Born and raised in Suriname, growing old in the Netherlands...

The relationship between well-being and ageing in place domains for Surinamese older people in the Netherlands

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Preface

As a student of Erasmus University Rotterdam I have written my thesis about Surinamese older people and the relationships between their well-being and the ageing in place domains in their neighborhoods, to obtain my Master's degree in Health Economics, Policy and Law. I was engaged in researching and writing this thesis from January to June 2021. This journey has been a educational and exciting stage of the course. During this process, I have gained some new skills that are useful in the next phase of my career. Also, it has taught me the importance of perseverance and consistency. The COVID-19 restrictions led to difficulties in recruiting respondents for interviews and refusals to invitations. Nevertheless, the message to take away from this is not giving up and keep moving forward.

Therefore, I would like to thank all of the Surinamese older people for their time and input in taking part in this research, as without their input this research would not have been possible. I would also like to thank my supervisor for her excellent guidance and support during this process. My supervisor was always available to answer my questions and provide feedback on my work. I really appreciate this! Additionally, I would like to thank the PhD-student who handed over her dataset and helped me with the analysis. Further, I would like to thank my friends, neighbor and uncle who have proofread my thesis. Lastly, I would like to thank my family for their continuous support.

I hope you will enjoy reading,

Rotterdam,

Shreya Hanoeman

Summary

Many Surinamese people with different ethnicities and cultures migrated to the Netherlands for a better future, who are currently the largest group of non-Western immigrants. In the Netherlands, these individuals are identified as Hindustani, Creoles, Javanese and Chinese. Now, these individuals are growing old and vastly prefer ageing in place. The availability of age-friendly environments in the neighborhoods of Surinamese people may positively affect their overall well-being. This is important, because Surinamese elderly persons are more vulnerable due to their income, health, housing, social inclusion and are consequently having a lower level of well-being. Therefore, the influence of neighborhood characteristics on the well-being of these Surinamese Hindustani, Creoles, Javanese and Chinese older migrants are analyzed in this report.

These neighborhood characteristics are defined by the World Health Organization (WHO) in a theoretical concept called the eight ageing in place domains: *Outdoor spaces and buildings; transportation; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and, community support and health services*. Neighborhoods should consider these domains to serve the needs of elderly persons. To understand how Surinamese elderly experience well-being the theory of Social Production Function (SPF) is used. This theory characterizes five instrumental needs (i.e. comfort, stimulation, affection, behavioral confirmation and status) to realize well-being. Interviews with Surinamese older people from different origins and backgrounds were conducted. Also, an already available dataset on the ageing in place domains and well-being of Surinamese older adults is used.

The characteristics as outlined in the eight-WHO ageing in place domains turned out to affect the well-being of Surinamese Hindustani, Creoles, Javanese and Chinese older people. To have facilities close to home, such as supermarkets, grocery stores, shops and parks, as well as possibilities to interact with neighbors and stay socially connected, contribute to higher feelings of well-being. These are examples of how the environment positively impact Surinamese elderly persons in their well-being.

Despite the presence of all neighborhood characteristics, Surinamese elderly persons are not able to achieve the highest possible level of well-being. To solve this issue, policymakers and municipalities must anticipate and should be aware of which characteristics are missing in these neighborhoods. Henceforward, policymakers and municipalities should be able to detect which neighborhood attributes need investments to realize a higher well-being for the Surinamese elderly people.

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1 Introduction

The labor migration of Surinamese to the Netherlands started in the 1960s due to the shortage of labor in the Dutch labor market (van Heelsum & Voorthuijsen, 2002). On the one hand, structural unemployment and political instability in Suriname, on the other hand, opportunities for higher education, and family reunification in the Netherlands influenced many Surinamese to migrate to the Netherlands. Surinamese population in the Netherlands is about 88,000 older adults (CBS, 2020), which is the largest group of non-Western immigrants in the Netherlands and is making up 26.1% of the non-Western elderly population. The socio-economic position of different ethnic groups within the Surinamese community is not equivalent, due to the differences in education level, length of stay and ethnic-cultural background (Van Niekerk, 2000). Mainly, differences in religion make the ethnic-cultural diversity in the composition of the Surinamese population visible. In the Netherlands, the following groups are distinguished within the Surinamese community: Hindustani, Creoles, Javanese and Chinese (Oudhof et al, 2011).

In the Netherlands, elderly people of Surinamese origin are more vulnerable to their income, health and housing compared to that of older native Dutch origin. Majority of these elderly people are not able to accrue a full state pension (Huizer et al., 2013). It is found that these groups of people often struggle with physical and psychosocial health problems (e.g. poor eyesight and hearing impairment) and mobility issues (El Fakiri & Bouwman-Notenboom, 2015; Klokgieters et al., 2018). Furthermore, they are more likely to live in crowded homes or apartments without an elevator and with few possibilities for home adaptations (Witter & Fokkema, 2018).

In particular, a study from El Fakiri & Bouwman-Notenboom (2015) showed that Surinamese seniors feel more loneliness due to social isolation as compared to native Dutch seniors. Their vulnerability extends to their social network as Surinamese older adults often live as a single person and therefore, have a lack of provision of informal care by their partner, in contrast to native older citizens who live with their partners, (CBS, 2020). Each adult experiences ageing differently depending on his/her socio-economic and cultural background (Pani-Harreman et al., 2020). Hence, it is important that the living neighborhood meet the needs of older people in order to age in place and to achieve the highest possible level of well-being, despite physical constraints and limited social involvement.

According to Conkova and Lindenberg (2019) migration affects the life of migrants in various ways, which may influence their experiences and ideas on ageing and well-being. Until now, limited attention is paid to the diversity between and within migrant groups' well-being (Conkova & Lindenberg, 2019). Research showed that the well-being of elderly persons is positively affected by

the presence of age-friendly environments within their living neighborhoods (Nieboer & Cramm, 2017). However, this may differ for elderly migrant people. The World Health Organization (WHO) published a *Global Age-friendly Cities* guide, based on 158 focus groups in 33 cities, in which it identified *eight ageing in place domains* that cities and neighborhoods should consider to better serve the needs of elderly persons: *Outdoor spaces and buildings; transportation; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and, community support and health services* (WHO, 2007). Yet, little is known about the age-friendliness of neighborhoods for different (sub)groups of Surinamese older migrants and the relation between age-friendliness and older migrants' well-being (Lui et al., 2009). Only a few studies have been done on the experience of ageing in place and the well-being of migrant elderly (Conkova, 2019; Conkova & Lindenberg, 2018; 2019; Schellingerhout, 2004; Zubair & Norris, 2015).

1.1 Relevance

Within the Surinamese community in the Netherlands, there are different subgroups: Hindustani, Creoles, Javanese and Chinese; that differ in ethnic origin (Oudhof et al, 2011). Research on well-being of these Surinamese ethnic subgroups is limited (Liem & Veld, 2005; Choenni, 2008). Such a study on these ethnic groups is important as it delves deeper into contrasting elements such as physical problems between Hindus and Creoles (Bindraban et al., 2008; Agyemang et al., 2009). In particular, the socio-cultural differences, within these Surinamese ethnic groups plays a role in their social behavior and social participation (Liem & Veld, 2005; Choenni & Adhin, 2003). Consequently, the ethnicity of Surinamese migrants may also experience different levels of well-being and it varies depending on the age-friendliness of the neighborhood in which they live. Therefore, the influence of neighborhood characteristics on the well-being of Surinamese elderly needs to be better understood. Further research into the ageing in place domains, and their influence on the different ethnic groups of Surinamese elderly persons is relevant to help develop policies and interventions to improve neighborhoods for elderly. Hence, it is both socially and scientifically relevant to study the age-friendliness of the living neighborhoods of the Surinamese elderly migrants belonging to diverse subcultures.

1.2 Objective and research question

The aim of the proposed study is to conduct a mixed method research on how ageing in place domains are associated with the well-being of older Surinamese people who belong to different ethnic backgrounds, such as Hindustani, Creoles, Javanese, and Chinese by using quantitative and qualitative methods. The first objective is to identify the level of well-being in different subgroups of Surinamese older people. Next, to what extent the important neighborhood characteristics, i.e. the eight domains identified by the global age-friendly cities guide of WHO, are missing among (subgroups of) the Surinamese older people. And, finally, what associations between ageing in place domains and well-being needs of Surinamese people are.

In this thesis, the following research question is addressed: **'What are relationships between ageing in place domains and the well-being of Surinamese migrant older people with a Hindustani, Creoles, Javanese and Chinese background?'**

The research question will be answered using the following sub-questions:

1. What is the level of well-being of Surinamese older people with a Hindustani, Creoles, Javanese and Chinese background?
2. How do Surinamese older people with a Hindustani, Creoles, Javanese and Chinese background experience the ageing in place domains in their neighborhood?
3. To what extent are ageing in place domains related to the well-being of Surinamese older people with a Hindustani, Creoles, Javanese and Chinese background?

1.3 Outline

In chapter 2, the theoretical concepts and the literature on well-being and ageing in place are presented. Chapter 3 describes the methods that were used to collect and analyze the qualitative and quantitative data on ageing in place domains and well-being of Surinamese older persons. In chapter 4 the results are presented. Finally, in chapter 5 conclusions are drawn and, recommendations are given and discussed.

2 Theoretical framework

In this chapter the theoretical concepts used in this research are presented. First, well-being is discussed, as conceptualized in the theory of Social Production Function (SPF). This theory characterizes five instrumental needs (i.e. comfort, stimulation, affection, behavioral confirmation and status) to realize well-being. Second, the eight-WHO ageing in place domains are examined. The relationships between ageing in place domains and well-being are constructed (see figure 2). Finally, differences between Hindustani, Creoles, Javanese and Chinese older people are described.

2.1 Well-being

To understand how Surinamese elderly experience well-being, Social Production Function (SPF) theory is used to examine the realization of well-being needs (Ormel et al., 1999). People take different approaches in achieving subjective well-being via the realization of physical and social well-being to improve their living conditions (Lindenberg, 1996). In SPF theory (see figure 1), the instrumental needs fall below the two ultimate needs (physical and social well-being) and above the resources required for their production (e.g. income, assets, social network, health care) (Nieboer & Cramm, 2018; 2015; Lindenberg, 2013). Individuals with unfulfilled needs experience lower levels of well-being (Lindenberg, 2013).

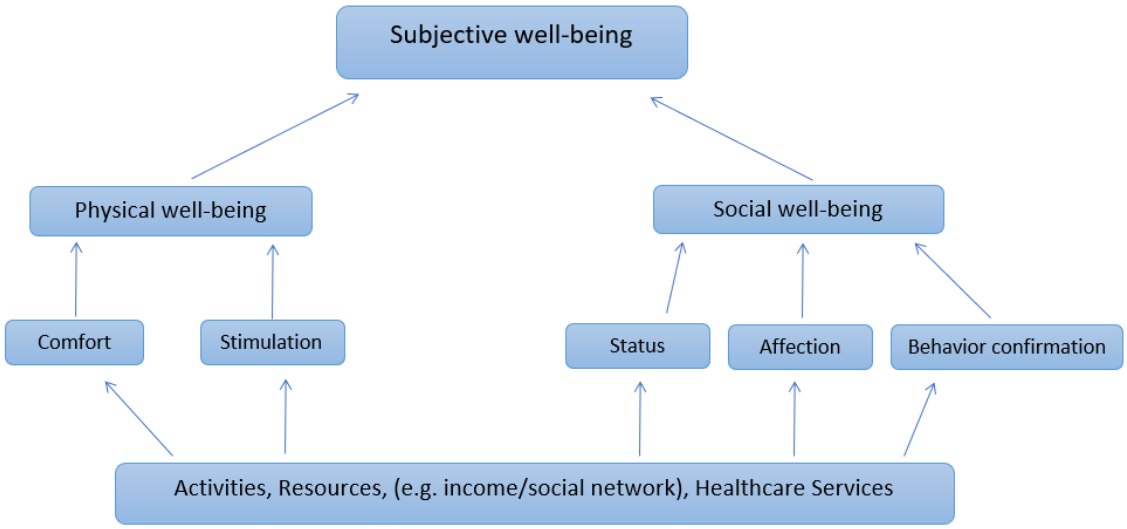

Figure 1. *Social Production Function theory (Cramm & Nieboer, 2015).*

Physical well-being is achieved by two instrumental needs: comfort and stimulation (Lindenberg, 2013; Ormel et al., 1999). ***Comfort*** refers to the somatic and psychological state that depends on basic physical needs such as food, drink, shelter and the absence of pain and discomfort. ***Stimulation***

refers to the physical and mental activities, such as hobbies or sports, and the absence of monotony (Steverink, 2009).

Social well-being is achieved by three instrumental needs: status, affection and behavioral confirmation. ***Status*** is the relative standing within a group (Bruggen, 2001), respectful treatment of individuals and distinguishing oneself positively from others, through special talents or achievements. ***Affection*** refers to giving and receiving love, relationships with family, friends, and relatives, and emotional support (Ormel et al., 1999). It is the social acceptance of close relationships (Bruggen, 2001). ***Behavioral confirmation*** refers to the need of an individual seeking confirmation on living up to group standards and feeling accepted by others in the group. This depends on the positive feedback from others and self approval (Bruggen, 2001). These five instrumental needs are considered to be general needs of a human, and thus form the basis of well-being (Steverink, 2009).

Efficient activities and resources (e.g. spouse or work) are multifunctional and contribute to all the aspects of people's well-being (Nieboer & Lindenberg, 2002; Nieboer, 2005). Individuals may experience difficulties in realizing physical and social well-being due to disturbances in the participation of social activities and relationships. For instance losing a spouse (Nieboer, 1997), who is likely to be a multifunctional resource for fulfilling the five instrumental needs (i.e. affection, behavioral confirmation, stimulation, comfort and status) of an individual, could lead to a lack or loss of multifunctional activities/resources and thus harm overall well-being (Nieboer, 2005). In case of functional limitations, which hinder opportunities of engagement in activities, individuals should be able to substitute their loss and receive support to stop further worsening of their well-being.

Although the accessibility of resources changes over time and place, a stable level of well-being can still be achieved by substitution (Nieboer & Cramm, 2018). For instance, when recognizing the status of an individual (e.g. volunteer work) is difficult, the concerned individual will try to engage in social interactions for affection and behavioral confirmation. These instrumental needs may be somewhat easier to realize as one grows older as compared with status which becomes more difficult to realize (Nieboer & Lindenberg, 2002; Steverink, 2009). According to the theory of SPF, the instrumental needs are limited substitutable (Bruggen, 2001). For example, physical well-being requires a minimum level of stimulation that cannot be compensated by a certain level of comfort. These instrumental needs are also useful to assess how well-being is realized among Surinamese elderly persons.

2.2 Ageing in place domains

The concept behind the 'ageing in place' policy is that living in a familiar environment has a positive impact on the well-being of older people (Van Dijk et al., 2015). However, research on the influence of neighborhood characteristics on well-being and the differences among ethnic groups with respect to ageing in place is lacking. An age-friendly environment empowers people to actively age in place and provides possibilities for their participation in the community (Fitzgerald & Caro, 2014). Older people should be able to live in an environment that helps them realize their needs for well-being, where they are valued, and actively involved, and where they have access to adequate housing, infrastructure, and social support (Machielse, 2016; Alley et al., 2007). Characteristics of the eight-WHO domains could be helpful for older people to realize well-being in their neighborhood.

2.2.1 Outdoor spaces and buildings

Outdoor spaces and buildings influence the mobility, independence, safety and wellbeing of older persons. This consequently results in possibilities to age in place. Pavements and walking routes should be sufficiently clean and accessible (WHO, 2007). Seniors may be insecure about their incontinency and not having toilets available in public spaces, leading them to avoid social situations (Pot et al, 2007), which might affect their well-being. Fitzgerald and Caro (2014) stress that the involvement of older people could help to align spaces and buildings with their needs by pointing out challenges and barriers they face in current infrastructure. Also in a neighborhood, the presence of enough green and open spaces (e.g. public parks and community gardens) for recreation provide ample walking opportunities, and social contacts. This may contributes to the well-being of older people (Li et al., 2005; Sugiyama & Ward Thompson, 2008).

2.2.2 Transportation

Effective ***transportation*** systems are important for ageing in place as it minimizes social isolation, provides opportunities for social participation and enhances access to social programs and medical services for older people (Coughlin, 2001; Schaie & Pietrucha, 2000; WHO, 2002; 2007). Older people with physical constraints are more likely dependent on transportation in contrast to mobile elderly (Vezina & Pelletier, 1997). Shrestha et al. (2017) distinguished four categories of public transportation to suit the needs of various profiles of older people: accessibility, affordability, availability and acceptability. *Accessibility* refers to the position of relevant bus stops, the quality of the infrastructure, and the accessibility of buses (e.g. stepless entrances, handrails and priority seating services). Despite improvements in accessibility, elderly persons still encounter barriers and declined accessibility to transportation (Borges, 2012). *Affordability* refers to the elderly persons

reliance on public transportation when they do not own a vehicle due to less income after retirement (Smith et al., 2006). Since travelling costs are crucial barriers to many seniors for frequent travelling to their place of interest. *Availability* refers to the availability and frequency of public transportation from the close proximity of older people's homes to the destinations of their interest. *Acceptability* refers to comfort and preference of older persons without reluctance to use public transportation, in relation to, accessibility, safety, chauffeurs' attitude and behavior (helpful or not), and information (printed or use of technological devices). In addition, it also depends on the provision of special assistance to older people while using public transportation.

Besides private automobiles and public transportation, older people also depend on senior transportation services and walkable areas (MetLife Mature Market Institute, 2013). Therefore, well-maintained footpaths and close by bus stops empower older persons mobility and walkability making them feel less lonely (e.g. through social inclusion and participation). In short, less loneliness as well as affordable and accessible public transport is associated with a higher level of elderly well-being (Gilhooly et al., 2003).

2.2.3 Housing

Adequate ***housing*** conditions (mobility and accessibility) are important for the safety and well-being of older people (Costa-Font et al., 2009). Independent living seniors should be provided with affordable and modifiable housing services such as stair lifts, automatic door openers, living space on one level and walk-in showers (Fitzgerald & Caro, 2014). This empowers them to realize their needs for safety and comfort (Petersson et al., 2007; Tanner, Tilse & de Jonge, 2008). Further, the three principles of visitability, a zero-step entrance, wider doorways and shower possibilities on the main floor, improves accessibility and remove barriers for older people with mobility issues (Maisel, Smith & Steinfield, 2008; Pynoos, Caraviello & Cicero, 2009). Thus, home care assistance and technological tools (e.g. panic buttons) could empower older people to age in place and continue to be independent (Simpson, 2010).

2.2.4 Social participation

Several factors, such as decreased financial stability due to less income (retirement), loss of spouse and physical deterioration, determine the extent of social participation of ageing adults (Ahmad & Hafeez, 2011). ***Social participation*** is interpreted as the involvement in activities that allow interaction with others (Levasseur et al., 2010), for example, a cup of coffee with a friend or dinner with family. Social participation in social, cultural and spiritual activities allow the maintenance and establishment of relationships. It promotes self-acceptance through interactions with others, which helps to create a sense of belonging (Thoits, 2011). Older people with a high degree of social

participation experience a lower level of loneliness (Gilmour, 2012), more optimism (González-Herero & Extremera, 2010), and a higher level of well-being (Zhang, Feng, Liu, & Zhen, 2015; Bowling et al., 2002). Thus, social activities should be accessible and affordable for elderly persons to age in place (van Dijk et al., 2015; WHO, 2007).

2.2.5 Respect and social inclusion

The level of ***respect and social inclusion*** that older people experience is an important factor to age in place (Cramm, van Dijk & Nieboer, 2018). Older people wish to stay in contact with their social network in which community engagement, participation and social cohesion form important elements to their well-being (Roberts et al., 2017). They should be able to participate in society despite their illness, financial situation or cultural background (WHO, 2007) and should be able to identify themselves as valued members of the neighborhood (Ronzi et al., 2016). Higher degrees of social cohesion and sense of belonging enlarge self-esteem and reciprocal respect, and generate a high intensity of social activity (Cramm, van Dijk & Nieboer, 2012).

2.2.6 Civic participation and employment

Paid work, volunteering or civic engagement (e.g. voting, joining community meetings) provides opportunities for older people to continue their contribution to society and maintain social contacts (WHO, 2007; van Dijk et al., 2015). Motivated elderly are civically engaged when opportunities are provided and resources are available (Torres & Serrat, 2019). In contrast to elderly people that are not civically engaged, older persons who are civically engaged are more likely to have greater human and social capital resources (Serrat, Villar & Celdrán, 2015; Warburton & Stirling, 2007). Formal volunteering or employment in an organization ameliorate older people's health and well-being (Mjelde-Mossey et al., 2007; Morrow-Howell et al., 2009). Furthermore, research shows volunteering is associated with better mental health due to improved intellectual stimulation, social support, social relationship/interconnection with other volunteers, and a sense of purpose in volunteering roles (Kubzansky et al., 2000; Mui & Shibusawa, 2008). Yet barriers such as financial ability, mobility and lack of knowledge prevent them from volunteering (Rochester & Hitchison, 2002).

2.2.7 Communication and information

Staying connected to people, activities and events; and, the ability to obtain relevant information from newspapers and public posters, are essential to the well-being of older people and ageing in place (WHO, 2007; Everingham et al., 2009; Ala-Mutka et al., 2008). Older people will be more independent and need less support from health and social services when they receive easy and understandable information through the people who are in close and regular contact with them or from the locations frequently visited by them such as places of worship, workplaces or bus stops

(Barrett, 2005; Everingham et al., 2009). Rapid advances in ***information and communication*** technology make it possible for older people to be digitally connected with family members and obtain relevant information (for e.g. planning a trip) through the use of the Internet, smartphones, and tablets (Russell, Campbell & Hughes, 2008; Klimova et al., 2016; Lüders & Gjevjon, 2017). Frequent communication has fundamental effects on the well-being of seniors, as they are more vulnerable to social isolation than younger people due to life events such as widowhood, retirement and illness (Dickinson & Hill, 2007). However, the accessibility to information and communication is not always guaranteed due to unaffordability and lack of knowledge (WHO, 2007; Selwyn, 2004).

2.2.8 Community support and health services

Community support and health services are important factors to live independently and age in place (WHO, 2007). Besides services for physical care, services for social, psychological, economic and technological support must be available to older people (Gallagher & Truglio-Londrigan, 2004). Therefore, availability of a broad network of hospitals, health care providers, family caregivers, family support, home care and community organizations close to the older persons' homes are crucial for their well-being, given their vulnerability to diminishing mobility with ageing (Michael, Green & Farquhar, 2006). However, any lack in availability, affordability and awareness of services may hamper the use of community services by the elderly persons (Casado, van Vulpen & Davis, 2011).

2.3 Ageing in place framework

The concepts of the ageing in place domains described in section 2.2 and their relationship with well-being, resulted into the following conceptual model (see figure 2). This model is used to analyze the connection between Surinamese older people's well-being and the ageing in place domains.

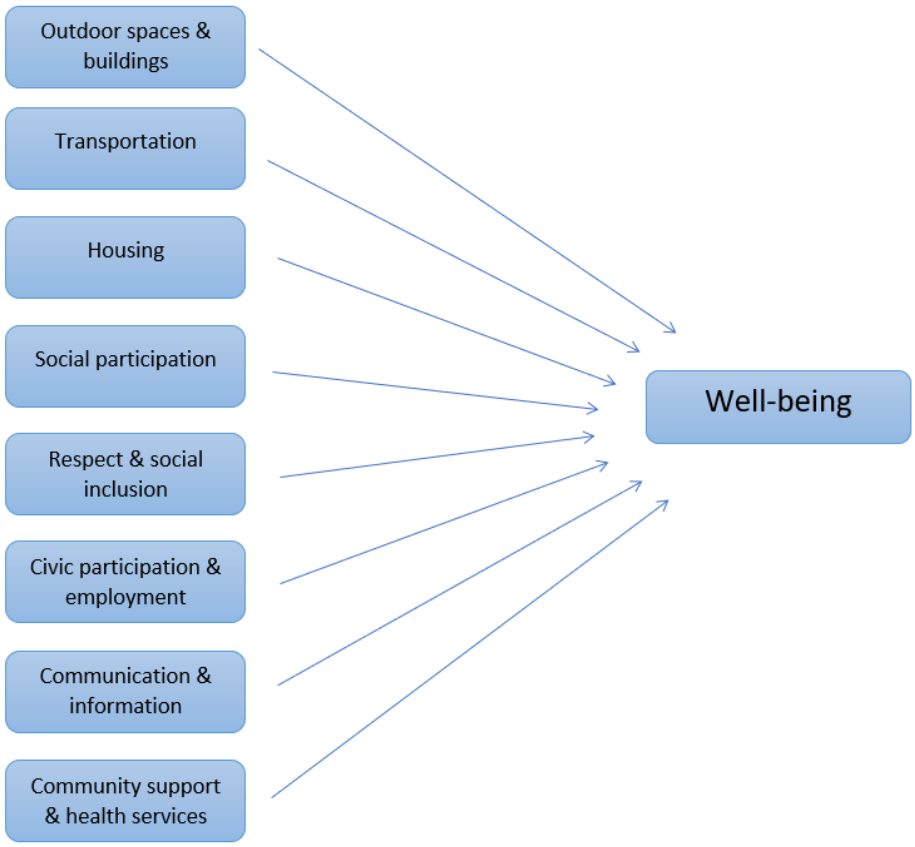

Figure 2. *Theoretical model: Ageing in place framework and the relationship with well-being according to Social Production Function theory. Based on: WHO, 2007; Cramm & Nieboer, 2015.*

2.4 Differences between Hindustani, Creoles, Javanese and Chinese older people

Each subgroup of older Surinamese migrants has different traditions, habits, norms and values (Babel, 2018). Thus, differences between Hindustani, Creoles, Javanese and Chinese seniors are likely. The study of Nancy Babel (2018) present examples of different housing desires on Surinamese people with a Hindustani, Creoles and Javanese background. Chinese Surinamese older people were not included in this study.

Most Creoles Surinamese elderly persons prefer living independently with or without care. Living in a group is not necessarily something they desire. In contrast, Javanese Surinamese older people prefer living within their own group, because majority of Javanese elderly originate from Suriname villages, where they regularly meet for important occasions and rely on each other's company (van Wengen, 2016). Living with people from their own culture and having possibilities for adjustments to their homes and facilities in the neighborhood are critical for them (Babel, 2018). Hence, studies show that Javanese seniors prefer living in a group rather than alone. Hindustani Surinamese elderly do not have a preference for either living independently or in a group (Babel, 2018).

In addition, Hindustani elderly encounter much stress due to their low income, poor housing and incomprehension of available care services (Hassankhan, Roopnarine & Mahase, 2016), which negatively affects their well-being. They avoid social situations because they are too ashamed to talk openly about how problematic not having toilets available in public spaces is, which can be a disadvantage while ageing in place.

Although Creoles, Javanese and Hindustani older migrants seem to have different preferences when it comes to ageing in place domains, but they do agree on the importance of the provision of care by healthcare providers who are familiar with their culture. They prefer healthcare providers with the same cultural background who understand them and pay personal attention. These elderly consider this as an important aspect for ageing in place (Babel, 2018).

Despite the availability of many papers concerning the experience of the ageing in place domains of older people, research on Creoles, Javanese and especially Chinese older Surinamese people are lacking with regard to ageing in place and well-being in a neighborhood. As shown in figure 2, the ageing in place framework will be used to describe the differences in age-friendliness of neighborhoods in which subgroups of older Surinamese migrants live and how it affects their well-being.

3 Research methods

To answer the research questions as stated in section 1.2, mixed methods, in the sense that both qualitative and quantitative methods, are used. Qualitative data analysis is performed to describe and interpret in which context ageing in place occurs (Philipsen & Vernooy-Dassen, 2004). The qualitative data is collected through conducting semi-structured and in-depth interviews of the Surinamese elderly. Quantitative data analysis is performed to describe the level of well-being of Surinamese elderly and its association with the eight domains of age-friendliness. The quantitative data is previously collected for a project on ageing in place for older Surinamese migrants and is readily available via the supervisor.

3.1 Data collection methods

3.1.1 Qualitative data collection

Qualitative data is collected through individual, semi-structured and in-depth interviews. Interviews are structured a-priori on a list of topics drawn to cover all themes of the research question. Further, the open questions in the topic list creates possibilities for the interviewer to continue asking when answers were unclear and gave the respondents the possibility to share their motives, views, experiences and reflection upon their own (physical and social) well-being and ageing in place domains extensively, which increases validity (Mortelmans, 2013). The topic list consists of the following topics (see Appendix B for extensive version):

1. Information of the respondent (such as name, age, residence, ethnicity, number of years in the Netherlands),
2. Physical well-being
3. Social well-being
4. Ageing in place domains
5. Experiences with the different ageing in place domains and well-being realization, and
6. Possibilities for improvements of the domains.

This study required separate interviews of elderly from each Surinamese subgroup, i.e. Hindustani, Creoles, Javanese, and Chinese (see Appendix A). In total 10 interviews were conducted in which 1 respondent was from the Chinese subgroup and 3 respondents from each subgroup of Hindustani, Creoles and Javanese. Further, all the 10 elderly in the sample were 70+, in which 3 are men and 7 are women. Data collection continued until saturation was reached.

Respondents were recruited from cities located in South-Holland, especially in the neighborhoods of Rotterdam and The Hague which have a large representation of Surinamese older persons. This enabled the researcher to recruit a sufficient number of respondents. Also the researcher's own network, as well as the network of relatives, has been used to recruit respondents and were approached via telephone. Apart from one interview by telephone, all other interviews were face-to-face meetings.

3.1.2 Quantitative data collection

The already available quantitative dataset, consists of a sample of 679 (26% response rate) community-dwelling older (age ≥ 70 years) Surinamese individuals with a Hindustani, Creoles, Javanese and Chinese background living in Rotterdam, the Netherlands. Data is collected by asking these individuals to complete a questionnaire on personal and neighborhood characteristics between March and June 2020. Participants from 56 neighbourhoods received questionnaires via post followed by a postal reminder and, including an informational leaflet describing the objective of the study, its anonymous character and a written informed consent. No financial incentive was provided. This study has been approved by the Ethics Review Committee of Erasmus University Rotterdam (application no. 19-048). The committee also determined that the rules imposed by the Dutch Medical Research Involving Human Subjects Act did not apply.

3.1.2.1 Measures

Neighborhood characteristics were assessed using statements based on the eight WHO domains, as mentioned in section 2.2, (WHO, 2007) and other research (Van Dijk et al., 2015; Lui et al., 2009; Cramm, van Dijk & Nieboer, 2018; Nieboer & Cramm, 2018). Twenty-six items were used to represent the ageing in place domains (see Appendix C). Assessment was carried out by asking the participants to indicate characteristics missed in their neighbourhoods using a five-point scale ranging from 'not missed at all' (0) to 'extremely missed' (4). Examples are:

1. 'Public buildings with elevators that are easily accessible for wheelchairs and walkers' (outdoor spaces and buildings, 4 items);
2. 'Good public transport' (transportation, 2 items);
3. 'Suitable housing for older individuals' (housing, 2 items);
4. 'Affordable activities for older individuals' (social participation, 3 items);
5. 'A neighbourhood where individuals have respect for older individuals' (respect and social inclusion, 5 items);

6. ‘A neighbourhood where older individuals are involved, for example concerning changes in the neighbourhood’ (civic participation and employment, 2 items);
7. ‘Local newspaper with information about what’s going on in the neighbourhood’ (communication and information, 2 items), and
8. ‘A neighbourhood with the GP and pharmacy at walking distance’ (community support and health services, 6 items).

Well-being was measured with the 15-item version of the Social Production Function Instrument for the Level of Well-Being: SPF-ILs (Nieboer et al., 2005) (see Appendix C). This instrument measures whether the overall well-being, taking into account the need for comfort, stimulation, status, affection and behavioural confirmation, are met. The reliability and validity of this instrument has been tested thoroughly (Nieboer & Cramm, 2018) and proven in older populations (van Dijk et al., 2015; Cramm et al., 2013; Slotman et al., 2015; Cramm & Nieboer, 2015). Examples of questions in the 15-item SPF-ILs are:

- “In the past few months have you felt physically comfortable?” (comfort);
- “Do you really enjoy your activities?” (stimulation)
- “Do you feel that people really love you?” (affection)
- “Do you feel useful to others?” (behavioral confirmation), and
- “Are you known for the things you have accomplished?” (status).

Participants could evaluate their level of well-being on a four-point scale ranging from ‘never’ (1) to ‘always’ (4). The lower the score, the lower their well-being.

Furthermore, the following socio-demographic variables were questioned:

1. Age;
2. Gender (male or female);
3. Marital status (living alone/widowed/divorced or married/living with a partner);
4. Educational level, and
5. Income level.

Educational level was dichotomised as low (completion of elementary school or less) and high (more than elementary school). To determine their income levels, participants were asked to report their monthly household income (including social benefits, pensions and alimony), ranging from ‘less than €1000 a month’ (1) to ‘€3050 or more a month’ (4), with a fifth ‘do not know/ do not want to tell’ option provided. This variable was dichotomised as low (less than €1350 a month) and high (€1350 or more a month).

3.2 Data analysis

3.2.1 Qualitative data analysis

All interviews were conducted in Dutch, audio-taped after consent was given by the respondents, and verbatim transcribed, to ensure important information is not omitted. To avoid overlooking important information, narratives of the respondent were only translated into English when writing the results section. With the aim of securing a holistic perspective, data was analyzed both in an inductive and deductive manner. This has been done with the software ATLAS.ti 9 Scientific Software Development GmbH.

First, theory is deduced from empirical findings using inductive coding, to provide theoretical insights, to filter information and not to lose relevant information about the underlying elderly's perspectives on well-being and the ageing in place domains. Next, the information was filtered and categorized by deductive coding (Boeije, Tobi, & Scheepers, 2016). The information was categorized into the following concepts (see Appendix D):

1. Physical well-being (i.e., comfort and stimulation);
2. Social well-being (i.e., affection, behavioral confirmation and status);
3. Outdoor spaces and buildings;
4. Transportation;
5. Housing;
6. Social participation;
7. Respect and social inclusion;
8. Civic participation and employment;
9. Communication and information;
10. Community support and services;
11. Relation well-being
12. Missing ageing in place characteristics, and
13. Improvements of ageing in place domain.

3.2.2 Quantitative data analysis

The SPSS software (version 26; IBM Corporation, Armonk, NY, USA) was used to analyse data and to perform descriptive statistics on data such as mean, standard deviation and percentage characterising the study population. An analysis of variance (ANOVA-test) has been conducted to analyse differences in well-being and differences in missing neighbourhood characteristics between the Hindustani, Creoles, Javanese and Chinese individuals. Pearson correlational analyses was performed to identify associations between the missing neighborhood characteristics for ageing in

place and the needs for overall and specific well-being. Two-sided *p* values ≤ 0.05 were considered to be significant.

3.3 Validity

To increase validity in this study, methodical triangulation is used (Mortelmans, 2013). The use of both quantitative (existing questionnaire data) and qualitative (interviews) data aims to reduce biases in this study and therefore to increase internal/methodological validity. A well-validated measurement instrument, to describe well-being, is used to ensure validity. In addition to gain validity a member check has been conducted after each interview (Baarda et al., 2018). The researcher had a neutral, objective and involved attitude towards the respondents to avoid researcher's bias (Zohrabi, 2013).

3.4 Reliability

To conduct a reliable study, it is important that the study is reproducible and verifiable, such that the results match in unchanged circumstances (Creswell, 2014). All actions taken in this study are described and represented in an audit trial to reproduce this research (Mortelmans, 2013). To ensure reliability, a topic list is used, attempting to make the interviews as identical as possible. Also, the rather large questionnaire sample makes it possible to perform reliable analyses. In this study, the Cronbach's alpha value for the overall well-being instrument was 0.721, indicating good reliability and for the eight WHO domain instrument the value was 0.899, indicating excellent reliability.

4 Results

This chapter describes the qualitative and quantitative findings on how Surinamese elderly perceived well-being, and their perception on the ageing in place domains. First of all, the important findings of the qualitative data are discussed. This consists of discussing the well-being of Surinamese older people, as well as their experiences on the eight ageing in place domains in their neighborhoods. Next, the quantitative data is presented with a descriptive measure of the population, well-being and the missing ageing in place characteristics in the neighborhood. Finally, the differences between the ethnic groups and their well-being/experiences with respect to missed neighborhood characteristics are shown.

4.1 Qualitative results

4.1.1 Physical well-being

In general, the respondents reported to be satisfied with their well-being. The Surinamese older individuals indicate that physically they do feel less fit than a few years prior, but they assume that this is part of the overall ageing process.

"I have to accept this time I say to myself. I do not have pain, but I can do fewer things. If I walk for too long, I am tired. But otherwise I'm normal. When you get old you have limitations and flaws, but I can still do everything. I can still drive my car, not too far of course. I will be 73 years old, I think I can still do quite a lot. I have to take it easy and not do too much.'' – 72-year-old Javanese man.

"I have some problems with arthosis, wear and tear here, wear and tear there. And then you have those pains, but at the age of 75 you can expect that. As far as I am concerned, I think it is quite normal.'' – 75-year-old Hindustani man.

Despite the constraints and the difficulties these older adults experience; which refers to their comfort level e.g.- regarding walking and cycling, they do find it important to stay fit. Most of the older persons indicate that they prefered not to stay inside their homes, but rather attach great importance to their activities. The main reasons that the elderly go outside are to visit the supermarket or the market for groceries, a walk through the shopping center and walking/cycling through a park for exercise. Not being able to walk, cycle or in general to go outside for a day is seen as a great loss and leads to a notion of incompleteness and boredom. The Hindustani, as well as the Javanese, Creoles and Chinese older respondents find exercise, as well as activities such as reading and word puzzles essential. This can be seen as an aspect of stimulation.

“Every day I have to go all over the place with the neighbor. I don't have to stay home all the time, I can't do that. I get bored easily, and I'm alone. Then I go outside for a walk, near the waterfront.’’ – 72-year-old Hindustani woman.

4.1.2 Social well-being

The respondents attach great importance to maintain social contacts and therefore, have regular contact with their children, family, friends and acquaintances. Although, in the past year this has been greatly reduced because of Covid-19. Moreover, out of the 10 respondents, 8 candidates are members of a walking/biking group or affiliated with an association specifically designed for elderly. Most of the respondents reported to be associated with activities linked to their diverse ethnic backgrounds. Only the Javanese respondents indicate that they are members of an association especially for elderly Javanese Muslims, Christians and Javanisms (a distinct religion). One of the Javanese women indicated that she felt very welcomed and loved by the association in her neighborhood. This helps her to fulfill the need for affection and behavioral confirmation.

“I feel really good here, I am really happy. Everyone also started asking me, the people from our association, how I liked the new house in this neighborhood. I replied: 'I am really happy.’” – 71-year-old Javanese woman (A).

The Hindustani, Creoles and Chinese elders prefer diversity. They like to chat with everyone in the neighborhood, irrespective of their ethnicity or religion. The respondents find it important that the people they interact with have the same norms and values. Furthermore, these respondents consider expressing their own opinions and appreciating each other to help realize behavioral confirmation.

“If something is bothering me, I say so. I do not know if the neighbors appreciate my opinion, but I am just being honest. I say it and they should not think I am distancing myself from them or I am excluding them or something else.” – 70-year-old Creoles woman.

Knowing people in the neighborhood and having conversations with the neighbors makes it easier to have social interaction and therefore, realizes affection. It also relates to having a certain status in the neighborhood. However, despite mutual appreciation and respect, these respondents also indicate that just having a chat with their neighbors on the street is sufficient. More interaction is not required according to them.

“I like to have a chat with my neighbors. People respect me for my position, so the fact that I have been a teacher (…). They do look up to me a bit. Also because I am the only Surinamese and the

others are natives. Moreover we are appreciated because of that, also the way we live and our lifestyle." – 70-year-old Creoles woman.

"*You just say hello and that's it. You don't ask them for a cup of coffee at your home. If you've called them once, they want to come every time, and that's not necessary for me."* – 79-year-old Hindustani man.

4.1.3 Ageing in place domains

4.1.3.1 Outdoor spaces and buildings

4.1.3.1.1 Facilities

The presence of facilities, such as supermarkets, grocery stores, shops, bakeries, butcher stores and farmer markets close to home are very important to the elderly. In the view of elderly, these are essential services that should be available close to home. Although the respondents indicate that they do not often enter a public building but, they think it is important to have public toilets. Respondents who mentioned that the facilities are not nearby indicate that they really miss this. Such facilities in the neighborhood provide an extra reason to go outside. According to the seniors, as a result, they will have more social interaction, because of meeting more and different people.

"*I do miss shops in the neighborhood. I would go outside more often. Still, you have to go outside every day for fresh air and you will see and meet more 'other types of' people. I might then meet even more people."* – 79-year-old Hindustani man.

Furthermore, the Surinamese elderly find it important that facilities such as parks and other recreational areas are present. The respondents not only like to walk in parks but also like to walk in the city or shopping center. They see this as a nice alternative. The availability of resting places, such as benches, is very important for the seniors because of their decreasing mobility. However, the respondents clearly indicate that their own motivation is the reason for them to go outside and exercise, and not the availability of walking/cycling opportunities in parks.

"*Parks are not necessarily the reason I exercise or go outside, I do that myself. For example, last night, I had had little exercise and then I put down my yoga mat and start practicing (…). I have a few of those yoga books and exercises in my head and then I am going to do that. I am not going outside for that. If you really want to work out and stay fit, this approach will work."* – 77-year-old Creoles woman.

4.1.3.1.2 Safety

The respondents indicated that footpaths and bicycle lanes should be clean and safe as these are used regularly. For example, shards of broken bottles or loose tiles do not belong on the streets and are dangerous to their declining mobility. Another example, dog poop on the footpaths and in the grass is very annoying because they have to pay attention to where they walk every time. Last example, wide bicycle lanes are desirable, since narrow bicycle lanes can lead to dangerous situations.

"Some bike lanes are a bit narrow, especially these days with those electric bikes, they overtake you with a lot more speed. And as you get older, your balance is not that well anymore. When a bicycle comes too close to you, you might tumble immediately. These bike lanes should be a bit wider. But I know these narrow bike lanes by now, hence I avoid it." – 77-year-old Creoles woman.

Most respondents indicate that they feel safe and comfortable in their neighborhood. Nevertheless, a few did mention that they find the neighborhood unsafe and unpleasant due to the prevailing crime.

"It is a bit unsafe here. People still get robbed on the streets here, including older persons. It happened here in front of my door in the afternoon to a women with a walker. They chased her and cornered her in front of her door and robbed her. That is not good. This is why I am a little scared." – 72-year-old Javanese man.

4.1.3.2 Transportation

Most respondents use public transport, irrespective of the distance and accessibility to the transportation stations/stops. Stations farther away from home are not a problem as the respondents see this as a way to exercise. However, the experience is much better when these stations are closer to home. Some elderly persons find public transportation affordable as they can travel for free within a certain region and for discount outside the region. Other respondents indicate that they find public transportation less accessible and affordable. These consider it as a barrier and use public transportation rarely. Not only public transportation, but also senior transportation (regional taxi/Vervoer Op Maat) can sometimes be unaffordable.

"*Public transport is not really financially accessible, it should be cheaper (...) And if you have to take the regional taxi every time, it also costs you quite a bit of money.''* – 70-year-old Chinese woman.

"*I am always time-bound by public transport. If you go by train and have to change to the bus, you have to wait a long time. Usually it is a half hour wait, and on weekends you have irregular schedule, hence you might have to wait even longer. I think that should change.''* – 70-year-old Creoles woman.

Hindustani seniors indicated that they mostly use public transportation (or Vervoer Op Maat) when they want to visit family, friends, acquaintances and healthcare facilities. Similar responses are received for Chinese, Javanese and Creoles respondents. The Creoles older people also use public transportation for other purposes such as going to the shopping centers or exploring places in the city. Of the Javanese respondents, one of the older individuals indicated that she makes extensively use of public transportation and depends on public transportation to get in touch with family and friends.

4.1.3.3 Housing

The majority of the elderly live in a one-floor house. Only two Creoles respondents have indicated that they live in a multi-story house. They do not have trouble with using the stairs and therefore, do not yet need a stair lift.

Furthermore, the respondents indicate that they are able to do most of the chores in their household by themselves. When they encounter problems, they ask their children and/or grandchildren for assistance. A few respondents, whose health problems (e.g. pain in the arms) do not allow them to perform certain activities in the household, have indicated that they take home care assistance to clean the windows and other household chores.

4.1.3.4 Social participation

Due to Covid-19, hardly any activities are organized which is seen as a serious loss by the respondents. Typically, they were informed about the activities through brochures, newsletters or the neighborhood newspaper, which they receive at home. When this did not happen, the elderly indicated that they do not want to participate, despite the awareness of these activities. Participation in activities or voluntary work organized in the neighborhood are predominantly done by their own initiative. This depends on factors such as time, interest and mobility.

"*The distribution of information has an influence on knowing what is going on in the neighborhood, but ultimately it really comes down to yourself. You may know what activities are organized, but do you want to go? I get everywhere. I have no barriers. If I like it or find it interesting, I will do it. (...) People know they can volunteer. You need to show interest. You must want it yourself. You will receive the necessary information via a brochure or newsletter, but it is up to you as a person whether you really want to do voluntary work*." – 82-year-old Creoles woman.

These findings show that Surinamese older people are more likely to build up social relationships with other people from their own associations rather than with people from their own neighborhood. The organized activities by the associations are mostly religious on which older people

like to talk about. However, they also participate in activities organized by the neighborhood out of interest.

4.1.3.5 Respect and social inclusion

The connection with the neighborhood and their neighbors also plays a role for the older people in deciding whether to participate in neighborhood activities. One of the respondents indicated that the poor relationship with their neighbors results in less involvement in the neighborhood. The neighborhood does not always guarantee more social contact.

"*Because you know, I think I am still good on my feet and I still like traveling a lot. I go all the way to my connections in Leiden and Zaandam, and then look for something nearby? Well that has not been necessary yet. (…) I came home one time and went to put my bicycle away and saw a new woman, so I thought that must be the new neighbor from downstairs, so I said "hello", but the woman did not reply. Also when I want to go up the stairs then I see someone looking at me and I hear a grunt… I thought okay…. Those are responses I do not like*." – 77-year-old Creoles woman.

Also, Javanese respondents mainly have contact and interactions with people with a Javanese background. Yet the need of contact with people from other ethnicities is visible.

"I do miss a clubhouse and especially meeting other people, including people with different ethnicities, such as Turkish and Moroccan background. I do miss a central meeting place in this neighborhood." – 72-year-old Javanese man.

4.1.3.6 Communication and information

It can be concluded that all the Surinamese elderly are kept well informed about matters that are going on in the neighborhood or activities that will take place in the neighborhood. This is done by providing brochures, newsletters or newspaper at home. When the information is not provided correctly, the respondents did not consider this as a problem.

4.1.3.7 Civic participation and employment

Participation in meetings organized by the municipality for more involvement differs per elder. The older people who feel more connected with the neighborhood and their neighbors are more likely to participate in such gatherings rather than older people who do not share these feelings.

4.1.3.8 Community support and health services

Overall, the respondents mention good availability of health services in their neighborhood. Nevertheless, some elderly did experience problems with getting in contact with, e.g., the municipality or housing corporations. The wait time to reach these organizations are sometimes too

long. One of the respondents even indicated that the housing corporation falls short in providing assistance when help is requested.

"*A couple lives above me, who just moved in. And they make a lot of noise. I then notified the housing corporation concerning the noise and they visited me and then we went upstairs to talk to them (…). But the housing corporation did not help. They afterwards informed me that these noises are part of the 'sound of life'. Every now and then when they make noise I sleep with cotton wool in my ears. Luckily when the police arrived, they stopped making any noise, they got the hint."* 71-year-old Javanese woman (B).

4.1.4 Ageing in place domains and well-being needs

The results revealed that some ageing in place domains actually contribute to certain aspects of Surinamese elderly's well-being. Neighborhood characteristics of *outdoor spaces and buildings*, help to realize multiple needs of well-being, namely ***comfort, stimulation, affection*** and ***behavioral confirmation***. The availability of numerous facilities close to home, e.g. supermarkets, shops, grocery stores, and parks, create possibilities for the seniors to go outside and stay active as well as possibilities for the Surinamese older persons to stay socially connected with others. These are examples of the well-being aspects ***stimulation*** and ***affection***. These social contacts give the elderly persons feelings of being part of and accepted in the neighborhood and help to realize the need for ***behavioral confirmation***. An example of the well-being aspect ***comfort*** are benches in the neighborhood, which can serve as resting place for the older people and create a safe and secure feeling.

Transportation in the neighborhood ensures Surinamese older people to travel and enjoy activities in and beyond their neighborhood. Furthermore, public transportation creates possibilities for the Surinamese elderly persons to meet others. Thereby, the need for ***affection*** gets realized for the Hindustani, Chinese, Javanese and Creoles elderly persons, which also contributes to the need for ***stimulation*** for e.g. the Creoles seniors.

The domains *social participation* and *respect and social inclusion* have effect on the realization of ***stimulation***, ***behavioral confirmation*** and ***affection***. Surinamese older people build relations and social connections with others by participating in activities organized by their associations and their neighborhoods. This contributes to the need for ***affection***. However, poor relationships and less involvement in the neighborhood creates a feeling of non-acceptance and has consequences for social interactions with their neighbors.

Problems with *community support (and health services*), e.g. long wait times to get in contact with municipalities or housing corporations, affects the level of ***comfort***. Falling short in the provision of assistance by housing corporations creates a feeling of discomfort and anxiety by the Surinamese elderly persons, which is another example of comfort.

4.2 Quantitative results

The characteristics of the study population are illustrated in table 1. Of the 697 respondents, 54.2% were female, 67.4% were not married, 38.5% had low educational levels and 49.6% had a low income. Mean age was 76.2 years (standard deviation (SD) = 4.9; range 70-100). As for ethnicity, 6.0% of the sample was Javanese, 1.4% Chinese, 41.5% Creoles and 36.9% Hindustani.

Table 1. Descriptive statistics for the study population of Surinamese older people in Rotterdam

Characteristic	% or mean (SD; range)
Gender (female)	54.2
Age	76.2 (4.9; 70-100)
Marital status (unpartnered)	67.4
Education (low)	38.5
Income (low)	49.6
Ethnicity	
Javanese	6.0
Chinese	1.4
Creoles	41.5
Hindustani	36.9

SD, standard deviation.

Table 2 contains the descriptive statistics for overall well-being and separated for each instrumental need to realize well-being. The mean level of overall well-being was 1.9 (SD = 0.5; range 0-3). The lowest mean level was 1.4 (SD = 0.7; range 0-3) for the well-being need ***status***.

Table 2. Descriptive statistics for the instrumental needs to achieve well-being for Surinamese older people in Rotterdam

Well-being aspects	Range	Mean (SD)
Physical well-being	0-3	1.8 (0.6)
Comfort	0-3	1.6 (0.7)
Stimulation	0-3	2.0 (0.7)
Social well-being	0-3	1.9 (0.5)
Affection	0-3	2.1 (0.7)
Behavioral confirmation	0-3	2.2 (0.6)
Status	0-3	1.4 (0.7)
Total score well-being	0-3	1.9 (0.5)

SD, standard deviation.

In table 3 the descriptive statistics of the missing ageing in place domains by Surinamese older people are reported. The mean score for missing neighborhood characteristics to age in place was 1.1 (SD = 0.8; range 0-4). Mean scores of housing 1.4 (SD=1.3; range 0-4) and social participation 1.4 (SD=1.2; range 0-4) are higher compared to the mean score of other ageing in place domains. Thus, the neighborhood characteristics for housing and social participation are more missed by Surinamese older people in Rotterdam than other neighborhood characteristics.

Table 3. Descriptive statistics for missing neighborhood characteristics for Surinamese older people in Rotterdam

Missing neighborhood characteristics to age in place	Range	Mean (SD)
Outdoor spaces and buildings	0-4	1.1 (1.0)
Transportation	0-4	1.1 (1.1)
Housing	0-4	1.4 (1.3)
Social participation	0-4	1.4 (1.2)
Respect and social inclusion	0-4	1.1 (0.9)
Civic participation and employment	0-4	0.9 (0.9)
Communication and information	0-4	1.0 (1.0)
Community support and health services	0-4	1.0 (1.0)
Total score missing neighborhood characteristics to age in place	0-4	1.1 (0.8)

SD, standard deviation.

A one-way between-groups analysis of variance (ANOVA) was conducted to explore differences in overall well-being and separate for well-being needs for Surinamese Hindustani, Creoles, Javanese and Chinese (see table 4). There was no statistically significant difference at the $p < 0.05$ level in overall well-being scores between the several ethnic groups F (3) = 1.899; $p = .129$. Social well-being needs affection ($p = .042$) and behavioral confirmation ($p = .044$) differ significantly, meaning that the differences in ***affection*** and ***behavioral confirmation*** between groups are greater than the differences within the groups. However, Post Hoc comparisons using the Tukey HSD tests indicated no significant differences in well-being between the various ethnic groups of Surinamese Hindustani, Creoles, Javanese and Chinese older people. Despite not reaching statistical significance, the actual difference in mean scores between the groups were visible. The mean score of the total overall well-being of Chinese older people (M = 1.7, SD = 0.5) was lower than the well-being of Javanese (M = 1.9, SD = 0.5), Creoles (M = 1.9, SD = 0.5) and Hindustani (M = 1.8, SD = 0.5) older people. This difference was mostly due to lower scores in the well-being needs to realize social well-being (M = 1.5, SD = 0.6); ***affection, behavioral confirmation*** and ***status***.

Table 4. Differences in well-being scores for Surinamese Javanese, Chinese, Creoles and Hindustani older people (overall and separate for well-being aspects)

Well-being aspects	**Javanese**		**Chinese**		**Creoles**		**Hindustani**		**ANOVA Between groups**
	M (SD)	*n*	M (SD)	*n*	M (SD)	*n*	M (SD)	*n*	*p*
Physical well-being	1.9 (0.6)	40	1.9 (0.4)	8	1.9 (0.6)	265	1.7 (0.6)	235	.081
Comfort	1.7 (0.6)	41	1.8 (0.7)	9	1.6 (0.7)	269	1.6 (0.7)	242	.231
Stimulation	2.0 (0.7)	40	2.0 (0.5)	9	2.0 (0.7)	277	1.9 (0.7)	245	.073
Social well-being	1.8 (0.6)	38	1.5 (0.6)	7	1.9 (0.5)	221	1.9 (0.5)	217	.121
Affection	2.0 (0.8)	41	1.9 (0.8)	9	2.2 (0.7)	271	2.1 (0.7)	242	.042
Behavioral confirmation	2.1 (0.7)	40	1.9 (0.6)	9	2.3 (0.6)	255	2.2 (0.6)	242	.044
Status	1.4 (0.8)	39	1.0 (0.7)	9	1.3 (0.6)	255	1.4 (0.7)	231	.347
Total score well-being	1.9 (0.5)	38	1.7 (0.5)	7	1.9 (0.5)	211	1.8 (0.5)	205	.129

M, mean; SD, standard deviation; n, number of response.

In addition, an ANOVA test was conducted to assess differences in the experience of ageing in place domains for these four ethnic groups (see table 5). There was a statistically significant difference at the $p < 0.05$ level between missing ageing in place characteristics and the various subgroups, F (3) = 7.071; p = .000, which means that differences between each subgroup of Surinamese Javanese, Chinese, Creoles and Hindustani older people in missing some of the neighborhood characteristics are greater than the differences in missing characteristics within these groups.

Post-hoc comparisons using the Tukey HSD test indicated that besides the ageing in place domains *housing* and *social participation*, statistical significant differences in the other six domains were found between the Creoles and Hindustani ethnicity groups. The mean scores for Hindustani older individuals on *outdoor spaces and buildings* (M = 1.3, SD = 1.1; *p* = .000), *transportation* (M = 1.3, SD = 1.1; *p* = .000), *respect and social inclusion* (M = 1.3, SD = 1.0; *p* = .001), *civic participation and employment* (M = 1.0, SD = 1.0; *p* = .022), *information and communication* (M = 1.2, SD = 1.0; *p* = .022), and *community support and health services* (M = 1.3, SD = 1.0; *p* = .000) were significantly different from the mean scores for Creoles older persons on *outdoor spaces and buildings* (M = 1.0, SD = 0.9; *p* = .000), *transportation* (M = 0.9, SD = 1.10 *p* = .000), *respect and social inclusion* (M = 0.9, SD = 0.9; *p* = .001), *civic participation and employment* (M = 0.8, SD = 0.8; *p* = .022), *communication and information* (M = 0.9, SD = 1.0; *p* = .022), and *community support and health services* (M = 0.9, SD = 0.9; *p* = .000). On these domains, the mean scores for Hindustani older persons were higher than the mean scores for Creoles older people, suggesting Hindustani seniors miss these characteristics more in their neighborhood than Creoles older individuals.

Furthermore, the Tukey HSD test found statistical differences between Javanese and Creoles older people on the ageing in place domains *outdoor spaces and buildings* (*p* = .022) and *housing* (*p* = .034). The mean scores for Javanese older persons on *outdoor spaces and buildings* (M = 1.4, SD = 0.9) and *housing* (M = 1.9, SD = 1.2) were higher than the mean scores for Creoles older people on *outdoor spaces and buildings* (M = 1.0, SD = 0.9) and *housing* (M = 1.3, SD = 1.3), indicating Javanese people miss these ageing in place characteristics more in their neighborhood than Creoles older persons.

Table 5. Differences in ageing in place domains / neighborhood characteristics to age in place for Surinamese Javanese, Chinese, Creoles and Hindustani older people

Ageing in place domains	Javanese		Chinese		Creoles		Hindustani		ANOVA Between groups
	M (SD)	*n*	M (SD)	*n*	M (SD)	*n*	M (SD)	*n*	*p*
Outdoor spaces and buildings	1.4 (0.9)[b]	40	1.4 (1.1)	10	1.0 (0.9)[a, b]	269	1.3 (1.1)[a]	240	.000
Transportation	1.3 (1.1)	41	1.5 (1.1)	10	0.9 (1.0)[a]	276	1.3 (1.1)[a]	247	.000
Housing	1.9 (1.2)[b]	42	1.9 (1.0)	10	1.3 (1.3)[b]	274	1.6 (1.3)	243	.010
Social participation	1.4 (1.2)	40	1.4 (0.6)	10	1.3 (1.2)	272	1.6 (1.3)	244	.105
Respect and social inclusion	1.3 (0.8)	39	1.2 (0.8)	10	0.9 (0.9)[a]	258	1.3 (1.0)[a]	241	.001
Civic participation and employment	1.1 (0.9)	38	1.1 (0.8)	10	0.8 (0.8)[a]	253	1.0 (1.0)[a]	237	.020
Communication and information	1.0 (0.8)	38	1.1 (0.7)	10	0.9 (1.0)[a]	253	1.2 (1.0)[a]	234	.042
Community support and health services	1.0 (0.9)	39	1.4 (1.0)	10	0.9 (0.9)[a]	256	1.3 (1.0)[a]	237	.000
Total score ageing in place domains	1.3 (0.7)	38	1.4 (0.7)	10	1.0 (0.8)	237	1.3 (0.9)	224	.000

M, mean; SD, standard deviation; n, number of respondents.

[a] , Tukey test for differences between Hindustani and Creoles people.

[b], Tukey test for differences between Javanese and Creoles people.

The relationships between well-being needs and the ageing in place domains were investigated using Pearson correlation (see table 6). Overall, most ageing in place domains were associated with the well-being needs ***comfort, stimulation, affection*** and ***behavioral confirmation***.

Comfort was significantly related to the domains outdoor spaces and buildings (*r = -.135, p = .001*), transportation (*r =-.131, p = .001*), respect and social inclusion (*r = -.143, p = .000*), communication and information (*r = -.093, p = .024*), and community support and health services *(r = -.133, p = .006*) with a negative association, indicating a lower level of ***comfort*** when these neighborhood characteristics have a higher score, and are thus more missed. ***Stimulation*** was significantly correlated to outdoor spaces and buildings (*r = -.124, p = .002*), transportation (*r = -.090, p = .023*), respect and social inclusion (*r = -.123, p = .002*), and community support and health services (*r = -.096, p = .018*), with a negative correlation, meaning when more ageing in place characteristics were missed, it was more difficult to realize ***stimulation***.

Whereas ***affection*** and ***behavioral confirmation*** were significantly related to several ageing in place domains and had a negative correlation with them, which means that more missed attributes regarding outdoor spaces and buildings (*r = -.092, p = .022; r = -.146, p = .000*), transportation (*r = -.102, p = .011; r = -.104, p = .01*), respect and social inclusion (*r = -.143, p = .000; r = -.119, p = .004*), civic participation and employment (*r = -.130, p = .001; r = -.109, p = .008*), communication and information (*r = -.102, p = .013; r = -.128, p = .002*), and community support and health services (*r = -.132, p = .001; r = -.140, p = .001*), resulted in lower levels of ***affection*** and ***behavioral confirmation***, ***status*** had no relationship at all with the ageing in place domain respect and social inclusion (*r = 0, p = .997*).

Table 6. Associations of well-being (separate for aspects) with the ageing in place domains

	Physical well-being			Social well-being																				
				Comfort			Stimulation						Affection			Behavioral confirmation			Status			Overall well-being		
	r	*p*	*n*	*r*	*p*	*n*	*r*	*p*	*n*	*r*	*p*	*n*	*r*	*p*	*n*	*r*	*p*	*n*	*r*	*p*	*n*	*r*	*p*	*n*
Outdoor spaces and buildings	-.149**	.000	601	-.135**	.001	613	-.124**	.002	627	-.060	.164	534	-.092*	.022	615	-.146**	0	601	.04	.335	589	-.111*	.012	512
Transportation	.128**	.001	614	-.131**	.001	627	-.090*	.023	640	-.023	.587	543	-.102*	.011	630	-.104*	.01	615	.058	.158	599	-.089*	.043	520
Housing	-.091*	.024	609	.062	.124	622	-.037	.353	635	-.048	.267	544	.01	.803	625	.051	.206	610	-.043	.29	599	.013	.774	521
Social participation	.041*	.313	608	-.053	.184	620	-.013	.74	634	.023	.591	540	-.026	.517	623	-.008	.845	609	.044	.287	596	-.027	.537	517
Respect and social inclusion	-.155**	.000	589	-.143**	0	603	-.123**	.002	614	-.093*	.033	524	-.143**	0	605	-.119**	.004	592	0	.997	576	-.146**	.001	501
Civic participation and employment	-.074	.073	582	-.061	.138	594	-.069	.091	607	-.069	.114	521	-.130**	.001	597	-.109**	.008	585	.042	.316	572	-.094*	.036	498
Communication and information	-.091*	.029	578	-.093*	.024	591	-.067	.102	603	-0.41	.348	518	-.102*	.013	593	-.128**	.002	581	.085*	.042	570	-.092*	.041	495
Community support and health services	-.118**	.004	585	-.113**	.006	597	-.096*	.018	611	-.092*	.035	525	-.132**	.001	601	-.140**	.001	590	.048	.25	576	-.127**	.004	502
Overall score ageing in place domains	-.153**	.000	550	-.141**	.001	562	-.122**	.003	573	-.070	.121	498	-.123**	.003	565	-.154**	0	554	.057	.18	547	-.137**	.003	476

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

n: number of respondents.

5 Discussion and conclusion

A familiar and age-friendly environment provides possibilities to older persons to actively age in place and participate in the neighborhood, which has a positive impact on the realization of the well-being of the older persons (Van Dijk et al., 2015; Fitzgerald & Caro, 2014; Nieboer & Cramm, 2017). Particularly Surinamese older migrants with different ethnic backgrounds, who cope with mobility issues, limited social involvement and isolation (El Fakiri & Bouwman-Notenboom, 2015), the importance of ageing well in their own neighborhood emerges to obtain the highest possible level of well-being. However, research on the age-friendliness of neighborhoods for different subgroups of Surinamese older migrants and the relationship between age-friendliness and older migrants' well-being (Lui et al., 2009) is lacking.

This research shows there are relationships between the eight ageing in place domains and well-being of Surinamese migrant older people with a Hindustani, Creoles, Javanese and Chinese background. The sub-questions about the level of well-being and how Surinamese older people experience the ageing in place domains and the main research question are answered in the section below. Subsequently the limitations of the study are discussed, followed by implications and recommendations for further research. To wrap it all up, the overall conclusion is provided.

5.1 Answers to the sub-questions

5.1.1 Well-being

First I tried to answer the sub-question about well-being: '**What is the level of well-being of Surinamese older people with a Hindustani, Creoles, Javanese and Chinese background?'**

Tthe overall well-being of Hindustani, Creoles, Javanese and Chinese older individuals, despite the physical constraints and less socially involvement due to Covid-19, is perceived just fine. Surinamese older people score high on well-being needs ***stimulation, affection*** and ***behavioral confirmation*** (see table 4). These results were confirmed by the qualitative findings and further support the idea of resources and activities being multifunctional, indicating that resources contribute to more than only one aspect of well-being (Nieboer & Lindenberg, 2002). It indicated that Surinamese seniors have the urge to go outside and keep themselves busy, e.g. walking or cycling. The feelings of boredom arise when older persons are not able to engage in such activities. According to the Social Production Function (SPF) theory, this touches upon the need for ***comfort*** and ***stimulation***, which refers to the absence of discomfort and the need for physical and mental activities (Steverink, 2009). Furthermore, having conversations with people in the neighborhood and knowing a lot of people,

leads to more ***affection*** and also gives people a certain ***status*** (Ormel et al., 1999). Affiliation in an association in the neighborhood is a way for Surinamese elderly persons to stay in contact with others and expand their social network to feel loved and accepted. In addition, a lot of value is devoted in expressing their own opinion and appreciation, in which these cases help to realize ***affection*** and ***behavioral confirmation*** (Ormel et al., 1999; Bruggen, 2001). The results of this study indicate that different well-being needs according to the theory of SPF (Cramm & Nieboer, 2015) (e.g. comfort, stimulation, affection, behavioral confirmation and status) are related to each other, and each activity or resource could help Surinamese older individuals to realize these different well-being needs at the same time.

5.1.2 Ageing in place domains

The second sub-question I tried to answer was: '**How do Surinamese older people with a Hindustani, Creoles, Javanese and Chinese background experience the ageing in place domains in their neighborhood?'**

To answer this question, the eight-WHO ageing in place domains were taken into consideration. In general, all ageing in place domains were discussed by the respondents, although some domains are indicated as more important. One interesting finding is that respondents did mention characteristics of *outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion*, and *community support and health services* as most important. Quantitative findings show Surinamese older people do miss out on characteristics of *housing* and *social participation* mostly in their neighborhood (see table 5).

Facilities nearby home, walking opportunities (e.g., parks) and public transportation stations/stops close to home are preferred, which is in line with previous research (Li et al., 2005; Sugiyama & Ward Thompson, 2008; Shrestha et al., 2017). Home care assistance (e.g. family), when Surinamese older people are not able to do chores in their homes by themselves, is provided to age in place and allow them to stay independent (Simpson, 2010). Results about the participation by Surinamese older persons in activities organized by the associations or neighborhoods create possibilities to build on social relationships, are coinciding with previous studies (Van Dijk et al., 2015; Levasseur et al, 2010; Thoits, 2011). In general, Surinamese older people are well-informed about events happening in their neighborhoods and feel well-informed by the municipality.

Some of the respondents do experience problems with accessibility of walkways. Pieces of glass or dog poop on the pavements are an indication of not sufficiently cleaned and unsafe walking routes for pedestrians (WHO, 2007). Also, overpriced public transportation creates a barrier for Surinamese older persons to travel as frequently as they would like (Shrestha et al., 2017).

5.1.3 Relationship ageing in place domains and well-being

The last sub-question that I tried to answer was: '**To what extent are ageing in place domains related to the well-being of Surinamese older people with a Hindustani, Creoles, Javanese and Chinese background?'**

The most obvious finding to emerge from the quantitative analysis is that most ageing in place domains were related to Surinamese elderly's well-being needs, such as ***comfort, stimulation, affection*** and ***behavioral confirmation***. Missing more characteristics on the ageing in place domains *outdoor spaces and buildings, transportation, respect and social inclusion, communication and information*, and *community support and health services* resulted in a lower level of ***comfort*** for these Surinamese seniors. The finding of the last domain, *community support and health services*, is consistent with the data obtained in the interviews, which are related to problems in the provision of community support (e.g. housing corporations) and a lower level of well-being.

Furthermore, the results indicated that it was more difficult to realize the need for ***stimulation*** of Surinamese older individuals when more ageing in place attributes of *outdoor spaces and buildings, transportation, respect and social inclusion*, and *community support and health services* were lacking. In addition, more missed characteristics of *outdoor spaces and buildings, transportation, respect and social inclusion, civic participation and employment, communication and information*, and *community support and health services*, resulted in a lower level of Surinamese elderly persons' ***affection*** and ***behavioral confirmation***. The well-being need ***status*** is relatively low expressed by the Surinamese older people, suggesting the need for status is not much related to the ageing in place domains. Furthermore, quantitative findings found no relationship between the ageing in place domains *housing* and *social participation* and well-being (needs) of Surinamese older persons.

5.2 Answering the research question

'What are relationships between ageing in place domains and the well-being of Surinamese migrant elderly with a Hindustani, Creoles, Javanese and Chinese background?'

This research question was the starting point of this research. The (qualitative and quantitative) results, using the ageing in place framework (see figure 2), revealed that several ageing in place domains have a relationship with certain aspects of Surinamese elderly's well-being. The domain *outdoor spaces and buildings* help to realize the need for ***comfort, stimulation, affection*** and ***behavioral confirmation***. Having facilities, for example supermarkets, grocery stores, shops, and parks close to home or in the neighborhood give older people a reason, when motivated, to go

outside and keep themselves active. In this way the elderly persons, have some variation in their life, instead of their monotonous daily routine. This is an example of the well-being aspect ***stimulation***. Furthermore, having facilities nearby home creates possibilities for the Surinamese older persons to get connected and stay connected with people in the neighborhood and influence social interaction, which conforms the association between the provision of walking opportunities and the contribution to well-being (Li et al., 2005; Sugiyama & Ward Thompson, 2008). These social interactions give older persons the feeling of being part of and accepted within the neighborhood. Inevitably promoting, and realizing ***affection*** and ***behavioral confirmation***. The resting places in the parks, for instance benches, which provide the older persons a safe and secure feeling, is an example of the well-being aspect ***comfort***.

The availability, accessibility, acceptability and affordability of public transport makes it possible for Surinamese elderly persons to stay socially in contact with others and provides opportunities to enjoy activities in and beyond the neighborhood. This finding further supports previous research stating that affordable and accessible public transport minimizes social isolation and is associated with a higher level of well-being (Gilhooly et al., 2003; Coughlin, 2001; Schaie & Pietrucha, 2000; WHO, 2002; 2007). Besides the fact that the ageing in place domain *transportation* gave rise to the need for ***affection*** for the Hindustani, Chinese, Javanese and Creoles older individuals, it also contributed to the need for ***stimulation*** for the Creoles seniors. The quantitative findings also found ***comfort*** and ***behavioral confirmation*** related to the ageing in place domain *transportation*.

Although, quantitative findings indicated the ageing in place domain *social participation* had no relation to any Surinamese older persons' well-being needs, qualitative results found a relationship between the domains *social participation* and *respect and social inclusion* and the realization of ***stimulation, behavioral confirmation*** and ***affection***. Participating in activities organized by the neighborhood gave Surinamese older persons possibilities to improve social connections and interactions, and in this way contribute to the need for ***affection***. This finding confirms the association stated by Zhang et al. (2015) and Bowling et al. (2002), that involvement in activities leading to interactions with others results in a higher level of well-being. High intensity of social activity and contact is generated from higher degrees of social cohesion and sense of belonging (Cramm, van Dijk & Nieboer, 2012). However, poor relationships and less involvement in the neighborhood creates feelings of non-acceptance. Therefore, it results in less contact with neighbors which has consequences for the level of ***affection*** of older Surinamese people.

A lack of accessible *community support (and health services*) is an example of ***comfort*** as a physical well-being need. Quantitative findings also related this domain to well-being needs ***stimulation***,

affection and ***behavioral confirmation***. As mentioned above, the 71-year-old Javanese woman experienced difficulties with sleeping at night due to the noises made by their neighbors. After complaining about this disturbance, the housing corporation did not take any further actions to resolve the issue. The provision of support is sometimes not anticipated by the older people, which results in feelings of anxiety and discomfort.

5.3 Limitations

Although, interesting findings were collected from the quantitative and qualitative data, there are some limitations of this research. First, due to the short timeframe, difficulties occurred in recruiting a sufficient number of respondents. Conducting more interviews may highlight the differences in well-being between Hindustani, Creoles, Javanese and Chinese older people. Besides, only 1 Chinese individual was recruited for an interview and the questionnaire sample consisted of a maximum of 10 Chinese participants. The rather small representation of Surinamese Chinese older migrants in this study (qualitative and quantitative data) makes it difficult to assess representativeness of this group, while research on this population is relevant, because research on this group is already lacking. Due to the fact that only Surinamese older people from South-Holland were approached, and the quantitative data were restricted to only Surinamese people from Rotterdam, there is no guarantee the results can be generalized and are valid for all Surinamese older people and neighborhoods in the Netherlands. Many Surinamese people live in other municipalities, thus studies from other Dutch municipalities could increase the understanding of how well-being and the ageing in place domains are expressed by Surinamese older people and to what extend their well-being has a relationship with the ageing in place domains in their neighborhoods. Finally, because of the cross-sectional data, no conclusions about the causality could be drawn. Surinamese older people in this study are not followed over time, but only evaluated through one interview or questionnaire. To increase validity, a longitudinal study design is needed to examine the relationship between well-being and the ageing in place domains of Surinamese older migrant with a Hindustani, Creoles, Javanese and Chinese background.

5.4 Implications and recommendations

The qualitative and quantitative data obtained in this study support the expectation that there is a relationship between well-being needs and the eight ageing in place domains in the neighborhoods of Surinamese older people with a Hindustani, Creoles, Javanese and Chinese background. Each subgroup of older Surinamese migrants has different traditions, habits, norms and values (Babel, 2018). It is likely that Surinamese elderly persons with different ethnicities (i.e. Hindustani, Creoles, Javanese and Chinese) experience different levels of well-being, e.g. socio-cultural differences and different ageing in place preferences (Liem & Veld, 2015; Choenni & Adhin, 2003; Babel, 2018; Conkova & Lindenberg, 2019). The findings in this study indicate that significant differences in the need for ***affection*** and ***behavioral confirmation*** between these ethnic groups are greater than differences within these groups. However, even after analyzing the qualitative and quantitative data gathered from a sample of 679 Surinamese older people and conducted interviews with 10 Surinamese persons, this study did not detect evidence for significant differences in the overall well-being between the different ethnic groups. Specifically, the participation of a small group of Chinese older persons in this study may be the reason of not finding significant differences in overall well-being between the groups. Although, no evidence supports this finding and therefore policymakers should not exclude the possibilities of differences in well-being needs between various ethnicity groups. Including Surinamese older people from different (e.g. Hindustani, Creoles, Javanese and Chinese) backgrounds into the policymaking process of designing social and physical attributes in the neighborhood to realize well-being, is a way to enhance the well-being of each ethnicity group separately.

The level of ***status*** achieved by Surinamese older persons is low compared to the other social needs (e.g. affection and behavioral confirmation), suggesting it is more difficult for elderly persons to achieve status in the neighborhood (Steverink, 2009). To improve well-being of Surinamese older Hindustani, Creoles, Javanese and Chinese individuals, policymakers and municipalities should invest in physical and social neighborhood attributes and provide options for elderly persons to empower the realization of the need for ***status*** within neighborhoods.

Although, the qualitative findings did not indicate differences between Surinamese Hindustani, Creoles, Javanese and Chinese older people, the quantitative results revealed differences between these subgroups regarding experiences with the ageing in place domains. The results suggest a difference between the experience of ageing in place domains and the various ethnicity groups. Most differences were found between Hindustani and Creoles older persons, suggesting Hindustani seniors missed out on more characteristics of the ageing in place domains in their neighborhoods (6 out of 8)

than the Creoles seniors. No difference was found between the ageing in place domain *housing* and Hindustani and Creoles older persons. This finding is contrary to previous studies which suggested that Surinamese older people with a Hindustani, Creoles and Javanese background have different housing preferences (Babel, 2018). Also differences between Javanese and Creoles older people were found on the ageing in place domains *outdoor spaces and buildings* and *housing*, indicating the Javanese people miss these ageing in place characteristics more in their neighborhoods than the Creoles older persons. The findings did not reveal any differences between Hindustani, Javanese and Chinese older persons. This may be possible due to the small representation of the Javanese and Chinese older persons in the sample questionnaire. Previous research indicated well-being of older people is affected positively by age-friendly neighborhoods (Nieboer & Cramm, 2017). It is important that municipalities and policymakers anticipate on these missing ageing in place characteristics in Surinamese Hindustani, Creoles, Javanese and Chinese elderly people's neighborhoods. It is also an indication what possibilities for investments in these neighborhood attributes are necessary and/or required to ensure that Surinamese older people can achieve the highest possible level of well-being.

5.5 Further research

Further research in this field would be of great help in obtaining a much better view on the relationships between ageing in place domains and well-being. A long-term follow-up study is recommended to further explore this relationship between older Surinamese Hindustani, Creoles, Javanese and Chinese migrants. This way the validity of this study may improve even further.

It is also useful to further investigate on the well-being (needs) of the different ethnic groups. The findings revealed no significant differences in overall well-being for Hindustani, Creoles, Javanese and Chinese older people, although the literature indicated otherwise. This also applies for the eight ageing in place domains. Specifically, additional research is required for Surinamese Chinese elderly people, in order to gain a thorough and more representative perspective of the Surinamese population as a whole.

The Surinamese elderly people from South-Holland was the focus of this study. However, many Surinamese older people also live in other regions and municipalities. Therefore, an understanding of differences among municipalities and other regions on the eight ageing in place domains and their effects on Surinamese older persons' well-being is beneficial. A comparison between municipalities is more feasible.

5.6 Conclusion

This study aimed to identify relationships between the eight ageing in place domains and the Surinamese older people's well-being, to increase understanding of differences in how Surinamese Hindustani, Creoles, Javanese and Chinese older individuals experience well-being and their neighborhoods' attributes of ageing in place and to what extend these attributes affect well-being. After analyzing the qualitative and quantitative results, it can be concluded that the eight ageing in place domains and Surinamese Hindustani, Creoles, Javanese and Chinese older persons' well-being are related. The provision of more characteristics to age in place in the neighborhood was associated with a higher level of well-being, indicating, and supporting previous research, that age-friendly environments in neighborhoods positively affect the well-being of Surinamese older individuals. The implications of this study are interesting for policymakers and municipalities to anticipate and invest more on missing ageing in place characteristics in these neighborhoods and to avoid barriers for Surinamese older people to realize their highest level of well-being. Further research on the relationship between the ageing in place domains and the well-being of each specific ethnic group (i.e. Hindustani, Creoles, Javanese and Chinese older migrants) from other regions and municipalities will be more useful to make a comparison and to obtain a more representative view.

6 Reference list

Agyemang, C., Addo, J., Bhopal, R., de Graft Aikins, A., & Stronks, K. (2009). Cardiovascular disease, diabetes and established risk factors among populations of sub-Saharan African descent in Europe: A literature review. *Globalization and Health,* 5(7). doi: 10.1186/1744–8603-5-7

Ahmad, K., & Hafeez, M. (2011). Factors affecting social participation of elderly people: a study in Lahore. *Journal of Animal and Plant Sciences,* 21, 283-289.

Ala-Mutka, K., Malanowski, N., Punie, Y. & Cabrera, M. (2008). Active ageing and the potential of ICT for learning. Seville, Spain: European Commission, Joint Research Centre, Institute of Prospective Technological Studies.

Alley, D., Liebig, P., Pynoos, J., Banerjee, T., Choi, I.H. (2007). Creating elder-friendly communities: preparations for an aging society. *J Gerontol Soc Work*. 49 (1-2), 1-18. doi: 10.1300/j083v49n01_01. PMID: 17804357.

Babel, N. (2018). Woonwensen van ouderen van Surinaamse afkomst. *Geron,* 20**,** 61–63. https://doi.org/10.1007/s40718-018-0043-z

Barrett, J. (2005). Support and information needs of older and disabled older people in the UK. *Appl Ergon*, 36 (2), 177-83. doi: 10.1016/j.apergo.2004.10.006.

Baarda, B., Bakker, E., Boullart, A., Fischer, T., Julsing, M., Peters, V., & van der Velden, T. (2018). *Basisboek Kwalitatief Onderzoek: Handleiding voor het opzetten en uitvoeren van kwalitatief onderzoek* (4de editie). Groningen, Nederland: Noordhoff Uitgevers.

Bindraban, N.R., van Valkengoed, I.G.M., Mairuhu, G., Holleman, F., Hoekstra, J.B.L., Michels, B.P.J., Koopmans, R.P. & Stronks, K. (2009). Prevalence of diabetes mellitus and the performance of a risk score among Hindustani Suriname, African Surinamse and ethnic Dutch: A cross-sectional population-based study. *BMC Public Health*, 8. doi: 1186/1471–2458-8-271

Borges, I. (2012). *The added value of accessible public transport for all in the context of demographic ageing*. AGE Presentation at XXIIIWorld Road Congress, Paris, France. http://www.ageplatform.eu/en/age-policy-work/accessibility/age-position-statements/496-age-the-added-value-ofaccessible-public-transport-for-all-in-the-context-of-demographic-ageing.

Bowling, A., Banister, D., Sutton, S., Evans, O. & Windsor, J. (2002). A multi-dimensional model of quality of life in older age. Age and Mental Health, 6 (4), 355-371.

Bruggen, A. C. V. (2001). *Individual production of social well-being: an exploratory study*. [S.n.].

Casado, B.L., van Vulpen, K.S. & Davis, S.L. (2011). Unmet needs for home and community-based service among frail older Americans and their caregivers. *Journal of Aging and Health*, 23 (3), 529-33.

CBS (2020). *55-plussers liefst zo lang mogelijk in eigen woning*. https://www.cbs.nl/nl-nl/nieuws/2020/14/55-plussers-liefst-zo-lang-mogelijk-in-eigen-woning

CBS. (2020). *Jaarrapport integratie 2020*. https://longreads.cbs.nl/integratie-2020/inleiding/

Choenni, C.E.S. & Adhin, K.Sh. (red.) (2003) Hindostanen, van Brits-Indische emigranten via Suriname tot burgers van Nederland. Sampreshan, Den Haag.

Choenni, C.E.S., Kalidien, S.N. & Adhin, K.Sh. (2008) Hindostaanse ouderen in Nederland. Sampreshan, Den Haag.

Conkova, N. & Lindenberg, J. (2018). Gezondheid en welbevinden van oudere migranten in Nederland: Een narratieve literatuurstudie. *Tijdschrift voor Gerontologie en Geriatrie*, 49, 223–231. doi:10.1007/s12439-018-0268-2

Conkova, N. & Lindenberg, J. (2019). The Experience of Aging and Perceptions of "Aging Well" Among Older Migrants in the Netherlands. *The Gerontologist*, 60(2), 270–278, https://doi.org/10.1093/geront/gnz125

Conkova, N. (2019). *Ouderdom komt voor migranten met kansen en beperkingen. Sociale Vraagstukken*. https://www.socialevraagstukken.nl/ouderdom-komt-voor-migranten-met-kansen-en-beperkingen/

Costa-Font, J., Elvira, D. & Mascarilla-Miró, O. (2009). 'Ageing in place'? Exploring elderly people's housing preferences in Spain. *Urban Studies*, 46, 295–316.

Coughlin, J. (2001). *Transportation and Older Persons: Perceptions and Preferences*. AARP, Washington DC.

Creswell, J. W. (2014). *Research Design*. Thousand Oaks, Canada: SAGE Publications.

Cramm J.M. & Nieboer A.P. (2013). Relationships between frailty, neighborhood security, social cohesion and sense of belonging among community-dwelling older people. *Geriatr Gerontol Int*., 13 (3), 759-63. doi: 10.1111/j.1447-0594.2012.00967

Cramm, J. M., Nieboer, A. P. (2014). Neighborhood attributes security and solidarity promote the well-being of community-dwelling older people in the Netherlands. *Geriatr Gerontol Int*., 14(3), 681–688.

Slotman, A., Cramm, J.M., & Nieboer, A.P. (2015). The ageing perceptions questionnaire (APQ): An examination of its psychometric properties and development of the shortened APQ among Dutch community-dwelling elders. *Health and Quality of Life Outcomes*, 13, 54.

Cramm, J. M., van Dijk, H. M., & Nieboer, A.P. (2013). The importance of neighborhood social cohesion and social capital for the well being of older adults in the community. *The Gerontologist*, 53 (Suppl. 1), 142–152.

Van Dijk, H.M., Cramm, J.M., Van Exel J.O.B. & Nieboer, A.P. (2015) The ideal neighbourhood for ageing in place as perceived by frail and non-frail community-dwelling older people. *Ageing & Society*, 35 (8), 1771-95.

Cramm, J.M., van Dijk, H.M. & Nieboer, A.P. (2012). The importance of neighborhood social cohesion and social capital for the well being of older adults in the community. *Gerontologist*, 53 (1), 142-52. doi: 10.1093/geront/gns052.

Cramm, J.M., van Dijk, H.M. & Nieboer, A.P. (2018). The creation of age-friendly environments is especially important to frail older people. *Ageing and Society*, 38 (4), 700-720.

Creswell, J. W. (2014). *Research Design*. Thousand Oaks, Canada: SAGE Publications.

Cvitkovich, Y., & Wister, A. (2001). The Importance of Transportation and Prioritization of Environmental Needs to Sustain Well-Being among Older Adults. *Environment and Behavior*, 33(6), 809–829. https://doi.org/10.1177/00139160121973250

De Donder, L., Buffel, T., Dury, S., De Witte, N. & Verté, D. (2013). Perceptual quality of neighbourhood design and feelings of unsafety. *Ageing & Society*, 33 (6), 914-937.

Dickinson, A. & Hill, R.L. (2007). Keeping In Touch: Talking to Older People about Computers and Communication. *Educational Gerontology*, 33 (8), 613-630. DOI:10.1080/03601270701363877

El Fakiri, F. & Bouwman-Notenboom, J. (2015). *Gezondheid van oudere migranten in de vier grote steden*. Amsterdam: GGD Amsterdam.

Everingham, J.-A., Petriwskyj, A., Warburton, J., Cuthill, M. & Bartlett, H. (2009). Information provision for an age-friendly community. *Ageing International*, 34 (1-2), 79-98.

Gallagher, L.P. & Truglio-Londrigan M. (2004). Community support: older adults' perceptions. *Clin Nurs Res*, 13 (1), 3-23. doi: 10.1177/1054773803259466.

Gilhooly, M., Hamilton, K., O'Neil, M., Gow, J., Webster, N. & Pike, F. (2003). *Transport and ageing: extending quality of life via public and private transport*. Report 16, Growing Older Programme, Economic and Social Research Council, University of Sheffield, Sheffield, UK.

Gilmour, H. (2012). Social participation and the health and well-being of Canadian seniors. S*tatistics Canada*, 23, 3–12.

González-Herero, V. & Extremera, N. (2010). Daily life activities as mediators of the relationship between personality variables and subjective well-being among older adults. *Personality and Individual Differences*, 49, 124–129. doi:10.1016/j.paid.2010.03.019

Hassankhan, M.S., Roopnarine, L., & Mahase, R. (2016). Social and Cultural Dimensions of Indian Indentured Labour and its Diaspora: Past and Present.

Huizer, A., Michon, L., Wenneker, C & Slot, J. (2013). *Oudere minima in Amsterdam en het gebruik van de AIO*. Amsterdam: Gemeente Amsterdam, Bureau Onderzoek en Statistiek.

Kelly G. Fitzgerald MPA PhD & Francis G. Caro PhD (2014) An Overview of Age-Friendly Cities and Communities Around the World. *Journal of Aging & Social Policy*, 26: 1-2, 1-18, DOI: 10.1080/08959420.2014.860786

Klimova, B., Simonova, I., Poulova, P., Truhlarova, Z. & Kuca, K. (2016). Older people and their attitude to the use of information and communication technologies – A review study with special focus on the Czech Republic (older people and their attitude to ICT). *Educational Gerontology*, 42 (5), 361-369, DOI: 10.1080/03601277.2015.1122447.

Klokgieters, S., van Tilburg, T., Deeg, D. & Huisman, M. (2018). Gezondheidsverschillen onder oudere migranten in Nederland. *Demos, bulletin over bevolking en samenleving*, 34(9), 4-7.

Kubzansky, L. D., Berkman, L. F., & Seeman, T. E. (2000). Social conditions and distress in elderly persons: findings from the MacArthur Studies of successful aging. *Journals of Gerontology*. *Series B, Psychological Sciences and Social Sciences*, 55B (4), 238–246.

Levasseur, M., Richard, L., Gauvin, L., & Raymond, E. (2010). Inventory and analysis of definitions of social participation found in the aging literature: Proposed taxonomy of social activities. *Social Science & Medicine*, 71, 2141–2149. doi:10.1016/j.socscimed.2010.09.041

Li, F., Fisher, K., Brownson, R. & Bosworth, M. (2005). Multilevel modelling of built environment characteristics related to neighbourhood walking activity in older adults. *Journal of Epidemiology Community Health*, 59 (7), 558-564.

Liem, P. & Veld, T. (2005). *De integratie van Surinamers: voortgang en stagnatie*. Instituut voor Sociologisch-Economisch Onderzoek, Rotterdam.

Lindenberg S. (2013). *Social rationality, self-regulation and well-being: The regulatory significance of needs, goals, and the self.* In: Wittek, R., Snijders, T.A.B., Nee, V., editors. Handbook of rational choice social research. Stanford: Stanford University Press; pp. 72–112.

Lindenberg, S. (1996). Continuities in the theory of social production functions. In Ganzeboom, H. & Lindenberg, S. (Eds.), *Verklarende Sociologie: Opstellen voor Reinhard Wippler*, Amsterdam: Thesis, pp. 169–184.

Lüders, M. & Gjevjon, E.R. (2017). Being old in an always-on culture: Older people's perceptions and experiences of online communication. *The Information Society*, 33 (2), 64-75, DOI: 10.1080/01972243.2016.1271070.

Lui C.W., Everingham J.A., Warburton J., Cuthill M. & Bartlett H. (2009). What makes a community age-friendly: A review of international literature. *Australas J Ageing*, 28(3), 116-21. doi: 10.1111/j.1741-6612.2009.00355.x. PMID: 19845650

Machielse, A. (2016). *Afgezonderd of ingesloten? Over sociale kwetsbaarheid van ouderen*. Inaugural speech. Rotterdam, The Netherlands: Universiteit voor Humanistiek.

Maisel, J. L., Smith, E., Steinfeld, E., (2008). Increasing Home Access: Designing for Visitability. *Public Policy Institute.*

Michael, Y. L., Green, M. K. & Farquhar, S. (2006). Neighbourhood design and active aging. *Health & Place*, 12 (4), 734-740.

Mjelde-Mossey, L. A., Wu, B., & Chi, I. (2007). Civic engagement of the oldest-old in Shanghai. *Asian Journal of Gerontology and Geriatrics*, 2(2), 61–68.

Morrow-Howell, N., Hong, S., & Tang, F. (2009). Who benefits from volunteering? Variation in perceived benefits. *Gerontologist*, 49(1), 91–102.

Mortelmans, D. (2013). *Handboek kwalitatieve onderzoeksmethoden* (4de editie). Leuven, België: Acco.

Mui, A. C., & Shibusawa, T. (2008). *Asian American elders in the 21st century: Key indicators of wellbeing*. New York: Columbia University Press.

Nieboer A.P. & Cramm J.M. (2018). How do older people achieve well-being? Validation of the Social Production Function Instrument for the level of well-being-short (SPF-ILs). *Soc Sci Med*, 211, 304-313. doi: 10.1016/j.socscimed.2018.06.036.

Nieboer, A. & Lindenberg, S. (2002). *Substitution, buffers and subjective well-being: a hierarchical approach.* E. Gullone, R.A. Cummins (Eds.), The Universality of Subjective Wellbeing Indicators. Social Indicators Research Series, vol. 16, Springer, Dordrecht (2002)

Nieboer, A. P. (1997). *Life-events and well-being. A prospective study on changes in well-being of elderly people due to a serious illness event or death of the spouse*. Thesis.

Nieboer, A.P, & Cramm, J.M. (2017). Age-Friendly Communities Matter for Older People's Well-Being. *Journal of Happiness Studies*, 1–16. doi:10.1007/s10902-017-9923-5

Nieboer, A.P. & Cramm, J.M. (2018). Age-Friendly Communities Matter for Older People's Well-Being. *Journal of Happiness Studies,* 19(8), 2405-2420. http://dx.doi.org.eur.idm.oclc.org/10.1007/s10902-017-9923-5

Nieboer, A.P., Lindenberg, S., Boomsma, A., van Bruggen A.C. (2005). Dimensions of well-being and their measurement: the SPF-IL Scale. *Soc. Indicat. Res*., 73 (3), 313-353.

Ormel, J., Lindenberg, S., Steverink, N. et al. (1999). Subjective well-being and social production functions. *Social Indicators Research*, 46, 61–90.

Oudhof, K., Harmsen, C., Loozen, S. & Choenn, C. (2011). Omvang en spreiding van Surinaamse bevolkingsgroepen in Nederland. Bevolkingstrends, 2e kwartaal 2011, CBS. file:///C:/Users/Shreya/AppData/Local/Temp/2011-k2-b15-p97-art.pdf

Pani-Harreman, K., Bours, G., Zander, I., Kempen, G., & Van Duren, J. (2020). Definitions, key themes and aspects of 'ageing in place': A scoping review. *Ageing and Society*, 1-34. doi:10.1017/S0144686X20000094

Petersson, I., Lilja, M., Hammel, J. & Kottorp, A. (2007). Impact of home modification services on ability in daily life for people ageing with disabilities. *Journal of Rehabilitation Medicine*, 40 (4), 253-260.

Philipsen, H., & Vernooy-Dassen, M. (2004). Kwalitatief onderzoek: nuttig, onmisbaar en uitdagend. *Huisarts en Wetenschap*, 47(10), 288–292. https://doi.org/10.1007/bf03083760

Pot, A.M.Y., Kuin, Y. & Vink, M. (2007). *Handboek Ouderenpsychologie*. Utrecht: de Tijdstroom.

Pynoos, J., Caraviello, R., & Cicero, C. (2009). LIFELONG HOUSING: The Anchor in Aging-Friendly Communities.

Roberts, E., Bishop, A., Ruppert-Stroescu, M., Clare, G., Hermann, J., Singh, C., Balasubramanan, M., Struckmeyer, K.M., Mihyun, K. & Slevitch, L. (2017). Active Aging for L.I.F.E.: an intergenerational public health initiative addressing perceptions and behaviors around longevity, independence, fitness, and engagement. *Topics in Geriatric Rehabilitation*, 33, 211.

Rochester, C. & Hitchison, R. (2002). *A Review of the Home Office Older Volunteers Initiative. Home Office*. London.

Ronzi, S., Pope, D., Orton, L. & Bruce, N. (2016). Using photovoice methods to explore older people's perceptions of respect and social inclusion in cities: Opportunities, challenges and solutions. *SSM Popul Health*, 13 (2), 732-745. doi: 10.1016/j.ssmph.2016.09.004.

Russell, C., Campbell, A. & Hughes, I. (2008). Ageing, social capital and the internet: findings from an exploratory study of Australian 'silver surfers'. *AJA*, 27 (2), 78-82.

Schaie, K.W.,&Pietrucha, M. (Eds.). (2000). Mobility and transportation in the elderly. Edited proceedings of a conference held at Pennsylvania State University, October 13-14, 1997. *Societal Impact on Aging Series [11th in series], Springer*.

Scheepers, P., Tobi, H., & Boeije, H. (2016). *Onderzoeksmethoden (9e editie)*. Amsterdam, Nederland: Boom.

Schellingerhout, R. (2004). *Gezondheid en welzijn van allochtone ouderen*. Den Haag: Sociaal en Cultureel Planbureau.

Selwyn, N. (2004). The information aged: a qualitative study of older adults' use of information and communications technology. *Journal of Aging Studies*, 18 (4), 369-84.

Serrat, R., Villar, F., & Celdrán, M. (2015). Factors associated with Spanish older people's membership in political organizations: The role of active aging activities. *European Journal of Ageing*, 12(3), 239–247. https://doi.org/10.1007/s10433-015-0341-4.

Sharifian N. & Grühn D. (2019). The Differential Impact of Social Participation and Social Support on Psychological Well-Being: Evidence From the Wisconsin Longitudinal Study. *Int J Aging Hum Dev*, 88 (2), 107-126. doi: 10.1177/0091415018757213.

Shrestha, B.P., Millonig, A., Hounsell, N.B. et al. (2017). Review of Public Transport Needs of Older People in European Context. *Population Ageing,* 10, 343–361. https://doi.org/10.1007/s12062-016-9168-9

Simpson, R.L (2010). Technologies enable seniors to age in place. *Nursing Administration Quarterly*, 38, 178-182.

Smith, N., Beckhelling, J., Ivaldi, A., Kellard, K., Sandu, A. & Tarrant, C. (2006). Evidence Base Review on Mobility: Choices and Barriers for Different Social Groups. Final Report, Centre for Research in Social Policy, Loughborough University.

Steverink, N. & Lindenberg, S. (2006). Which Social Needs Are Important for Subjective Well-being? What Happens to Them with Aging? *Psychology and Aging*, 21, 281–90.

Steverink, N. (2009). Gelukkig en gezond ouder worden: welbevinden, hulpbronnen en zelfmanagementvaardigheden. *Tijdschrift voor gerontologie en geriatrie*, 40, 244-252. 10.1007/BF03088518

Sugiyama, T. & Ward Thompson, C. (2008). Associations between characteristics of neighbourhood open space and older people's walking. *Urban Forestry and Urban Greening*, 7 (1), 41-51.

Tanner, B., Tilse, C. & de Jonge, D. (2008). Restoring and sustaining home: the impact of home modifications on the meaning of home for older people. *Journal of Housing for the Elderly*, 22 (3), 195-215.

The MetLife Mature Market Institute. (2013). *Livable Community Indicators for Sustainable Aging in Place*. https://www.giaging.org/documents/mmi-livable-communities-study_2013.pdf

Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior*, 52, 145–161. doi:10.1177/0022146510395592

Torres, S. & Serrat, R. (2019). Older migrants' civic participation: A topic in need of attention. *J Aging Stud*, 50, 100790. doi: 10.1016/j.jaging.2019.100790.

van Dijk, H.M, Cramm, J.M, van Exel, N.J.A, & Nieboer, A.P. (2015). The ideal neighbourhood for ageing in place as perceived by frail and non-frail community-dwelling older people. *Ageing and Society*, *35*(8), 1771–1795. doi:10.1017/S0144686X14000622

van Heelsum, A., & Voorthuijsen, E. (2002). *Surinaamse organisaties in Nederland. Een netwerkanalyse.* Aksant.

Van Niekerk, M. (2000). *'De krekel en de mier'. Fabels en feiten over maatschappelijke stijging van Creoolse en Hindostaanse Surinamers in Nederland*. Amsterdam: Het Spinhuis.

Vezina, A., & Pelletier, D. (1997). Les personnes agées à mobilité réduite vivant à domicile: Modalités de réponse aux besoins et niveau de satisfaction perçu [Transportation problems of non-institutionalized elders with ambulatory difficulties: Meeting needs, and level of subjective well-being]. *Canadian Journal on Aging*, 16(2), 297-319.

Völker, B., Flap, H., Lindenberg, S. (2007). When Are Neighbourhoods Communities? Community in Dutch Neighbourhoods, *European Sociological Review*, 23, (1), 99–114. https://doi.org/10.1093/esr/jcl022

Warburton, J., & Stirling, C. (2007). Factors affecting volunteering among older rural and city dwelling adults in Australia. *Educational Gerontology*, 33(1), 37–41. https://doi.org/10.1080/03601270600846824.

Wengen, van G.D. (2016). *De Javanen in de Surinaamse samenleving. Berusting en worteling*. Brave New Books.

World Health Organization [WHO]. (2007). Global age-friendly cities: A guide: World Health Organization.

Witter, Y. & Fokkema, T. (2018). Huisvesting en zorg voor oudere migranten in Nederland. *Demos, bulletin over bevolking en samenleving*, 34(6), 1-4.

Zhang, W., Feng, Q., Liu, L., & Zhen, Z. (2015). Social engagement and health: Findings from 2013 survey of the Shanghai elderly life and opinion. *The International Journal of Aging and Human Development*, 80, 332–356. doi:10.1177/0091415015603173

Zohrabi, M. (2013). Mixed Method Research: Instruments, Validity, Reliability and Reporting Findings. *Theory and Practice in Language Studies* (3): 254-262.

Zubair, M. & Norris, M. (2015). Perspectives on ageing, later life and ethnicity: Ageing research in ethnic minority contexts. *Ageing and Society*, 35, 897–916. doi:10.1017/S0144686X14001536

7 Appendices

Appendix A. Overview of respondents from the conducted interviews

Dates	Respondent	Age
20-04-2021	Javanese man	72 years old
20-04-2021	Javanese woman	71 years old
26-04-2021	Creoles woman	83 years old
27-04-2021	Hindustani man	75 years old
30-04-2021	Creoles woman	70 years old
30-04-2021	Creoles woman	77 years old
30-04-2021	Chinese woman	70 years old
11-05-2021	Hindustani woman	72 years old
12-05-2021	Hindustani man	79 years old
12-05-2021	Javanese woman	71 years old

Appendix B. Topic list in Dutch and translated to English

Topics	
Achtergrond informatie respondent	Naam, leeftijd, woonplaats, etniciteit, aantal jaren in Nederland
Fysieke welzijn	***Comfort*** • Heeft u gezondheidsproblemen? Zo ja, wat precies? • In hoeverre voelt u pijn, zich ziek, fit, relaxed, gestrest? • Bent u in staat zelf voor eten en drinken te zorgen? Op wat voor manier is dit? • Wat is uw bron van inkomen? Is dit voldoende om rond te komen? ***Stimulatie*** • Wat zijn u hobby's (wat doet u in u vrije tijd) en bent u in staat deze nog steeds te beoefenen/uitvoeren? • Beweegt u of gaat u vaak naar buiten? Zo ja, hoe vaak? • Speelt u spelletjes zoals bingo, woordpuzzels, scrabble etc of leest u vaak? • Zou u aan meer fysieke of mentale activiteiten willen deelnemen?
Sociaal welzijn	***Status*** • Respect: Voelt u zich serieus genomen door anderen? Kijken mensen naar u op? • In hoeverre bent u onafhankelijk van anderen? • Heeft u unieke talenten of vaardigheden? Zo ja, welke? Zou u over meer vaardigheden/talenten willen beschikken • Heeft u inspraak of zeggenschap in een groep/gemeenschap? Luisteren en waarderen anderen naar u mening? • Hoe kijken andere mensen naar u? Heeft u een bepaalde reputatie dat hoog gehouden moet worden? waarderen anderen mensen u? ***Affectie*** • Met welke mensen heeft u regelmatig contact? Is dit voldoende of verlangt u naar meer contact? • Wat beteken deze mensen voor u? • Heeft u gebrek aan sociaal contact? • Voelt u zich geliefd? Geaccepteerd? Begrepen door anderen? • Bent u bereid anderen te helpen en zijn zij bereid u te helpen? ***Gedragsbevestiging*** • Gaat u om met mensen van dezelfde etniciteit? Zelfde normen en waarden?

	• Wat vindt u belangrijk in uw leven? Is dit iets goeds wat in overeenstemming is met de normen en waarden van anderen?
Buurtkenmerken	***Buitenruimtes en gebouwen*** Parken, straat, winkels in de buurt, openbare gebouwen (gemeente huis, tempel/kerk, winkelcentrum) • Waar in uw buurt komt u vaak? (hoe, wat en met wie) • Kunt u alles wat noodzakelijk is voor u vinden in uw buurt (winkels)? • Wat in uw buurt zorgt ervoor dat uw erop uit gaat en wanneer is dit? • Wat vindt u van de looppaden in uw buurt (schoon en veilig)? • Zijn er genoeg parken, looproutes en/of recreatie gebieden voor ontspanning? • Wat in uw buurt zorgt ervoor dat u in beweging bent? • Hoe is de toegankelijkheid van openbare gebouwen (liften, openbare toiletten)? ***Vervoer*** OV (tram, bus, metro, trein), vervoer op maat, auto, lopen, fietsen • Van welk vervoersmiddel maakt u gebruik als u in uw buurt erop uit gaat? • Wanneer maakt u gebruik van het openbaar vervoer? • Is het openbaar vervoer betaalbaar voor u? • Wat zorgt ervoor dat u geen gebruik maakt van het openbaar vervoer? • Hoe zorgt het ov ervoor dat u andere mensen ontmoet? • Zijn de ov-haltes dichtbij voor u? • Wat vindt u van de toegankelijkheid van de ov-middelen (laag, brede zitplekken, gereserveerde zitplekken)? • Voelt u zich veilig en comfortabel in het ov? • Wanneer maakt u gebruik van uw auto? • Wat maakt het makkelijk/moeilijk om deel te nemen aan het verkeer? • Wanneer maakt u gebruik van vervoer op maat? Is dit toegankelijk voor u? ***Huisvesting*** • Wat doet u allemaal zelf in huis (thuishulp)? • Wat maakt het lastig dat u bepaalde dingen niet uw huis kunt doen? • Zijn er mogelijkheden om aanpassingen in uw huis te verrichten? • Zijn er bepaalde aanpassingen nodig geweest? • Is uw woning betaalbaar voor u (opties om te verhuizen indien nodig)? ***Sociale participatie***

	Meedoen aan sociale activiteiten, onderhouden van sociale contacten (familie, vrienden) • Wat voor activiteiten worden er georganiseerd in uw buurt? • Neemt u wel eens deel aan een activiteit in uw buurt? • Zo ja, wat voor activiteiten worden aangeboden? Doet u dit met anderen? Waar worden deze aangeboden? Wat zorgt ervoor dat u deelneemt? • Zo nee, wat is de reden van niet deelnemen? Zijn er belemmeringen waardoor u niet kunt deelnemen? • Hoe wordt u op de hoogte gesteld over de activiteiten in uw buurt? • Hoe ontmoet u mensen in uw buurt? ***Respect en sociale inclusie*** • Heeft u het gevoel dat u kunt deelnemen aan de samenleving? • Hoe gaan andere mensen in uw buurt met u om? • Voelt u zich gerespecteerd door anderen in uw buurt? • Hoe zorgt dit ervoor dat u dingen doet met andere mensen? • Heeft u zich weleens buitengesloten gevoeld? **Burgerparticipatie en werk** • Zijn er genoeg mogelijkheden voor vrijwilligerswerk/werk in uw buurt? Zijn deze ook toegankelijk voor ouderen? • Doet u aan vrijwilligerswerk? Waarom wel/niet? • Hoe wordt u betrokken bij besluiten die genomen worden in de buurt? • Hoe wordt u betrokken om mee te praten over uw buurt? • Hoe vindt u het dat u wel/niet betrokken word? **Communicatie en informatie** Folder, kranten, radio, tv, telefoon, e-mail, gesprekken, website • Hoe communiceert u met familie en vrienden? • Hoe wordt u op de hoogte gesteld over gebeurtenissen in de buurt? • Hoe is de informatievoorziening in uw buurt? • Wat vindt u daarvan? • Is deze geschikt voor ouderen? Wat maakt het geschikt voor ouderen? • Hoe blijft u op de hoogte over de gebeurtenissen in uw buurt? • Ervaart u belemmeringen in de toegang tot informatie? • Hoe heeft dit een invloed op het samen komen met anderen? **Maatschappelijke ondersteuning en gezondheidsdiensten** Zorg van iemand ontvangen, mantelzorg, thuiszorg, begeleiding, hulp • Krijgt u momenteel zorg? ▪ Wat voor zorg krijgt u? ▪ Bent u tevreden hiermee? • Hoe is het aanbod van zorg in uw buurt?

	▪ Kunt u gebruik maken van alle zorgdiensten? • Hoe is de zorg in uw wijk geregeld? ▪ Is het dichtbij? ▪ Is het makkelijk om hiernaartoe te gaan? ▪ Is de zorg op elkaar afgestemd? • Krijgt u hulp van anderen, bijvoorbeeld bij het boodschappen doen of in het huishouden (waarbij en van wie)?
Ervaringen met buurtkenmerken en het bevorderen van welzijn	Hoe beïnvloeden buurtkenmerken het welzijn van ouderen? • Is het voor anderen (familie en vrienden) toegankelijk om uw buurt te betreden en in contact met u te blijven? • Zijn winkels en andere voorzieningen dichtbij om u zelf van eten en drinken te voorzien? • Zijn er voldoende rustplekken voor u in uw buurt? • Wat maakt het lastig voor u om in beweging te blijven? • Voelt u zich comfortabel en veilig als u in uw buurt bent/loopt? • Vindt u dat toegankelijke vervoersmiddelen ervoor zorgen dat u meer sociaal contact heeft? • Zorgen de mogelijkheden voor aanpassingen in uw huis voor een fijner/veiliger gevoel? • Hoe ervaart u de deelname aan activiteiten in uw buurt (minder eenzaam, meer interactie met anderen)? • Herkennen anderen mensen u in de buurt? Wat vindt u hiervan? • Zou u meer/minder betrokken willen worden in uw buurt en waarom? • Is de huidige informatievoorziening toegankelijk? • Welke communicatiemiddelen gebruikt u om in contact te blijven met anderen? Zou u meer contact willen? Waardoor lukt dit wel/niet? • Hoe ervaart u de maatschappelijke ondersteuning die u krijgt, is dit voldoende? • Zijn alle gezondheidsdiensten waar u behoeften aan heeft beschikbaar/toegankelijk voor u? Aan welke gezondheidsdiensten heeft u nog meer behoefte?
Verbetering van buurten	Verbetering van buurten op basis van behoeften van ouderen Welke buurtkenmerken missen er volgens u? Aan wat heeft u behoefte, wat uw buurt u niet kan bieden?

Topic list English

Topics	
Information of the respondent	Personal information: name, age, ethnic background, residence, number of years in the Netherlands
Physical well-being	**Comfort** • Do you have health/physical problems? • To what extend do you experience feelings of pain (ill, fit, relaxed, stress)? • Are you capable of providing food and drinks by yourself? In what way? • What is your source of income? Is this sufficient, why (not)? **Stimulation** • Wat are your hobbies? Are you still able do this? • Participating in physical and mental activities (what, how often, different things, challenging and interesting) • How often do you go outside (to exercise)? • Do you play games such as bingo, word puzzles, scrabble or do you read a lot? • Do you want to participate in more (mental/physical) activities?
Social well-being	**Status** • Respect: do you feel taken seriously by others? Do people look up to you? • To what extend do you feel independent to others? • Do you have unique of special talents/skills? Which ones? • Do you have a say in a group/community? • Do others listen and value your opinion? Do other people appreciate you? • How do other people think of you? • Do you have a certain reputation that needs to be upheld? **Affection** • With whom do you have regularly contact? Is this enough or do you prefer more contact? What do these people mean to you? • Do you have a lack of social contact? • Do you feel being liked, loved, trusted, accepted and understood by others? • Are you willing to help others and vice versa? **Behavioral confirmation** • Do you feel part of a group (with same values and norms, common goal, ethnicity/religion)? • What do you find important in your life? Is this something that is in line with the norms and values of others?
Ageing in place domains	**Outdoor spaces and buildings** *Parks, streets, shops in the neighborhood, public buildings (city Hall, temple/church, shopping center)* • What places in your neighborhood do you often visit? (how, what and with whom)

	• Can you find everything you need in your neighborhood (shops)? • What in your neighborhood ensures you going outside or it your reason to go outside and when does this happen? • What do you think of the pavements in your neighborhood (clean and safe)? • Are there enough parks, walking routes and/or recreational areas for relaxation? • What in your neighborhood makes sure you exercise? • How is the accessibility of public buildings (elevators, public toilets)? **Transportation** *Public transportation (tram, bus, railway, train), car, walking, cycling, Vervoer op Maat* • What kind of transport do you use when going out in your area? • When do you use public transport? • Is public transport affordable according to you? • What prevents you from using public transport? • How does public transport help you meet other persons? • Are the public transport stops close to your home? • What do you think about the accessibility of public transport (low, wide seats, reserved seats)? • Do you feel safe and comfortable in public transport? • Do you own a car? When do you use your car? • What makes it easy/difficult to participate in traffic? • When do you use Vervoer op Maat? Is this accessible to you? **Housing** • What chores do you do yourself at home (help)? • What makes it difficult for you to do certain things in your home? • Are there possibilities for adjustments in your house? • Were certain adjustments necessary? • Is your home affordable for you (options to move if needed)? **Social participation** *Participating in social activities, maintaining social contact (family/friends)* • What kind of activities are organized in your neighborhood? • Do you ever participate in an activity in your neighborhood? • If yes, what kind of activities are organized? Do you participate with others? Where are these activities organized? What is your reason to participate? • If not, what is the reason for not participating? Are there any obstacles preventing you from participating? • How are you informed about the activities in your neighborhood? • How do you meet people in your neighborhood? **Respect and social inclusion** • Do you feel you can participate in society? • How do other people in your area interact with/treat you? • Do you feel respected by others around you?

	• How does the interaction with others get you to do things with other people? • Have you ever felt left out/excluded from the neighborhood/society? **Civic participation and employment** • Are there enough volunteer/work opportunities in your neighborhood? Are these also accessible for older persons? • Do you volunteer? Why yes/no? • How are you involved in decisions made in the neighborhood? • How do you get involved in discussions about your neighborhood? • How do you feel about being involved/not being involved? **Communication and information** *Brochures, newspapers, radio, tv, phone, e-mail, conversations, website* • How do you communicate with family and friends? • How are you informed about events in the neighborhood? • How is the information provision in your neighborhood? • What is your opinion about this? • Is this suitable for older persons? What makes it suitable for older persons? • Do you experience barriers in receiving information? • How does this affect the opportunities of meeting other people? **Community support and health services** *Provision of care, informal care, home care, assistance* • Are you currently receiving care? ▪ What kind of care do you receive? ▪ Are you satisfied with this? • What care providers are available your neighborhood? ▪ Can you use all healthcare services? • How is care arranged in your neighborhood? ▪ Is it close to home? ▪ Is it easy to reach? ▪ Is care coordinated? • Do you get help from others, for example with groceries or with chores in the household (from whom)?
Experiences with domains and well-being realization	Does each ageing in place domain affect well-being (comfort, stimulation, status, affection and behavioral confirmation) in a certain way? E.g.: • Is it accessible for others (family and friends) to enter your neighborhood and stay in touch with you (paid parking)? • Are shops and other facilities close to home to provide yourself with food and drink? • Are there sufficient rest areas for you in your neighborhood • What makes it difficult for you to stay active or to go outside? • Do you feel comfortable and safe when you are walking/cycling in the neighborhood? • Do you think that accessible public transportation ensures you have more social contact?

	• Do possibilities for adjustments in your home provide a nicer/safer feeling? • How do you experience participating in activities in your neighborhood (less lonely, more interaction with others)? • Do other people recognize you in the neighborhood? What do you think about this? • Would you like to be more/less involved in your neighborhood and why? • Is the current information provision accessible? • What communication tools do you use to keep in touch with others? Would you like more contact? Why does this work/fail? • How do you experience the social support you receive, is this sufficient? • Are all the health services you need available/accessible to you? What other health services do you need?
Improvements of domains	Improvements of each domain based on needs of elderly in order to realize higher well-being. • What neighborhood characteristics do you think are missing? What do you need in your neighborhood, that is not offered now?

Appendix C. Questionnaires for sample of Surinamese older people

Ageing in your own neighborhood

We would like to know what characteristics are missing in your neighborhood to continue live there as long as possible. Choose one of the following answer options: Not at all, A little, Quite a bit, A lot, Extremely.

What I **miss** to continue live here as long as possible …	***Not at all***	***A little***	***Quite a bit***	***A lot***	***Extremely***
1. …a clean and green neighborhood.	☐	☐	☐	☐	☐
2. … a neighborhood with wide sidewalks and safe crosswalks.	☐	☐	☐	☐	☐
3. … public buildings with elevators that are accessible for wheelchairs and walkers.	☐	☐	☐	☐	☐
4. … a safe neighborhood.	☐	☐	☐	☐	☐
5. … good public transport.	☐	☐	☐	☐	☐
What I **miss** to continue live here as long as possible …	***Not at all***	***A little***	***Quite a bit***	***A lot***	***Extremely***
6. … sufficient parking spots.	☐	☐	☐	☐	☐
7. … affordable housing.	☐	☐	☐	☐	☐
8. … suitable housing for older people.	☐	☐	☐	☐	☐
9. … a neighborhood where many social activities are organized.	☐	☐	☐	☐	☐
10. … affordable activities for older people.	☐	☐	☐	☐	☐
What I **miss** to continue live here as long as possible …	***Not at all***	***A little***	***Quite a bit***	***A lot***	***Extremely***
11. … a neighborhood where people have respect for older people.	☐	☐	☐	☐	☐
12. … a neighborhood where people are willing to help each other whenever necessary.	☐	☐	☐	☐	☐

13. … a neighborhood with people having the same ethnical background as me.	☐	☐	☐	☐	☐
14. … a neighborhood where people dare tos peak up to each other.	☐	☐	☐	☐	☐
15. … a neighborhood where people great and talk to each other.	☐	☐	☐	☐	☐
What I **<u>miss</u>** to continue live here as long as possible …	***Not at all***	***A little***	***Quite a bit***	***A lot***	***Extremely***
16. … a neighborhood with possibilities for voluntary work.	☐	☐	☐	☐	☐
17. … a neighborhood where older people are involved, for example concerning changes in the neighborhood.	☐	☐	☐	☐	☐
18. … local newspaper with information about what is going on in the neighborhood.	☐	☐	☐	☐	☐
19. … access to internet and internet courses in the neighborhood.	☐	☐	☐	☐	☐

What I **<u>miss</u>** to continue live here as long as possible …	***Not at all***	***A little***	***Quite a bit***	***A lot***	***Extremely***
20. … a neighborhood where home care is accessible.	☐	☐	☐	☐	☐
21. … a neighborhood with the GP and pharmacy at walking distance.	☐	☐	☐	☐	☐
22. … a neighborhood with places where older people can go for advice and support.	☐	☐	☐	☐	☐
23. … a neighborhood with volunteers who provide help when necessary.	☐	☐	☐	☐	☐
24. … a neighborhood with shops and other facilities within walking distance.	☐	☐	☐	☐	☐

Well-being

32. 1. What grade do you give your life at the moment?

Grade: ☐ Enter a number from 0 to 10.

A number of questions will be asked about how you feel. These questions refer to the past 3 months. For your answer, will you please choose between never, sometimes, often or always? If you hardly ever have that feeling you can answer never. If you almost always feel that way, answer always. Use whichever answer is closest to the way you feel, never, sometimes, often or always.

2. Do people pay attention to you?	☐ Never ☐ Sometimes ☐ Often ☐ Always
3. Do people help you if you have a problem?	☐ Never ☐ Sometimes ☐ Often ☐ Always
4. Do you feel that people really love you?	☐ Never ☐ Sometimes ☐ Often ☐ Always
5. There are situations in which we deal with groups of people, for example with family, at an association or church, temple or mosque. Do other appreciate your role in the group?	☐ Never ☐ Sometimes ☐ Often ☐ Always
6. Do people find you reliable?	☐ Never ☐ Sometimes ☐ Often ☐ Always
7. Do you feel useful to others?	☐ Never ☐ Sometimes ☐ Often ☐ Always
8. Do people think you do better than others?	☐ Never ☐ Sometimes ☐ Often

	☐ Always
9. Do people find you an influential person?	☐ Never ☐ Sometimes ☐ Often ☐ Always
10. Are you known for the things you have accomplished?	☐ Never ☐ Sometimes ☐ Often ☐ Always
Now some questions about how you feel physically. <u>In the past few months</u>, have you felt:	
11. … relaxed?	☐ Never ☐ Sometimes ☐ Often ☐ Always
12. … in good health?	☐ Never ☐ Sometimes ☐ Often ☐ Always
13. … physically comfortable?	☐ Never ☐ Sometimes ☐ Often ☐ Always
The next questions refer again to the <u>past 3 months</u>.	
14. Are your activities challenging to you?	☐ Never ☐ Sometimes ☐ Often ☐ Always
15. Do you really enjoy your activities?	☐ Never ☐ Sometimes ☐ Often ☐ Always
16. How often are you fully concentrated when doing something?	☐ Never ☐ Sometimes ☐ Often ☐ Always

Appendix D. Code book

Codes	Sub-codes	Sub-sub-codes
Physical well-being	Comfort	Physical problems Pain
	Stimulation	Exercise Mental activities
Social well-being	Affection	Relationships Support Lack of social contact
	Behavioral confirmation	Group standards Acceptance in group Norms and values Ethnicity/religion
	Status	Respect Looking up to you Appreciation Reputation
Outdoor spaces and buildings	Facilities	Supermarkets Shops Social interaction Parks Resting place
	Safety	Footpaths Bicycle lanes
	Public buildings	Elevator Toilet
Transportation	Public transportation	Stops/stations Affordability Facilities in public transport Safety Frequency
	Senior transportation	Vervoer op Maat Affordability Safety Frequency
	Private automobile	Difficulties Safety
Housing	House	One-floor Chores Assistance Affordability
	Adaptions	

		Awareness Adjustments
Social participation	Activities neighborhood Activities association	Participating in activity Close to home Interactions Awareness/information Participating in activity Social connections Travelling
Respect and social inclusion	Respect Inclusion	Respect Treatment of neighbors Social contact Left out Different ethnicities Same ethnicities
Civic participation and employment	Volunteering Involvement in the neighborhood	Motivation Information/awareness Accessible information Interest Connection with neighborhood
Communication and information	Communication Information	Phone Texts/videocall E-mail Social contact Brochures Newsletters Newspapers Leaflets Barriers in receiving information
Community support and services	Care Community support	Availability Arrangements Transportation Help Problems
Relation well-being	Environment Transportation	Social contact Exercising Activities Facilities Physical problems Comfortability Activities Meeting other people

	Communication Participation	Interactions Social network Activities Social interactions Respect Non-acceptance
Missing ageing in place characteristics		
Improvements of ageing in place domains	Safety Facilities Social interactions	