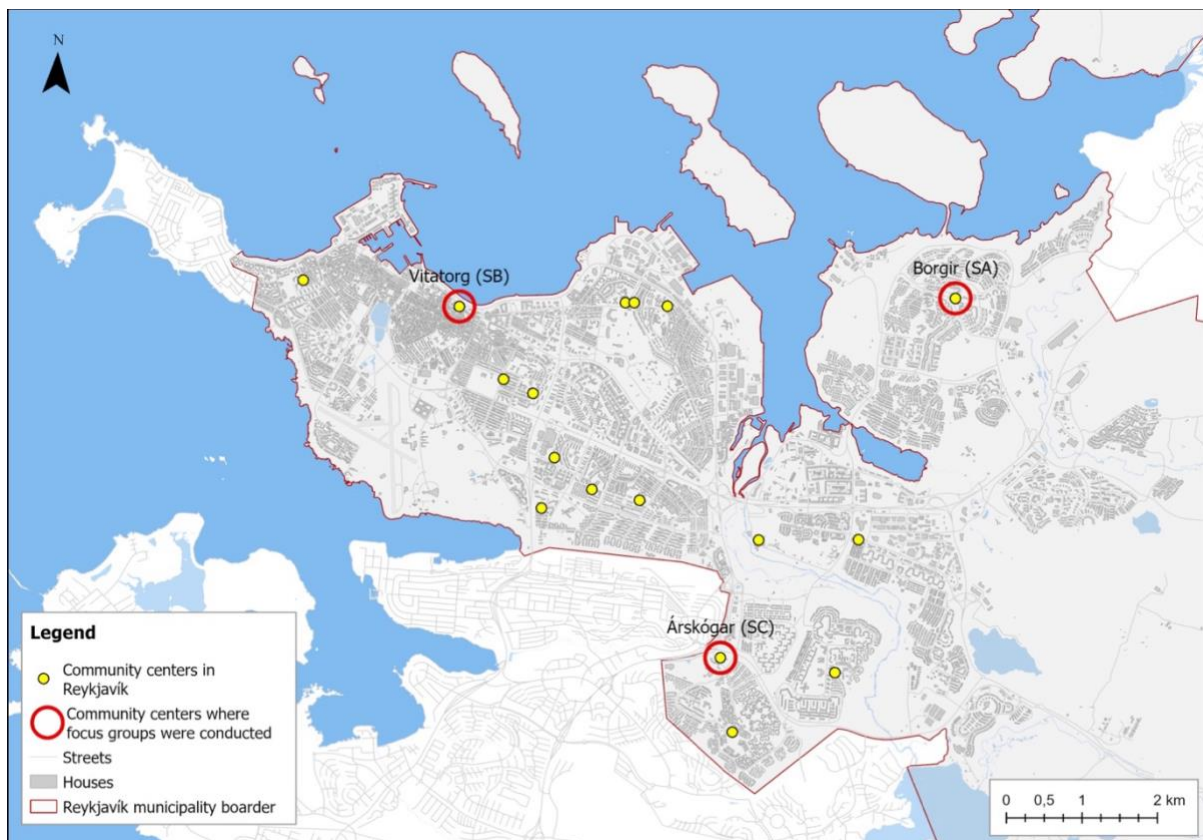
3.3.1.4 Description of the Sample

The findings presented in this research are interpreted from 27 respondents: 23 seniors (21 women and 2 men) and 4 experts. 8 interviews were conducted in total, from the 19th of June till the 4th of August in 2023 (see appendix 1).

The senior participants combined had a 30 year age span, varying from 61 to 91 years old. Most of the seniors were 67 and older but the participants in focus group YS were 61-67 years old. Due to the differences in the responses, reflecting life perceptions and behaviours, from the older and the younger seniors, the latter will be referred to as *younger seniors* in the data analysis and conclusions, while the others simply as *seniors*. Further information about the participants is in appendix 1.

The community centers where focus groups SA, SB and SC were conducted, were distributed over the city (figure 10). The City of Reykjavík manages 17 community centers which are open to the general public but the services are targeted towards the senior population (Reykjavíkurborg, n.d.) and particularly accessible for the senior co-housing residents.

Figure 10: Map of Community Centers in Reykjavík and where focus groups were conducted



Source: Author, 2023, adapted from LUKR, the GIS database of the City of Reykjavík.

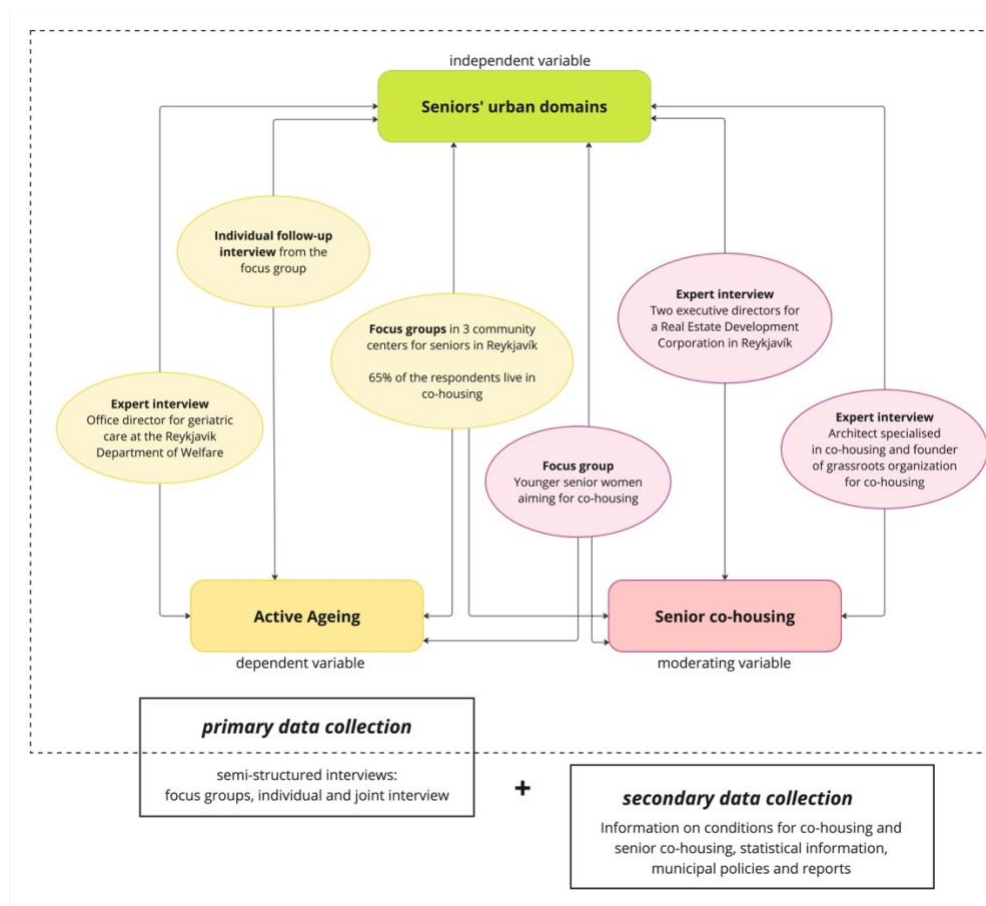
3.3.2 Secondary Data Collection

Secondary data was used to support the primary data collection and therefore modified alongside the analysis (Van Thiel, 2014). The sources were mainly on local conditions for co-housing in Reykjavík (Flender, 2019; Hrafnisdóttir, 2018) and information on existing senior co-housing (Department of Welfare, 2021). Other documents included statistical information from open sources by the National Statistical Institute of Iceland (<https://hagstofa.is/>), as well as municipal policies and organizational reports on the topics of seniors and co-housing in Reykjavík (City of Reykjavík n.d.; 2016; 2021; 2022a; 2022b).

3.4 Research Analysis

Confidential documents were organized, encrypted and stored in OneDrive. The interviews were transcribed manually, since no accurate software transcribes Icelandic. The transcripts were analyzed by using Atlas.ti, a computer-assisted qualitative data analysis software (CAQDAS) (Paulus & Lester, 2016). The transcripts were digitally coded with priori coding based on the indicators from the operationalization table. Open coding was conducted for deeper interpretation of the data (Bryman, 2016). Gender-sensitive language was used when writing up the analysis and conclusions. Data analysis was conducted over 15 months, from June 2023 till August 2024. Figure 11 shows how triangulation of interview methods was used to analyse the variables.

Figure 11: Triangulation of Interview Methods



Source: Author, 2023

3.5 Validity and Reliability

In case studies, the researcher is one of the main research instruments and as such, the quality, validity, reliability and replicability of the research is highly dependent on the researchers performance (Bryman, 2016). I kept that in mind and practiced reflexivity to ensure reliability, by critically reflecting on the knowledge as it was generated throughout the process. Notes were taken after each interview, reflecting the main findings and researchers performance, and to ensure replication of the results. Before starting official data collection, pilot interviews were conducted with the experts, to enhance reliability (Van Thiel, 2014). Focus groups were chosen as a research method with the senior sample, in order to strengthen the external validity (Rodriguez et al., 2011). As confidentiality is often a challenge in focus groups, the researcher emphasised before the interview that the information shared should be kept private among the group members (see appendix 2).

To ensure external validity, the managers were well informed of the nature of the interview and criteria for the participants. Despite those efforts, the researcher worried about the representativeness of the senior population (Bryman, 2016). An individual follow-up interview was conducted with a senior to gain in-depth information about more sensitive topics. The follow-up interview was helpful but did not contribute greatly to internal nor external validity. In the end, exhaustive primary data was collected and through triangulation with secondary data, the researcher believed that saturation was achieved (Van Thiel, 2014).

3.6 Expected challenges and limitations

The researcher suspects that challenges may occur. Firstly, due to the complexity of the variables, the indicators are multiple. Through the semi-structured interviews and focus groups, it might remain a challenge to receive in-depth information on all indicators.

Secondly, the primary data collection partly takes place in Reykjavík, Iceland. Limited time will be to accumulate data and gathering participants might be a challenge, as data collection will take place from May to July during summer holidays. Gathering representative focus groups for the senior population might also be a challenge. The researcher has limited experience interviewing senior people and might face challenges, e.g. when approaching sensitive topics or being unaware of generational differences.

Most of the interviews will be conducted in Icelandic, and therefore the data influenced by the translations from Icelandic to English. Data analysis might be time-consuming, since there is no applicable software that transcribes Icelandic audio to text. This might affect the timeline of the data collection and analysis and measures may have to be taken accordingly.

4. Results, analysis and discussion

The following chapter analyses the responses from the qualitative primary data collection, supported by secondary data sources on seniors and co-housing in Reykjavík. The interviews and respondents will be referred to by the corresponding code (appendix 1).

Legend	
Seniors	Experts
SA (1-6) – Senior Focus Group, Community center A	EC (1-3) - Expert on co-housing
SB (1-6) – Senior Focus Group, Community center B	ES - Expert on seniors
SC (1-7) – Senior Focus Group, Community center C	
YS (1-4) – Younger Seniors Focus Group	

4.1 Seniors' Urban Domains

ES has years of experience of working with senior people. When asked what she values the most for AA in Reykjavík, she replied: “What I think matters is that the individual can take good care of himself but more importantly, that we as an urban society have to actively advocate for good urban conditions” (ES, July 2023)

4.1.1 Housing

The seniors housing types were single family homes (N=5), apartment in residential building for people 50+ (N=2) and co-housing (N=13). 75% of the seniors were homeowners (N=15) and 80% of them lived alone (N=16). The duration of occupancy span from 60 years down to 2 days (see appendix 1).

The seniors generally expressed satisfaction towards their housing, regardless of the housing type. Most residents in co-housing felt good living there (N=10), as SC4 said: “I would not have been here for 30 years unless I liked it here” (June 2023). Other made less of it: “just enough for one old woman” (SB5, June 2023). Some (N=5) shared that moving to co-housing was a change: “It was an adjustment coming from a big house and into this small one that’s only 50 m²” but added: “It grows on you and I feel very good here” (SB6, June 2023).

The reason some seniors moved from their previous homes was the presence of stairs (SB4-5). Most seniors living alone in single family homes wanted to stay for as long as they could (N=3), as SB1 said: “while I can walk the stairs” (June 2023). On the contrary, SA4 wanted to sell her house and move into co-housing but the high rent prevented it. If it were less expensive, she said: “Both because of the company and everything, to not have to think about if the roof is leaking or something else, I would go for it straight away! but confiscation of property is nothing I like” (SA4, June 2023).

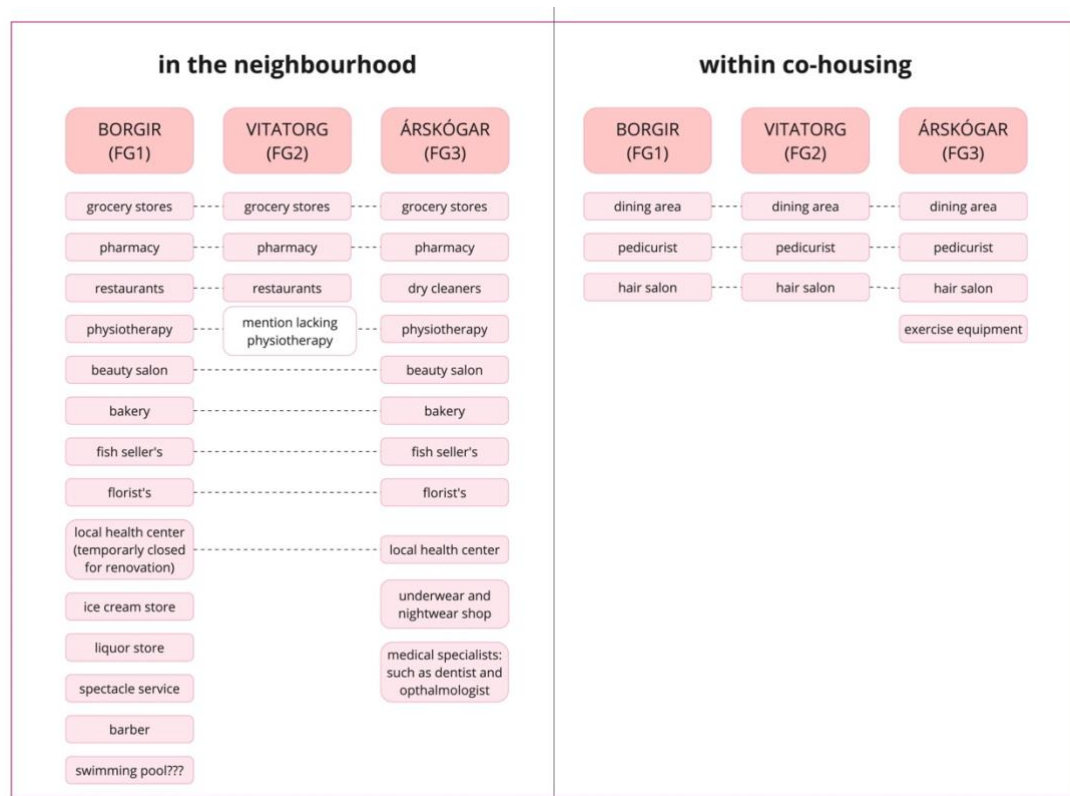
Most agreed that the rent in co-housing is too expensive (N=11): “people are having difficulties carrying expenses and therefore the pensions won’t be much, it just goes into rent” (SA6, June 2023). Despite the rental prices differing between co housing, all of the renters (N=4) agreed that the rent was too expensive. “We’re all very happy except around the end of the month” (SA5, June 2023). These findings align with Labit’s (2015) criticism on co-housing, that it tends to be expensive and not benefit the less privileged.

4.1.2 Neighbourhood Services and Facilities

The community centers were distributed in the city (see figure 10), showing perspectives from residents in different neighbourhoods. The satisfaction with neighbourhoods differed.

Respondents in SA described having access to “everything” in the neighbourhood in terms of services (SA1-6). Located in the central downtown area, the respondents in SB shared difficulties with accessibility to shops and services (see chapter 4.1.4). Instead of exploring their surroundings on their own, they preferred to do it through planned trips with the community center (SB3-6). Respondents in SC expressed satisfaction with the walking paths in the neighbourhood for facilities, amenities and leisure (SC1-5), but walking to the shopping center can be a challenge for some (SC7). Figure 12 illustrates the neighbourhood services and amenities, identified by the respondents.

Figure 12: Availability of services and facilities, in the neighbourhoods and within co-housing



Sources: Focus groups SA, SB & SC

The dining area served as a core neighbourhood/co-housing facility, utilized by all of the senior respondents to get warm meals during lunch (N=19). The food spark lively discussions, regarding satisfaction and quality. Most (N=12) shared expecting: “normal homemade food, like we had in the old days and cooked ourselves” (SC6, June 2023). Many (N=9) disapproved with the food: “Some of us have been in the kitchen for FIFTY years and I would have NEVER served my husband and children what I’m sometimes served here” (SB6, June 2023). Nevertheless, many (N=9) emphasised the social value of coming to lunch: “It’s not only about eating the food, but meeting people, having the company” (SB1, June 2023).

One of the City's age-friendly actions, is allowing all senior citizens free access to the swimming pools. ES is proud of the initiative, as it serves people's physical, social and mental health. She describes the communities in the hot tubs as the "heart of the city" (ES, June 2023). Some seniors valued the swimming pools greatly (SA1, SA3), while others (N=2) could not imagine going there: "All sorts of people and the dirt and the filth" (SA6, June 2023). The follow-up interview with SB1 revealed her not feeling comfortable going after she had a mastectomy and YS3 describes the swimming pools as a stereotypical senior activity that she does not relate to.

The younger senior focus group was not connected through a community center, but are a group of friends (appendix 1). They (YS1-4) believe that living central is an important feature to being active and consider the suburbs as barriers for social interactions, as YS3 said: "if you live anywhere but central and you are old, you just live in your own little tower and can't reach land or shore" (July, 2024). The co-housing experts likewise shared their worries about the quality of neighbourhoods for seniors: "For years, Reykjavík city's planning was about making enormous neighbourhoods with no services, just some single family houses with dead-end streets, so services were terribly far away" (EC2, June 2023).

4.1.3 Transportation

The main means of transportation were the private car (N=11); transportation services for seniors (N=8) provided by the City of Reykjavík and; busses (N=5), which are the only public transportation available in Reykjavík. Some mentioned relying on family members (N=4) but others didn't see that as an option (N=5): "I have four children here in Reykjavík and they all work a full time job, I would NEVER think of asking them to leave work to drive me, not a chance" (SA5, June 2023).

57% of the seniors drove a private car (N=11) and 43% did not drive (N=9). Some of those who drove their private car argued that was their only choice (N=3):

My energy doesn't allow me to take the bus, to have to walk long distances... Of course I would like to be more independent and ride a bike or something, but I have to see my ability for what it is and work with that, which in my case is the car. (SA3, 2023 June)

SA4 shared that losing the drivers license can influence people's mobility: "I have witnessed people losing their, can't drive or something and it's a HUGE RESTRAIN, it's almost like a prison" (SA, June 2023). Some respondents expressed missing their car (N=4). These findings support Nordbakke's (2013) understanding, that cars can help maintain seniors independent mobility. When seniors health doesn't allow them to drive or use public transportation, they can apply for transportation services, provided by the municipality. Many expressed satisfaction towards those services (N=8). Although a few respondents use public transportation occasionally (N=5), none of them use it as their primary transportation source.

Although the costs for transportation services were discussed, affordability was not a significant indicator. Additional finding in senior focus group, was that the downtown area lacks parking spaces (N=9), which the seniors link to exclusion of disabled and senior people: "it's not presumed that people who can't walk are going down town" (SC5, June 2023). "This downtown is only for those walking and cycling" (SA2, June 2023).

4.1.4 The Built and Natural Environment

When asked what characterizes the urban environment in Reykjavík, the seniors shared that the weather can be a barrier, affecting physical safety (chapter 4.2.3.3). The younger seniors agreed: “The weather in Iceland magnifies seniors people’s isolation, they can’t get out in awful weather with ice-covered grounds” (YS3, June 2023). The weather affects people’s physical mobility and participation, aligning with Bjornsdóttir et al. (2012) findings. EC3 describes the situation in Reykjavík:

There's a lot of wind and rain, rather cold. Buildings are far apart and don't offer shelter in many places.. so most people drive everywhere and the whole transit infrastructure is built with motorised traffic in mind. Walking long distances in the weather in poor infrastructure for pedestrians is therefore not good. (June 2023)

When it comes to outdoor spaces, many (N=9) use the walking paths in the neighbourhood, some (N=5) like going to parks and a few (N=2) utilize the public swimming pools (see chapter 4.1.2). The seniors emphasised the quality of pavements for accessibility in green spaces: “some of us are disabled and would like to go to the park but you don’t drive a wheelchair onto the grass!” (SC5, June 2023).

For indoor spaces, the presence of stairs or raised platforms caused barriers in housing, social spaces, facilities and neighbourhood services. While SA4 wanted to find another housing was because of stairs, SB1 considered the stairs in her home to help her stay active. Some (SB2-3, SB6) expressed that stairs and absence of ramps is a hindrance to get into stores. While SB6 walked the main shopping street in downtown Reykjavík daily, SB3 preferred to drive to the nearest shopping mall.

Visual perceptions and aesthetics played into the overall experience of the built and natural environment. Some (SB4-6) recognized the quality of having a mountain and sea view from their co-housing apartments. On the other hand, the three senior focus groups shared negative perceptions towards the downtown area: “It’s more than damage, it’s destruction!” (SA1, June 2023). Their reasoning was the demolition of older buildings, new buildings being too high and too densely built, creating wind and blocking the sun (N=13). SA1 shared feeling nauseous when walking around downtown: “It felt like the clusters were collapsing on me” (June 2023). Respondents in SB(1-4) recalled good old times when they were younger and enjoyed strolling around downtown.

4.1.5 Social Activities

Social activities were generally described to facilitate social participation and AA. The activities were mainly intragenerational and the respondents frequently referred to social activities within the community center (see chapter 4.3.4)

Most identified social activities were in the community centers. The most frequently mentioned ones were walking groups, bookclubs, dancing and exercise classes, card playing (N=10) and handiwork such as knitting, sewing, quilting, painting, watercolouring and carving (N=8). Some less mentioned were a golfclub, computer learning class and glass art making (N=5), as well as bowling and throwing darts (N=3).

Outside of the community center, most respondents referred to spaces they visited on an organized trip with the community center. When asked why they mostly use that option, SB5 and SB6 answered “it’s just so comfortable” (June 2023). Others mentioned going to the theater (SB1, SC1), museums (SB4-6) and concert venues (SB4, SC4). Many mentioned going

to a particular restaurant downtown (Jómfrúin) for dinner around Christmas and jazz concerts in the summer (N=7), but accessibility downtown can be an issue, e.g. due to lack of parking spaces (see chapter 4.1.3). YS1 described the restaurant as a special case: “it is very unusual... if you look over the crowd it’s just middle-aged and very old people!” (July 2023) (further elaborated in chapter 4.1.7.).

4.1.6 Health Services

Health services were identified through the range of services, accessibility and affordability. The seniors addressed the variable as very important for AA. The health care system needs improvements (N=16), so much that some respondents turned to humor: “The health care system just seems to degenerate, even faster than we do” (SA4, June 2023). Availability of doctors and nurses is generally lacking (N=12), as well as general practitioners (N=8) and waiting times for appointments are too long (N=14), like SA1 said: “you get the feeling that once your appointment finally arrives, you would have already risen from the dead” (June 2023). Some booked appointments months ahead of time without having symptoms (SA4, SC1-3), just in case they would when the appointment arrived.

The seniors shared a wide range of health conditions and seeking appointments with dentists, ophthalmologists, audiologists, geriatricians, cardiologists, neurologists, dermatologists and oncologists (N=8). Some shared experiences of age discrimination from doctors (SA3, SA5, SB6) (more in chapter 4.1.7). Others shared experiences of overcrowded hospitals and emergency rooms, having to wait in the ambulance before getting in (SA2) and lacking the privacy to rest and speak to doctors (N=5). A few shared emotional stories of sicknesses (N=4) and the burdens of costs for aid (N=7) while one senior with multiple health conditions described the health care system as great and affordable (SB4).

Home care was addressed as an available option to all seniors. Some had used services such as assistance with cleaning, bathing, medicine portions and getting in and out of bed (N=6). When living with a partner, receiving home care can be more difficult (SA3-4), as the system expects couples to take care of each other, regardless of their age or health. Most of the seniors (N=12) agreed that the health care system generally lacks respect, empathy and privacy towards seniors.

4.1.7 Respect and Inclusion

The seniors explained that: “ageing often comes with having sensitive personal and physical problems” (SA2, June 2023). The seniors described situations where these vulnerabilities are not respected, most often through health services and general lack of knowledge. In health services, the poor conditions in the hospitals and communication with doctors left them feeling vulnerable and/or disrespected. When discussing doctors, SA5 said: “Some look down on old people” (June 2023). SB6 shared an incident where she walked into the doctors office: “the first thing he [doctor] said to me when I walked in was “I can’t do anything for you” (June, 2023) and SB1 and SB5 both added: “yes because you’re too old” (June, 2023). SA5 likewise shared being rushed out of an appointment. The seniors emphasized that sensitive problems have to be treated with human respect: “We need humanity in the services” (SA2, June 2023).

The seniors experienced lack of public education towards seniors issues. Some (SA1, SA3-4) recalled incidents in public where seniors physical movements were mistaken as them being drunk e.g. when a person was having a hypoglycemic episode. Many seniors (N=11) believed that more intergenerational interactions could facilitate public education: “What needs

to be enhanced, is the communication between seniors and the young people, because many young people don't understand us and we don't understand them" (SA2, June 2023).

The younger seniors (YS1-4) all experienced generational barriers in family relations and friendships: "What characterizes Icelandic society is this age division, everybody is compartmentalized according to age" (YS2, June 2023). YS2-3 linked it to the lack of intergenerational social spaces: "Entertainments are only for young people and there is nothing more... there isn't this flow that makes you feel like you belong in the society" (YS3, July 2023). YS3 experienced this as one form of age discrimination. A step towards a more inclusive and respectful society would be facilitating intergenerational social spaces.

4.1.8 General Themes Towards Urban Domains

When addressing topics were f.e. availability, affordability, accessibility to resources was lacking, the seniors often stated the problems but tended to minimize the topic throughout the discussion and accepting things as they are. When talking about the lack of accessibility in the downtown area, one voice towered over the others:

It is so different when you become this old, you just have to accept that... YOU JUST HAVE TO ACCEPT THAT YOU HAVE BECOME OLD. I am 90 years old and you just try to do what you can do (SC2, June 2023)

Another 90 year old woman was asked how she feels about not being able to go outside in winters when the pavement is icy. She replied: I think it's okay... I'm so old that it's just not condonable that I'm outside in these situations".

A similar theme was identified when addressing gendered biases, such as in pensions (further reflected in 4.2.3.2). The senior women recognized the bias but some did not look at it as a problem: "Men have always had a higher income than women so it comes naturally, you get less [pensions]" (SB1, June 2023) and SB4 added: "It is in fact normal, they have paid off higher salaries and paid for longer [to the pension funds]" (June 2023).

4.2 Active Ageing

The life-long process of AA comprises three indicators; health, participation and security, that act interconnectively and separatively (WHO, 2007).

4.2.1 Health

When asked what AA means to ES, she answered:

I see the geriatric care issues as health, it is ALL about the HEALTH! and with that I mean the definition of health as physical, mental and social... It is not enough to treat people physically; we also need to think about the mental and social aspects and intertwine it all (July 2023)

4.2.1.1. Mental Health

Mental health is a personal and sensitive subject, and as such it wasn't appropriate to directly address in the focus groups. Instead, the indicator was analysed inductively by identifying strong feelings and/or insecurities towards the urban domains and senior co-housing.

As explained in chapter 4.1.7, ageing comes with a certain vulnerability. Seniors experienced age discrimination and disrespect from doctors, which affected some deeply: "I was close to crying when I got home" (SB6, June 2023). The weather in winters can also be mentally challenging (N=6).

The only times the respondents spoke directly about mental health, was when talking about the positive effects of social interactions and connectedness, and the importance of the community centers:

SC7: Being in a community like this has a great effect on mental health

SC2: To socialize with people

SC4: It will be proven again and again that man is the joy of a man¹ (SC, June 2023)

Similar views were identified in the other community center focus groups: "I come almost every day and if I'm somehow not feeling good, then I'll definitely come here and talk it out" (SA4, June 2023). SA4 likewise said: "I allow myself to declare that it [community center] helps a lot, a lot of people" and S3 added: "it helps for the mental side" (June 2023).

4.2.1.2. Social Health

Some of the main work that the ES has been doing in her line of work with seniors, is supporting independent living and counteract social isolation that seniors are vulnerable for:

At this age, the partner might pass away, the children have enough on their plate and then the friends pass away too, so these situations increase the risk of people isolating and not having social interactions on a daily basis (ES, July 2023)

When people age they have more time and need more opportunities to participate and interact: "It's like being a plant in a flowerbed, you need nutrition, rain and sun, and the social interactions are so much of the nutrition that people need." (ES, July 2023). The long term affects of social participation or lack thereof, affects seniors social health. Through the focus groups with seniors, the community centers proved their importance as a space that supports social health:

Having good access to a community center, it equals to many portions of medicine, to have good friends that come together and solve the world's issues over a cup of coffee, completely without the responsibility and everybody goes home cheerful (SA2, June 2023)

4.2.1.3. Physical Health

Changes in physical health and risk of disease is an unescapable part of ageing (WHO, 2002). "More years follow certain patterns. You are slower and your health can decline" (SA2, June 2023). Valuing physical health by measuring people's strength and mobility is sensitive and

¹ Old Norse saying (isl: maður er manns gaman)

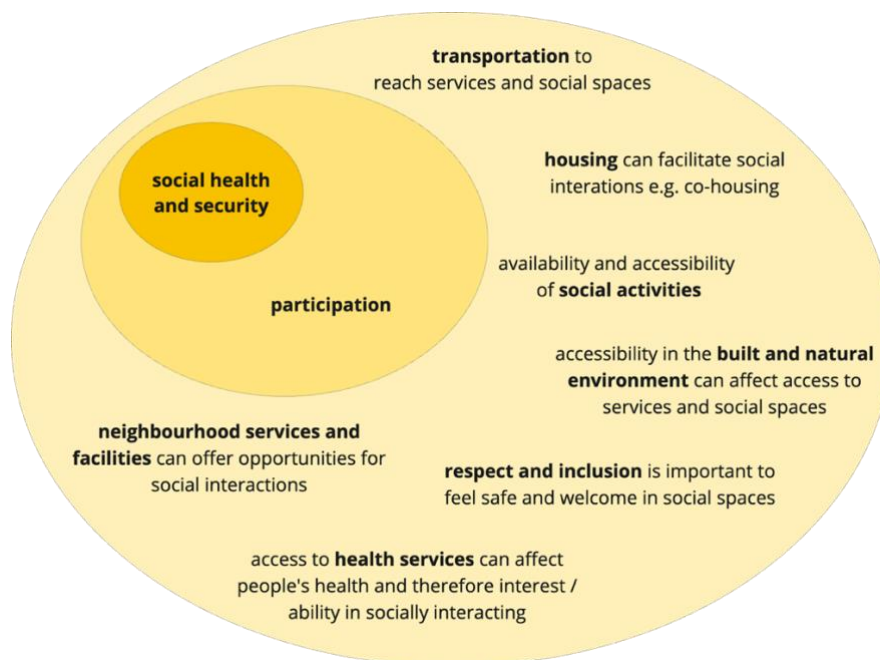
can risk leading to ableist discussions. The focus in this research was that the urban domains provide inclusive access, regardless of senior’s physical health.

As reflected on in chapter 4.1.6, the seniors share a wide range of health conditions and are reliant on health services. They mentioned all sorts of injuries, such as falling and fracturing bones (N=7) and therefore needing more access to health services than other age groups. Many shared difficulties with walking (N=9) which can lead to behavioural changes (e.g. means of transportation) due to lack of safety (chapter 4.2.3.3). Indoor accessibility and housing acceptability aligns with physical health, where the absence of stairs and presence of ramps is particularly important.

4.2.2 Participation

Participation is highly important for AA, like the 90-year-old respondent said: “It is vital to live life alive. Just participate in as much as you can” (SA5, June 2023). Interpreted from the findings, participation is the intermediate indicator between the senior urban domains and seniors’ social health, as it is dependent on the performance of the urban domains and determines social health. All urban domains can affect participation, both directly and indirectly, as shown on figure 13.

Figure 13: Connections between the urban domains, participation, social health and security



Sources: Primary data collection

4.2.2.1 Social Participation

When it comes to participation, social participation was the most significant. The community centers were identified as a valuable space to facilitate social participation. Many talked about the importance of participation (N=13), as SB4 said: “I’m not ready to lay with my toes in the air and wait to die, I couldn’t, I could live for 30 more years and therefore it’s so important to go out and be with people” and she added: “I made the informed decision when I moved here

to ALWAYS go downstairs for lunch” (June 2023). The lunch served as an incentive for the seniors to leave their homes and socially participate in society.

SA5 and SA6 emphasised the value of choice when it comes to social participation, especially for the co-housing residents: “if you want company then you can have it but you can also close off” (SA5, June 2023). In nursing homes and more institutionalized senior housing, people don’t always have the autonomy to choose (Rusinovic, 2020). Some senior co-housing residents barely show themselves or participate in social activities. “We invite everybody to join, everybody is always welcome and nobody is turned away. They just don’t want to join” (SC3, June 2023). Not all seniors utilize the community centers and reaching those less socially active remains a challenge (ES), both outside and within the co-housing. With more empathy and understanding towards seniors needs in society, through more respectful interactions and intergenerational activities (chapter 4.1.7), perhaps more seniors would feel welcome to participate in society.

4.2.2.2 Family Interactions, Self-Management and Political Involvement and Lifelong Learning

The seniors mentioned their children and grandchildren, shared their accomplishments and referred to positive interactions (N=8). YS3 shared that being around her daughter helps her feeling open, young and active. YS2 agreed:

to be around and respect younger people, listen to them and value their opinions, because they are so diverse and we have to be able to accept their knowledge without putting ourselves on this pedestal that we’ve lived longer and know everything better (July 2023)

As addressed in chapter 4.1.7, more intergenerational social spaces could encourage seniors to participate more in society, making them feel like they belong.

Self-management and/or political involvement was identified in terms of co-housing management (chapter 4.3.2.2) and two seniors follow the Gray Army, a non-profit organization fighting for seniors rights. Lifelong learning was also not identified through education, but rather to learning through staying open, curious and through intergenerational interactions. Participation in the labour market, voluntary activities and individual participation was not studied in this research.

4.2.3 Security

Safety and security can be a sensitive and personal topic. It combines seniors’ feelings of safety, perceived capabilities and reflects on their support systems throughout life, as well as what is needed.

4.2.3.1 Social Support and Security

The systematic support mainly comes from the municipality. The City of Reykjavík offers a wide range of services that support seniors, such as serviced apartments, community centers with meals and social activities, free access to public swimming pools, transportation services and home care. In terms of family support, ES described that: “the family is very strong in Iceland, the relatives are very supportive and active when we are delivering the services [to the seniors]” (July 2023). In the focus groups, the family relations were less mentioned than expected. As previously reflected, some seniors do not want to bother their children to drive

them (chapter 3.1.3). The social activities, neighbourhood facilities and co-housing was mainly intragenerational, and the younger seniors experienced age division in society, not only with friendships but also family relations (chapter 3.1.7). More interactions could lead to more understanding, empathy and mutual support between generations.

4.2.3.2 Financial Security

In Iceland, seniors income is achieved through two means, pension funds and so-called senior salaries. Pension funds are dependant on people's income throughout their lives, whereas senior salaries are funded by the Social Insurance Administration, to support those with less pension funds. Senior salaries are also affected by people's savings and assets.

Having to adjust to fixed pensions and income can be quite a life change (Mandelman, 2021). Many (N=9) shared dissatisfaction with the senior salaries, being not enough or too affected by people's pension funds: "It's just disrespect towards those 67 and older, like saying just go and die, we can't get anything from you." (SB4, June 2023). The pensions were also debated, with SB1 describing it as "legally protected theft" (June 2023). Financial security depended highly on the pensions and the respondents recognized that they differ greatly between people. A few women got a share from their husbands pensions (SB1, SB4).

Gender played into the topic of pensions. Out of the 17 senior women interviewed, 11 shared being away from work for a year or more to raising children, for studying or due to illness. SA1 had no pension funds "I didn't work, I was just a housewife. I have seven children and one of them is disabled. I'm still taking care of him, he's turning sixty" (June 2023). The female respondents criticized housewives work not being valued financially and criticized women being described as *just* housewives, like SA6 said: "It is plenty of work taking care of a home and raising children" (June 2023).

A notable difference was identified with financial security depending on housing tenure, as the renters (N=4) expressed more financial burdens than the homeowners (N=15). Like reflected on in chapter 4.1.1, some (SA6, SB6) shared that their pensions won't be much since it all goes into rent. One of the renters shared that: "if you need something extra, like medicine or to buy clothes, then it's just done. Your money doesn't last the month" (SB6, June 2023). Health care costs for doctors appointments, treatments and aid were also expressed as financial burdens (chapter 4.1.6). Other expenses, such as transportation costs, expenses for social activities, events or neighbourhood services were not identified.

4.2.3.3 Perceived Safety

Perceived safety was largely reflected on in chapter 4.1.4, with the affects of weather conditions, accessibility, visual perceptions and aesthetics on feelings of safety. Some avoided physically challenging situations, which limited their opportunities and led to a change in behaviours (e.g. choice of transportation, housing acceptability). The winter conditions presented barriers for seniors physical safety, especially those who have difficulties walking (N=8). The 90 year old SA5 said "If the ground is covered in ice, I won't go outside" due to the fear of falling. Four others shared that they don't go outside and more that it's a barrier (N=10). For SA1, the car provides him the safety to leave his home in winters.

Particular locations and circumstances evoked insecurities. All respondents in SB (living downtown) and more (N=9) wouldn't walk downtown in the evenings. They shared concerns about people carrying knives and acting aggressive. Others felt unsafe in parking

garages (N=3). For some (N=5) language barriers affected their accessibility to services, creating insecurities to express oneself and be understood.

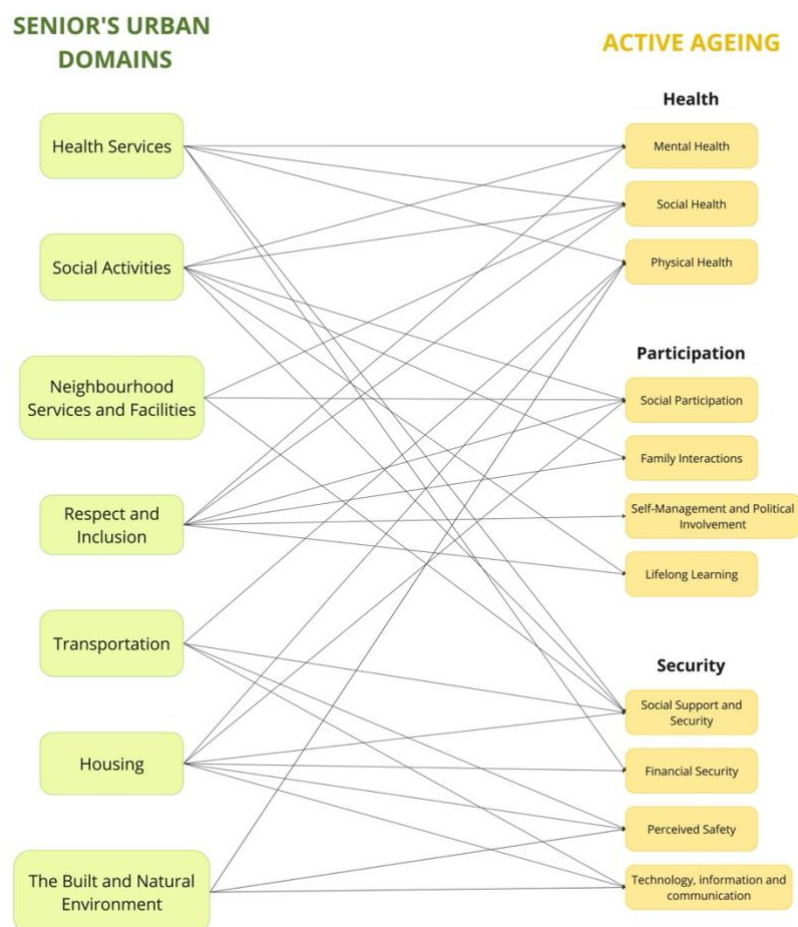
4.2.3.4 Technology, information and communication

Technologies were generally identified with the purpose of maintaining security. SA1 uses a navigation system in his car to help him get around. Some seniors (N=5) have benefitted from having a security button in their homes. Front door cameras have recently been installed in co housing residents in focus group SC, so they can see who they are letting into the building. Furthermore, many seniors (N=7) brought up the importance of the phone: “when I go outside, I make sure to take my keys, and the phone because it is sort of a security device” (SA4, June 2023) and SA1 stressed that it can be useful in case of falling. SA2 uses his smart phone to seek knowledge and SC3 to listen to audiobooks that help her read. Others experience a disconnect to the city through the digitalization:

The urban environment and other features, information and such, has naturally grown more distant, unless for those who know very well how to use these phones and apps and what ever this is called today, I don’t know how this works (SA6, June 2023)

Figure 14: Relations between seniors' urban domains and active ageing

To conclude the results on seniors’ urban domains and AA, figure 14 illustrates the relations between the concepts and indicators after coding.



Source: Author, 2024

4.3 Co-housing conditions and senior co-housing

Due to the increasing interests in co-housing and implementations in housing for seniors, the local conditions for co-housing and existing senior co-housing projects were studied and are reflected in the following chapter.

4.3.1 Local Conditions for Co-housing in Reykjavík

A legal definition for co-housing in Iceland could not be identified, nor an official Icelandic translation of the concept. The translations *samibúðarform* (e. combined form of living) (Hrafnadóttir, 2018) and *kjarnasamfélag* (e. core community) (Flender, 2019) were identified from previous research. Related concepts such as co-living and co-operative housing are more known, as well as a sustainable eco-village for people with disabilities (Sólheimar, n.d.).

Co-housing in Iceland has an institutionalized structure, offering specialized care for different groups of people, such as disabled people, dementia patients and seniors (Department of Welfare, 2021). Co-housing production is mainly managed by public actors and non-profit housing organizations but also private housing developers and co-operatives (Department of Welfare, 2021). As such, it is driven top-down, unlike in Denmark and Sweden where co-housing is created bottom-up by the residents (Choi & Paulsson, 2011; Tummers, 2015).

The experts defined co-housing differently. EC1-2 described co-housing as a broad concept, including co-living models, shared economy features and sustainable solutions, while EC3 described it as: “an intentional community created, led and run by the inhabitants” (August, 2023). They (EC1-3) referred to co-housing projects from Denmark, Sweden and the Netherlands but none from Iceland, and described the country as ideologically being behind:

Co-housing hasn't really made it to Iceland, and I can see why because Iceland is a very individualistic society and sharing and owning things together is rather foreign to people. People look at their own apartment or house as investment, so they want to sell it with a profit. That's maybe not always possible in co-housing. (EC3, July 2023)

EC1-2 shared an example of an affordable housing project they worked on in Reykjavík and tried to implement co-housing features for young people and first buyers. They suggested shared spaces, eco-friendly building materials and recycling systems, but the residents who moved in prioritized individual space, minimizing noise and material costs, as well as practical recycling solutions.

Despite their different approaches, the co-housing experts (EC1-3) have experienced difficulties with strict building regulations, not finding adequate legal frameworks and the lack of will and uncertainties through communication with the municipalities. They all intend to build bottom-up resident led co-housing, EC1-2 in the position of facilitating the project while EC3 as the resident. They have faced financial challenges, as the amount of apartments can't be too low to even out the costs for the shared spaces (EC1-2) and the residents have to be able to self-finance the project by living in their own property while financing the next one (EC3). Despite facing difficulties, they shared strong sense of believe towards the concept in Iceland:

Once the first project is built, I believe it will be amazing! ... It will be very popular and then there would be this reference and I think from that moment on, it could become easy to make the next project. (EC3, August 2023)

4.3.2 Senior Co-housing

The co-housing experts (EC1-2) argued the need for senior housing in Reykjavík:

Us who are 60+ years old are growing in Reykjavík, so in order for the housing market to be healthy, older people have to have the possibility to move out of their big houses and apartments to create space for the younger generations. (EC1, July 2023)

The experts believed seniors could benefit from co-housing (EC1-3, ES). They argued that senior co-housing is particularly important in Reykjavík because of sprawled neighbourhoods with lack of services, that prioritize car infrastructure and create distances in the urban fabric, as well as the harsh weather conditions in the winter that challenge mobility (EC1-3). The housing structure in co-housing, with shared spaces and inclusive architecture, can both meet seniors physical and social needs (EC1-3).

4.3.2.1 Physical Co-housing Structure

The three senior co-housing residences studied for this research, are a cluster of apartments built specifically for seniors. The qualifications to apply for the senior co-housing apartments depend on the developer (see table 3). The apartments are designed to enhance accessibility and security e.g. with elevators, handrails, wide corridors and safety mats. Home care is available through individual assessments from the municipality, equally accessible to all seniors regardless of residence (Department of Welfare, 2021).

The apartment buildings are connected with corridors to a community center which offers shared spaces and services, such as social activities (see chapter 4.1.5), warm meals and amenities (see chapter 4.1.2). “We are so lucky to have indoor access” (SC2, July 2023). The community center is run by the City of Reykjavík and is open to all senior citizens, but particularly accessible for the senior co-housing residents.

The residents recall having had shared spaces exclusively for the co-housing residents, but SA lost it due to space optimization for senior daycare facilities, SB for office spaces and in SC’s case, the residents share an assembly hall that was once used as a gathering place for the residents, but now rented out for catering and parties for family members.

Table 3: Three Senior Co-housing characteristics in Reykjavík

Name of co-housing	Borgir (SA)	Vitatorg (SB)	Árskógar (SC)
Location in Reykjavík	Suburb in the East	Downtown area in the North-West	Suburb in the South
Address	Fróðengi 1-11	Lindagata 57-66	Árskógar 1-3, 6 and 8
Number of apartments	111 apartments	94 apartments	169 apartments
Type of tenure	Only rental	Mostly rental but a few homeownership	Only homeownership
% of social housing	18,9%	73%	0%
Developer / Housing organization	Eir Security Apartments (is. Eir öryggisibúðir)	Serviced apartments by the City of Reykjavík	Senior Citizens Association (is. Félag eldri borgara)
Type of organization	Non-profit	Public	Non-profit
Applicant qualifications	No age limit but the target group is seniors	67 years or older Legal residence in Reykjavík	60 years and older Member of the Senior Citizens Association
Security services in the co-housing	24/7 monitoring services emergency call system	24/7 monitoring services emergency call system	No services

Source: Department of Welfare, 2021

4.3.2.2 Social Infrastructure in Co-housing

The social infrastructure through shared spaces is often described as the core of co-housing (Vestbro, 2010). The experts (N=3) emphasised the community's value for AA:

The focus of living on your own longer with the help of the community... I think it would be nice to age in such a community, rather than you know, living in a big house alone or with your partner (EC3, August 2023)

The shared spaces in the three co-housing residences were used efficiently through the services provided by the City of Reykjavík. Activities in co-housing are listed in chapter 4.1.5. Most senior respondents used the services offered by the community center, as well as organized trips. Social activities within co-housing were mentioned more often and described as more available than those outside of co-housing.

Management of the social activities differed between community centers. In SA, the social activities are largely driven by the seniors in the neighbourhood, while in SB it is mainly managed by the municipality and in SC a mixture of both. Respondents in SA (5-6) suggested improvements and more activities, while respondents in SB said: "it depends on the managers" (SB1, June 2023). The respondents in focus group SC have an elected a board with members that decide on management of the social activities (SC1-6 & SC7).

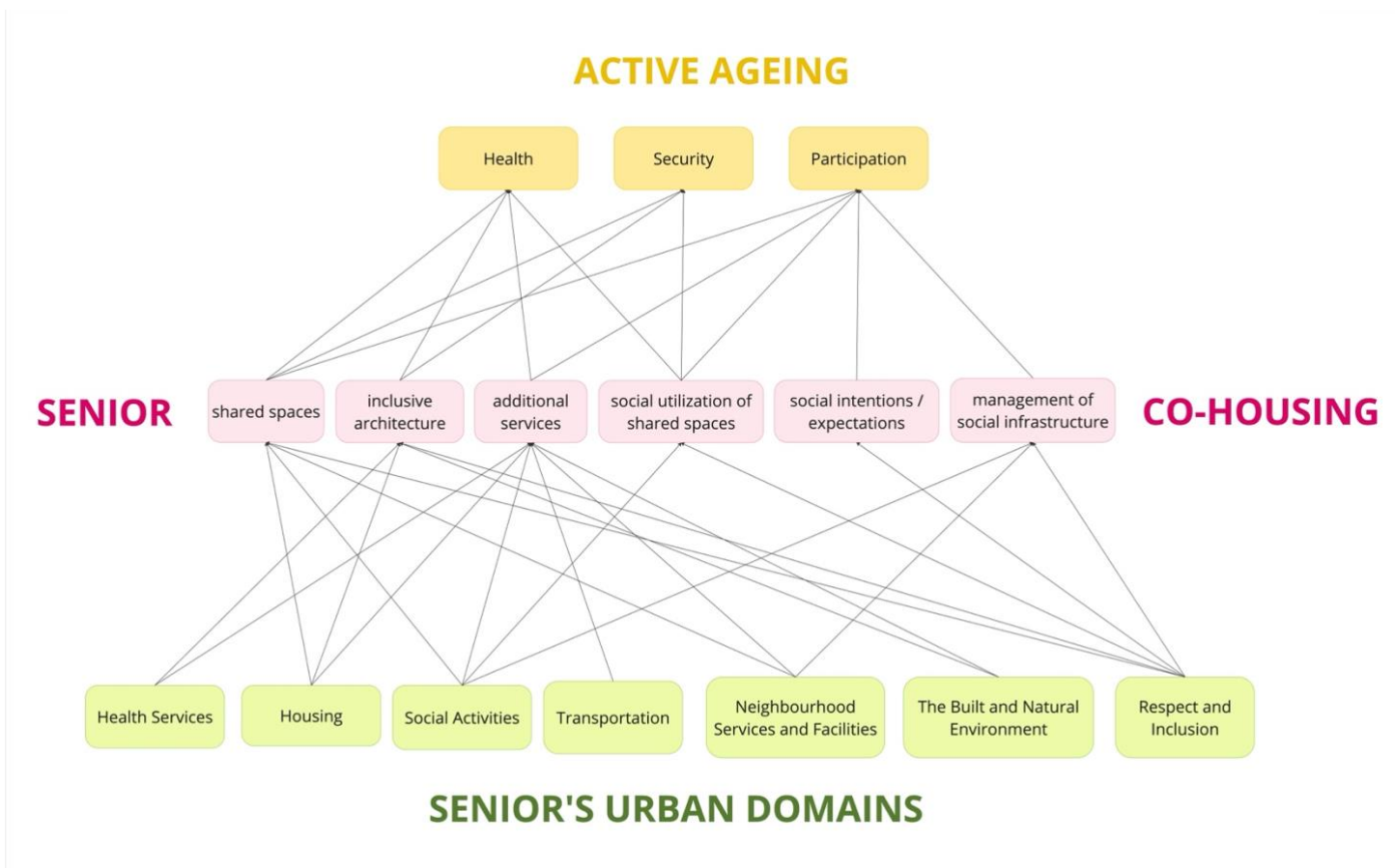
The opening hours of the community centers are on weekdays from 8/9 am until 16 pm, closed on weekends and holidays. The respondents share the need for longer opening hours and/or access to the spaces, in order to e.g. have coffee, evening activities or watch television together (N=9). SC2-5 believed that the men would claim the good couches: "We are not enough demanding!" (SC5, June 2023). YS(3-4) can't imagine sharing their co-housing with men, describing them as less socially active, more closed minded, expect services and lack initiative to clean. Their intentions for their potential co-housing is to share it with other single

senior women with likeminded life views and interests such as openmindedness, travelling, foreign foods, culture, arts and exercise (YS1-4).

The senior co-housing studied was mainly intragenerational, targeting seniors 67 years and older. The majority of respondents (N=12) were open to the idea of mixing together residences for seniors, families and young people, like SA1 said: “Friendships could be made by the seniors watching the kids while the parents pop to the shop” (June 2023).

To conclude the results on senior co-housing, figure 15 illustrates how senior co-housing bridges the gap between seniors’ urban domains and AA, after coding and analysis.

Figure 15: Relations Between Seniors' Urban Domains, Active Ageing and Senior Co-housing



Source: Author, 2024

5. Conclusions

The main objective of the research was to analyse how urban domains in Reykjavík affect their ageing process in the city, and how senior co-housing can impact the ageing population. The aim was to explore the variables on the city level of Reykjavík, Iceland and through gender-sensitivity. The concept of ageing and the effects of the urban domains will first be explained.

5.1 Active Ageing and Seniors' Urban Domains

The three dimensional concept of AA brings together so many aspects to living in older years (WHO, 2023). As for how seniors in Reykjavík, AA comprises three indicators; health, participation and security, that deepened the understanding on the concept. As such, the framework and indicators was successful for compiling the diverse experiences and perceptions of seniors AA in Reykjavík.

Health is personal and varies greatly between seniors. The importance of physical and social health for AA was prominent, but mental health findings were more subtle. As for how the urban domains affects on health, adequate health services were highly important and a focal point in the senior focus groups. Physical health was largely affected by accessibility in the built and natural environment and housing. Mental health was affected by age discrimination in health services, lack of public education and the need for intergenerational spaces. For both mental and social health, access and availability of social activities such as the community center was very important.

Proceeding from the personal to the collective, participation encapsulates the essence of living in an urban society, the interactions with people. Active participation in society is necessary for AA, but especially social interactions with family and friends. The use of the word “active” in the process of ageing may have amplified the indicator, but nevertheless, participation was shown to increase seniors health and security and very valuable for AA. As for the urban domains, the community center and social activities were very valuable for social participation, but also with opportunities from neighbourhood services and facilities. Housing situations affected opportunities to participate (e.g. co-housing) and transportation the options to reach spaces where participation takes place.

Lastly, security is dependent on available support systems, health conditions, gender and each person's course of life. Support was both formal and informal, from the government, municipality, families and friends. Security was less emphasized in the discussions compared to health and participation. This might be affected by local situations and differ between countries and cultures. In terms of the urban domains affects, health care services were important for providing security. The municipality provides a wide range of support, both subsidies and services. Housing as a basic need and human right affects all sub-indicators of security (see figure 14). Transportation refers to not only feelings of safety but also opportunities for independence and freedom. The built and natural environment grasps a the feelings of security both in the private and public sphere. Lastly, through networks and interactions from neighbourhood services and social activities, feelings of safety can be maintained.

5.2 Co-housing to Bridge the Urban Gaps

Due to the increasing interest in co-housing, especially in policies and housing projects for the senior population, senior co-housing was proposed as an age-friendly initiative, to bridge the gap between the urban domains and AA.

Co-housing in Reykjavík exists of an institutionalized top-down structure that has yet to be implemented for the general public. The concept is new and unstructured. The individualistic view on ownership and housing challenges co-housing projects, as well as affordability and finance. The intensions and expectations towards the shared spaces have to work together, in order for the co-housing to be acceptable for the residents. Legal frameworks, regulations and communication with municipalities also have to be improved in order for co-housing to expand.

More housing for seniors is needed in Reykjavík. Co-housing is a great initiative to meet the need, as the shared spaces and inclusive architecture can both meet seniors physical, social and mental needs. Senior co-housing is currently implemented as intragenerational clusters of apartments with shared spaces, designed to enhance accessibility and security. Private and public spaces are connected with corridors, so that the residents can walk indoors from their apartments to the community center, which is managed by the City of Reykjavík and provides a wide range of services, social activities and opportunities to participate. The provisions of services create unclear boundaries of management for the seniors, with some expecting more services while others self manage more. The seniors called for shared spaces that are always accessible, in the evenings and on holidays, to both maximize the use of space and opportunities for social interactions. Through the seniors gaining more control of the common areas, it could encourage them to have more initiative to shape the spaces with more intention e.g. by bringing in more intergenerational activities and perhaps health services.

Co-housing has a great potential for improving the daily life of senior people. Senior co-housing bridges the gap between the neighbourhood services, social activities and housing, as they fade into one another and interconnect. Co-housing serves as a facilitator for social interactions, which can provides support and safety. With the social infrastructure in co-housing, seniors are not as dependent on means of transportation to participate in society to maintain mental and social health. In current senior co-housing, the seniors can even go on daytrips with the community center in the city or to the country side. The weather conditions and outdoor accessibility does not have to be barriers for social interactions, as the social spaces are connected indoors to their apartments, decreasing the chance of isolation and loneliness. Social activities are available and optional, so the seniors have the choice of participating.

Although co-housing has the potential to make great improvements, it does not solve all urban issues for seniors. The rent in co-housing is too expensive, creating financial insecurities among seniors. Health services, such as access to doctors, medicine and home care are not features that are based in current senior co-housing in Reykjavík. The social spaces nevertheless provide opportunities to enhance and maintain mental and social health. Overall improvements are needed in terms of availability, accessibility, affordability of health services, as well as more respect and empathy towards seniors.

As the seniors call for intergenerational bringing, with more understanding across generations, senior co-housing could be more intergenerational and accessible to all ages. Inclusive design, social spaces and services serve all society, and senior co-housing can be the beginning of wider co-housing implementation in Reykjavík.

5.3 Social and Scientific relevance

During the times of global graying (Boundiny, 2013) research on seniors perspectives and lived experiences are valuable information when framing age-friendly policies and implementing age-friendly projects. The research also contributes to scientific knowledge about co-housing and the human and social factors, which are less researched than f.e. the architecture and frameworks.

The study focused on gaining local knowledge about concepts that had been adapted to nationwide policies and frameworks. With Iceland being a small country, local research that gains information about the socio-cultural context of a particular phenomena, contributes both to the scientific field and societal. From the standpoint as an urban planner, the topic was very interesting and the process both rewarding and educational. The value of participation and need of intergenerational bridging will be a guiding light into further work in this field.

5.3 Limitations and Recommendations

The research entailed a large number and wide range of indicators. They could have been narrowed down to fewer topics to get more detailed conclusions, but with the urban domains being so intertwined and interconnected, it was challenging to leave certain aspects out. Although going through extensive literature review, the topic is far from my lived reality as a 27-year-old woman, and it remained a challenge assuming which narratives to choose.

When collecting data, for the feasibility of the research, respondents were sought through the community centers, leading to most of the respondents being socially strong seniors. Reaching those more isolated is also highly important. In terms of accuracy during interviews, communicating information and receiving relevant information was a challenge due to some seniors hearing loss or misinterpretations of the discussions. Maintain on track was a challenge but through practising reflexivity and critically reflecting the data, the information was achieved.

This research utilized the focus group method to reach the seniors, which was successful for the purpose of the study, but individual in-dept interviews could be useful to address more sensitive topics, as seniors have various vulnerabilities that have to be approached gently, with empathy and understanding. People's acceptance and positivity towards issues may be shadowed by the focus group method, as perhaps they felt uncomfortable raising vulnerabilities or difficulties with the group. This might be a generational difference, as younger generations might express themselves more openly than older ones. That also includes the topic of gendered issues, as gendered inequalities to a young person today may not be an issue to a senior woman.

With the research respondents only identifying as cis men and women, I was aware of the gender dualism but exploring the gendered topics further could be interesting. Most participants in this research lived in co-housing, so a comparison study on co-housing residents and seniors living outside of co-housing could be also interesting. Likewise, researching the use of urban space dependent on living arrangement (alone / with a partner / with family), since many seniors live alone and might therefore need more access to social infrastructure and support.

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Appendix 1: Data Sample information

1.1 Interview information

Code	Profession / criterion	Interview type	Location	Duration	Date
SA (1-6)	Senior citizens	Focus group	In-person at Borgir community center	93 min	19.06.2023
SB (1-6)	Senior citizens	Focus group	In-person at Vitastígur community center	101 min	20.06.2023
SC (1-7)	Senior citizens	Focus group	In-person at Árskógar community center	61 min	21.06.2023
YS (1-4)	Younger senior citizens	Focus group	Online via Teams	37 min	26.07.2023
SB1	Senior citizen (follow-up interview from the focus group)	Individual semi-structured	Phone call, recorded	76 min	20.07.2023
ES	Office director for geriatric care at the Reykjavik Department of Welfare	Individual semi-structured	Online via Teams	76 min	12.07.2023
EC1 & EC2	Executive directors for a Real Estate Development Corporation in Reykjavik	Joint semi-structured	Online via Teams	45 min	14.07.2023
EC3	Architect specialised in co-housing and founder of a Grassroots Organization for co-housing in Reykjavik	Individual semi-structured	Online via Teams	43 min	04.08.2023

1.2 Description of the interviews, research incentive and respondents' characteristics

Focus group SA
Community center Borgir in the neighbourhood of Grafarvogur. Two men and four women, from the age 77-90 (mean = 80,6 y/o). Two of the women lived in the co-housing, two lived in apartments for people 50+ (not co-housing), and two lived in own housing. Four lived alone, two with a partner. All of them lived within 1,5 km from the community center.
Focus group SB
Community center Vitatorg in downtown Reykjavík. Six women from the age 79-91 (mean = 82,5 y/o). All of them lived alone, five in the co-housing and one in her own housing, around 3 km South-West of the community center.
Focus group SC
Community center Vitatorg in downtown Reykjavík. Six women from the age 79-91 (mean = 82,5 y/o). All of them lived alone, five in the co-housing and one in her own housing, around 3 km South-West of the community center.
Focus group YS
Four single women from the age of 61-68 (mean = 64 y/o) currently living in own housing but aim to found and move together into resident led senior co-housing for women, in collaboration with the Real Estate Developers; EC1 & EC2. Originally purposively sampled because of the co-housing aspect, but delivered valuable input on younger seniors perspectives towards active ageing in Reykjavík.
Follow-up interview with SB1
Conducted go gain in-depth information about sensitive topics, such as finances, gendered topics, her illness and more.
Expert interview on senior matters
Purposively sampled to gain information from an expert that has a wide range of experience working with senior people, both in the field and in framing projects and policies for senior citizens.
Expert interview on co-housing (EC1, EC2)
The Executive directors for a Real Estate Development Corporation in Reykjavík were purposively sampled, mainly because of the co-housing project with the senior women but also in regards to general use of co-housing features in projects.
Expert interview on co-housing (EC3)
The architect was sampled through the Grassroots Organization for co-housing in Reykjavík. Through the pilot interview, I got to know about his Master's thesis about co-housing in Reykjavík and his experience from previously living in co-housing abroad, which provided valuable information about the topic in this research.

1.3 Background information about the senior participants

Focus groups	Pseudo-nyms	Gender	Age	Housing type	Housing tenure	Living arrangement	Duration of occupancy
SA	SA1	Man	77	single family home	homeownership	alone	28 years
	SA2	Man	79	apartment in residential building for people 50+	homeownership	with a partner	8 years
	SA3	Woman	78	apartment in residential building for people 50+	homeownership	with a partner	---
	SA4	Woman	79	single family home	homeownership	alone	25 years
	SA5	Woman	90	senior co-housing	rental	alone	5 years
	SA6	Woman	81	senior co-housing	rental	with a partner	10 years
SB	SB1	Woman	85	single family home	homeownership	alone	60 years
	SB2	Woman	88	senior co-housing	---	alone	2 days
	SB3	Woman	91	senior co-housing	rental	alone	5 years
	SB4	Woman	67	senior co-housing	homeownership	alone	6 years
	SB5	Woman	85	senior co-housing	homeownership	alone	1 year
	SB6	Woman	79	senior co-housing	rental	alone	3 years
SC	SC1	Woman	88	senior co-housing	homeownership	alone	12 years
	SC2	Woman	90	senior co-housing	homeownership	alone	13 years
	SC3	Woman	89	senior co-housing	homeownership	alone	16 years
	SC4	Woman	86	senior co-housing	homeownership	alone	30 years
	SC5	Woman	80	senior co-housing	homeownership	alone	4 years
	SC6	Woman	78	single family home	homeownership	alone	---
	SC7	Woman	80	senior co-housing	homeownership	alone	8 years
YS	YS1	Woman	67	---	---	alone	---
	YS2	Woman	62	---	---	alone	---
	YS3	Woman	61	---	---	alone	---
	YS4	Woman	65	---	---	alone	---

Appendix 2: Research instruments

2.1 Interview Guides

2.1.1. Interview Guide for the Focus Groups

When arriving at the community center

- get settled in the space: arrange the tables, set up the recording device
- ask if the participants are comfortable, whether they want water or coffee
- ask for people's names and contact information before starting the recording to ensure privacy

Introduction

Good morning and welcome to my focus group. Thank you for taking the time to come together here today to help me with my research. My name is Margrét Lára Baldursdóttir and I am a master's student, specializing in Urban Development and Management at the Erasmus University in Rotterdam. Currently, I am working towards my thesis research, by collecting data through interviews, both individual interviews and through focus groups like this one today.

You are one of three focus groups that will be conducted in different community centers within the city. You are invited here today because you are 60 years or older and participate in the activities here at [name of the community center]. Through this interview, I aim to gain insight into your experiences and feelings towards the urban environment in Reykjavík. You may have seen the introductory pamphlet that I sent to the community center, but the topics we will cover today were briefly introduced there. That includes questions regarding what active or healthy ageing means to you and how your housing situation and other features in the urban environment can influence that. The theoretical framework of the research revolves around the Age-Friendly Cities Framework by the World Health Organization. It should be of everybody's interest that cities are age-friendly, both for the younger and older generations, as the young people of today will grow old and receive the age-friendly city in the future.

I will briefly explain the nature of focus groups. The aim is that the perspectives of every participant shine through, rather than the group reaching a common decision. There is no right or wrong opinion, simply different experiences and views. So please share your thoughts, whether they relate or counter other people's opinions. Opinions can be positive and negative and everything in between!

You have probably noticed my phone and recording device in the middle of the table. The group discussion will be recorded on audio to ensure that the respondent's perspectives are accurately recalled. The audiotape will be treated with confidence and will only be for me as a researcher to reflect as accurately as possible on your views of opinions. With that in mind, it is important that we create a safe space here today and think about this interview as a collective confidential matter, and don't share the content of the interview with other people outside of this group. I will transcribe and code the interviews, but your names will be kept out of all material and reports. I won't use your names but refer to you as "woman" or "man" or some other pseudonym. I will ensure that no personally identifiable information will be disclosed. Since my studies are conducted in English, I will translate the interviews from Icelandic to English. The translated text will be run by you to avoid any misinterpretation. There is no intention to publicly publish the study, but I will send it to you when it is ready. If you have any questions about the project after the focus group, feel welcome to reach out to me.

The interview will take about 90 minutes. We will take a break halfway through to have coffee. With no further ado, do I get your permission to use this interview today for theoretical and research purposes? And do I get your permission to start audio recording the interview?

→ **Start the recording**

For procedural purposes, I ask again on recording:

- do I get your permission to use this interview today for theoretical and research purposes?
- and do I get your permission to record the interview on audio?

Opening question

We are going to start with introducing ourselves with some basic information

Could we go around and you tell me:

- your housing type
if you don't live in the co-housing, what kind of housing?
- how long have you lived in that housing?
- living arrangement
e.g. live alone? with a partner or relative?

Housing

- how do you feel about your current housing situation?
- are you satisfied? / would you want to change?
- housing needs e.g. have they changed as you've aged?

Co-housing

- ask about the design and adaptability of the apartments
- how are the shared spaces structured? how are they utilized?
- any participatory processes or management in the co-housing?
- how do you generally like living / the idea of living closer with people, sharing and managing common spaces together?
- any additional services in co-housing?

Change of direction → if we step outside of your home and look at what is around

What words come to mind when you think about your **neighbourhood** here in:

→ Grafarvogur / Breiðholt / Miðborg

Neighbourhood services and facilities

- what do you find important to have access to in your neighbourhood?
- what services or amenities do you find important to have frequent access to?
 - are those services or amenities accessible to you?

Social activities

- do participate in any social activities? what kind of activities?
- how do you get to the social activities?
- how is the age composition in the social activities?

The built and natural environment

- how would you generally describe access within buildings?
- how would you generally describe access in outdoors?

- pathways, recreational areas etc.

Means of transportation

- what means of transportation do you use?
 - walking / driving / public transportation / relying on relatives or friends / other options?
- are you satisfied with your main source of transportation or would you like to use other option?

Pensions

- how do you feel about your pensions or fixed income?
keep in mind: any gendered differences in this discussion?

SHORT BRAKE

Introduce active ageing, say that it composes of these three aspects; health, security and participation

Health

- is health important for active ageing?
- what is important for you do have or to do, in order to maintain good health?
health can be mental, social and physical
- what features in the city affect your health?
- what health services is important for you to have access to?
- how would you generally describe the health care system?

Security

- is feeling secure and safe important for active ageing?
- what is important for you to feel secure or safe?
- what brings up insecurities / feeling unsafe?
- are there any particular features in the city that make you feel safe or unsafe?
- do you feel support from the government, family or friends? how?
- are there any technological features that enhance / decrease feelings of safety?
keep in mind: any gendered differences in this discussion?

Participation

- is participation important for active ageing? if so, what kind of participation?
- who do you like to meet regularly? friends? family? neighbours?
- does participating in the society have an affect on how you feel? how?
 - do you see any gendered differences in participation between men and women?
- do you feel respected and included when participating in society?
- how do you feel like general knowledge is about seniors perspectives and realities?
keep in mind: any gendered differences in this discussion?

We have now gone over health, security and participation.

Are there **any other factors** that you find important to maintain healthy and active ageing?

Are there any features in Reykjavík that that you feel like especially **facilitate** or hinder your possibilities to age in an active and healthy manner?

Final question / closing the interview

Now I’ve asked you everything I wanted to touch upon today, is there anything that you would like to add in the end? Related to the topics that we have talked about today?

...

So that concludes the interview. Thank you all for participating!

2.1.2 Interview Guide for Experts

Welcome!	Hi there X! Thank you for taking the time to participate in this interview today!
Introduction	My Name is Margrét Lára Baldursdóttir and I am a master’s student studying Urban Planning (Urban Development and Management) specializing in Housing, Equity and Social Justice, at Erasmus University in Rotterdam.
The research	Currently, I am working towards my thesis research, by collecting data through interviews, both through focus groups and individual interviews like this one today. I will interview senior citizens, experts on senior matters, experts on housing and co-housing in Reykjavík. You are invited here today because you are: <ul style="list-style-type: none"> - an architect that works in Iceland and have been working on co-housing - a real estate developer working on co-housing projects in Iceland - you have worked with senior people and have insight into their perspectives, experiences and values
The interview	The interview is expected to take around 30-60 minutes but we can continue for longer if we would like. Your participation is optional and you can stop at any time in the interview. You don’t have to answer all questions if you don’t want to, and you can withdraw your consent at any time while the research is conducted.
Ethics and Privacy	The interview will be recorded to ensure that respondent’s perspectives are accurately recalled. The audiotape will be treated with confidence and will only be for me as a researcher to reflect as accurately as possible on your views of opinions. I will transcribe and code the interviews, but your names will be kept out of all material and reports. I won’t use your names but refer to you as “woman” or “man” or some other pseudonym. I will ensure that no personally identifiable information will be disclosed. Since my studies are conducted in English, I will translate the interviews from Icelandic to English. The translated text will be run by you to avoid any misinterpretation. There is no intention to publicly publish the study, but I will send it to you when it is ready.
Ask for consent	With no further ado, do I get your permission to use this interview today for theoretical and research purposes? And do I get your permission to start audio recording the interview?

	Do you have any questions before I start the recording?
Consent recorded	<p>And because of practical reasons I need to ask again:</p> <ul style="list-style-type: none"> • Do I get your permission to use this interview today for theoretical and research purposes? • Do I get your permission to start audio recording the interview?

Background information

- Could you tell me a bit about yourself (how old you are, your work, whether you live in Reykjavík or not)

For co-housing experts:

- What sparked your interest in co-housing?
- Can you tell me about a co-housing project you've worked on?

Local conditions

- How would you describe the local conditions for co-housing in Reykjavík, Iceland?
- How would you describe the current structure of co-housing in Reykjavík, Iceland?
- How do you experience the cultural perceptions towards co-housing?

Talk about co-housing

- Physical co-housing structure
- Social infrastructure
 - Shared spaces
 - Inclusive architecture
 - Additional services
 - Management
 - Intentions

For senior experts:

- What sparked your interest to work with seniors?
- What does the City of Reykjavík do as an age-friendly city?
- How would you describe active ageing?
 - Participation
 - Health
 - Security
- How would you describe Reykjavík's performance as an age-friendly city?

2.2 Information and Consent Forms

2.2.1 Information Sheet and Consent Form for Experts (Originally English)



Information sheet and consent form

Introduction

My name is Margrét Lára Baldursdóttir and I am pursuing my Masters in Urban Development and Management at the Erasmus University in Rotterdam, specializing in Housing, Equity and Social Justice. The objective of my research is to identify local urban characteristics in Reykjavík, how they influence active ageing among seniors in the city, and how living in co-housing for seniors can influence the relationship between the two. The aim is to explore the variables through gender-sensitivity and the socio-cultural context of urban Reykjavík.

Feel free to contact me for more information about the research through my email: margretlara97@hotmail.com or phone number: +354 6597719.

Data collection

I am currently collecting qualitative data for my thesis, through individual interviews and focus groups. You have been chosen for this individual interview because of your knowledge on one or more of the following topics in Reykjavík, Iceland: (1) the interests of senior people (2) co-housing (3) urban planning or housing. You can expect to receive standard questions for all participants, as well as tailored questions to your field. I ask for permission to record the interview in order for me to accurately reflect on your opinions. The interview will be transcribed and coded for further analysis. The data gathered will be treated with confidentiality.

Potential inconvenience & risks

There are no physical, legal or economic risks associated with your participation in this study. This interview is scheduled for 30 to 60 minutes, but please do not feel constrained as we can talk for longer. It is not mandatory to answer all questions. Your participation is voluntary and you can stop at any time. The data that is gathered in Icelandic will be translated to English for the final product. The translated text will be run by you avoid any misinterpretation.

Confidentiality & data protection

The collected data will be used for an aggregated analysis and no confidential information or personal data will be included in the research outcome. The data is stored in a secure location and will be kept for 10 years.

Data sharing

I will share the data with my supervisor Peter Scholten, for the purpose researching and writing my master thesis mandatory for completion of my studies at Erasmus School of Social and Behavioural Sciences, Erasmus University.

Voluntary participation & individual rights

Your participation is voluntary and you can stop at any time. When you participate in the research, you have the rights to request more information about the data collection, analysis or withdraw the consent and ask data erasure before the dataset is anonymized or manuscript submitted for publishing. You can exercise your rights by contacting Margrét Lára Baldursdóttir.

If you have any complaints regarding the processing of personal data in this research, please contact Margrét Lára Baldursdóttir.

Erasmus University Rotterdam



Consent form

Active ageing, co-housing and urban local characteristics in Reykjavik

Upon signing of this consent form, I confirm that:

- I've been informed about the purpose of the research, data collection and storage as explained in the information sheet;
- I've read the information sheet, or it has been read to me;
- I've had an opportunity to ask questions about the study; the questions have been answered sufficiently;
- I voluntarily agree to participate in this research;
- I understand that the information will be treated confidentially;
- I understand that I can stop participation any time or refuse to answer any questions without any consequences;
- I understand that I can withdraw my consent before the dataset is submitted for approval.

Additionally, I give permission to:

	Yes	No
I give permission to audio record the interview		
I give permission to video record the interview		
I give permission to use quotes from my interview		

Name of research participant: _____

Date: _____

Signature: _____

Erasmus University Rotterdam



2.2.2 Information Pamphlet for Seniors (originally Icelandic, translated to English)

Do you want to participate in a focus group?

I am looking for people aged 60+ to participate in a focus group for my master's research. The interview will take place in your community center, there will be about 6 people in the focus group and the interview will be about 90 minutes long with a coffee break. Are you interested in participating?

The research discusses how numerous local factors in the urban environment in Reykjavík affect the well-being and active aging of senior people. The theoretical framework of the project is based on the World Health Organization's project on Age-Friendly Cities. Since I specialize in housing, equity and social justice, the essay will examine how the form of residence of older people can affect their access to the city. The topic of co-housing, which I learned about during my studies here in the Netherlands and which is growing as a form of housing for senior citizens in many countries, will also be considered.

About me



My name is Margrét Lára Baldursdóttir and I am a student in Urban Planning and Development at Erasmus University in Rotterdam. I am working on a master's thesis this summer, which is my final project in the program.

My supervisor in the project is Peter Scholten.

The concept **active ageing** is defined by the World Health Organization as "a life-long personal process shaped by several factors that, alone and acting together, favour health, participation and security in older adult life".

The concept **co-housing** is a community based on a theoretical framework of communication and cooperation in housing matters. Residents have their own apartment and personal space, but also share common spaces and facilities with the people in the co-housing.

For more information about the project, you can contact me

email: margretlara97@hotmail.com

telephone: 00 354 659-7719

What will be asked in the interview?

- Your place of residence, local environment and access to the city from your home
- What features in the urban space facilitate or hinder your access to the city?
- How do these urban features affect your health, security and participation in society?
- Gender perspectives and whether experiences of active ageing differ between genders will be discussed
- How do you like the idea of living more in community with older people and sharing a cafeteria or common spaces, such as in co-housing?

Focus groups with senior citizens is one part of my research. The interviews will be audio-recorded and transcribed to ensure that the interviewees are reflected on correctly. If the interviewees feel comfortable and agree, it would also be good if I get permission to videotape the interview. It is not a requirement but would help me in the data analysis. Participants will be asked for their informed consent before starting the interview and they have full will to withdraw their consent at any stage of the process. I pledge complete confidentiality to my interviewees. This means that their names will be encrypted and I will keep the interview data confidential.

Focus groups are a qualitative research method where the goal is to gain an understanding of the experiences, knowledge, attitudes and mindsets of a certain group of people, towards the subject of the research in question. It is often more relaxed for the interviewees to talk together in a group and a dialogue is formed that cannot be achieved through an individual interview. The goal is to scrutinize the opinions of each individual participant, rather than for the group to come to a common conclusion.

I would appreciate it if you could participate in the project and give an interview about your ideas, knowledge and experiences of being a senior citizen in Reykjavík.

Thanks in advance!

2.2.3 Consent form for seniors in Icelandic (original copy that was signed)

Yfirlýsing um upplýst samþykki



Samþykkisyfirlýsing fyrir þátttakendur í M.Sc. rannsókn á viðhorfum og upplifunum eldra fólks til virkrar og heilbrigðar öldrunar og hvernig þættir í borgarumhverfinu í Reykjavík geta haft áhrif á það.

Rannsóknin er unnin af Margréti Láru Baldursdóttur og er leiðbeinandi er Peter Scholten.

Þátttaka í rannsókninni felur í sér rýnihópaviðtal um viðhorf og upplifanir eldra fólks til virkrar og heilbrigðrar öldrunar, til búsetuforms og hvaða þættir í borgarrýminu auðvelda eða hindra aðgengi þeirra að Reykjavíkurborg.

Viðmælendum er heitið trúnaði en í því felst að farið verður með viðtalsgögnin sem trúnaðarmál. Í umfjöllun um rannsóknina og niðurstöðum hennar verður nöfnum viðmælenda einnig haldið leyndum, sem og öllum persónugreinanlegum upplýsingum.

Ég staðfesti hér með undirskrift minni að veita viðtal vegna ofangreindrar rannsóknar.

Undirskrift þátttakanda

Staður og dagsetning

2.2.4 Consent form for seniors in English (translated)

Declaration of informed consent



Declaration of consent for participants in the M.Sc. research of the perspectives and experiences of senior people towards active and healthy ageing and how local features in the urban environment in Reykjavík can influence that.

The research is conducted by Margrét Lára Baldursdóttir and is supervised by Peter Scholten.

Participation in the study included a focus group interview about the perspectives and experiences of senior people towards active and healthy aging, about their form of residence and which urban features facilitate or hinder their access to the city of Reykjavík.

Interviewees are promised confidentiality, which means that the interview data will be treated as confidential. In discussing the study and its results, the names of the interviewees will also be kept confidential, as will all personally identifiable information.

I hereby confirm with my signature that I give my consent for participation.

Participant's signature

Place and date

Appendix 3: IHS copyright form

In order to allow the IHS Research Committee to select and publish the best UMD theses, we kindly ask you to fill out and sign this copyright form and make it an annex to your final thesis.

Criteria for publishing:

1. A summary of 400 words should be included in the thesis.
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Margrét Lára Baldursd.



