MEANING IN LIFE

A Demographic Analysis of Meaning in Life among Older Adults in the Netherlands

Final Thesis
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27 June 2022, Maastricht
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Acknowledgement

Abstract

This study looked at the perception of meaning in life among older adults (65-plus) with different demographic characteristics and resources in the Netherlands, and at the association with social contacts, general health, religion, and volunteer work. The study used quantitative data collected by Statistics Netherlands with the Social Cohesion and Well-being Survey[1] in 2020. The purpose was to add research on meaning in life in association with social capital, using theories on both concepts such as the Socioemotional Selectivity Theory. The results show that the majority of older adults in the Netherlands experiences a meaningful life. Considering life worth living and having a feeling of contribution are two different aspects of meaning in life. (Very) good perceived general health and having at least once a week contact with friends are positively associated with both aspects. Age, marital status and income are relatively more important for considering life worth living. Being 75-plus and having a higher income are positively associated, while being divorced or widowed are negatively associated. On the contrary, aspects that older adults can influence themselves, such as being a volunteer and considering religion important are relatively more important for the feeling of contribution. Recommendations for future research are to compare the results with a year with less corona measures and with other countries, and to take a larger sample size to allow for separate analyses for 75-plus.

Key words: Health, Meaning in Life, Older Adults, Social Capital, the Netherlands

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[1] Sociale Samenhang en Welzijn Enquête, editie 2020 (CBS)

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1 Introduction

Do people consider their lives meaningful? What factors are associated with experiencing a meaningful life and does this differ along demographic lines such as gender and marital status? In the light of the current ageing, it is especially relevant to investigate meaning in life for older adults (65-plus).

Finding meaning in life can be a struggle for older adults. They often face losses, which can be physical in relation to their health, but also emotional. Being old, they face death and often lose loved ones. These losses may lead to questions about meaning in life (Hupkens, Machielse, Goumans, & Derkx, 2018). Meaning in life may become more important in the face of death and in the process of losing roles and opportunities in society (Fletcher, 2004). So, how meaningful do these older adults experience their lives and what factors play a role in this? Research suggests that older adults with a strong sense of meaning in life may be better able to cope with losses, resulting in better health, both physically and mentally (Krause, 2007). Meaning in life could thus help to cope with suffering (Hupkens et al., 2018). Given our welfare state, it is beneficial for both individuals and society to investigating how meaningful life is experienced and what factors play a role in this.

Little research has been done on social capital in relation to meaning in life. Previous research on social capital focused mostly on the association with well-being and also health and economic phenomena. There is research into the association between self-perceived health and social capital among older adults (Arezzo & Giudici, 2015). Research by Almakaeva, Moreno, and Wilkes (Eds.) (2021) looked at different cultures in the relationship between social capital and subjective well-being. Other research looked into the association between bridging and bonding social capital on the one hand and earnings and subjective well-being on the other hand (Growiec & Growiec, 2010). Related to that, social capital was found to be a better predictor for subjective well-being than the Gross Domestic Product (GDP). Long-term changes in social capital can predict long-term changes in subjective well-being very well. On the contrary, long term changes in GDP do not accurately predict long term changes in subjective well-being (Sarracino, 2012). Besides, Baum (1999) argued for research on the relationship between social capital, health, economic development, and public policy in order to promote equity in societies.

Machielse (2017) investigated whether fifty isolated older adults in the Netherlands succeeded in creating meaning in their lives and how they did that. She focussed on the association between social connection and meaning in life. Other previous research on meaning in life for example looked at the influence of meaning in life and social connection on career self-efficacy (Yuen et al., 2021) or socially frail older adults (older adults with limited social connections) and their (loss of) meaning in life (Duppen Rn et al., 2019). So, some previous research did look into meaning in life and social contacts, but without the use of the concept social capital. Given the limited research available on the role of social capital in relation to meaning in life, this research aims add to the literature by investigating this topic.

Meaning in life can differ between older adults and younger age groups (table 1). The total number shows that most people consider their life worth living (92 percent). The percentage for 65-75 is 92 percent while it is 93 percent for 75-plus. The differences are larger when it comes to the feeling of contribution to society. In general, 74 percent has the feeling of contribution to society. For 75-plus, the percentage is 68 percent compared to 74 percent for 65-75 years of

age. Previous research on this dataset (which is introduced later) already indicated that there was no evidence of a *significant* difference between age categories when it comes to the feeling that life is worth living (Coumans & Van Muiswinkel, 2022). Yet, differences were found for having a feeling of contribution to society. As is visible in table 1, young people between ages 18-25 have lower percentages than people between 25-75 years of age have, although the difference with 25-35 is related to differences in education. Older adults who are 75-plus also have a lower percentage, which is related to not working anymore (Coumans & Van Muiswinkel, 2022).

Table 1 Meaning in life by age category, 2020

		Considering life worth living		*Having a feeling of contribution to society*	
		Neither agree nor disagree to totally disagree	*(Totally) agree*	*Neither agree nor disagree to totally disagree*	*(Totally) agree*
		Row N %	*Row N %*	*Row N %*	*Row N %*
	Total	8	92	26	74
Age category	*18-25*	*10*	*90*	*34*	*66*
	25-35	*7*	*93*	*26*	*74*
	35-45	*8*	*92*	*26*	*74*
	45-55	*8*	*92*	*22*	*78*
	55-65	*9*	*91*	*23*	*77*
	65-75	*8*	*92*	*26*	*74*
	75-plus	*7*	*93*	*32*	*68*

Given the relevance of investigating older adults, this thesis aimed to do descriptive research on the state of meaning in life in 2020 for different demographic characteristics and resources among older adults in the Netherlands. Associations with social contacts, general health, religion, and volunteer work were taken into account. This study could be a stepping-stone for future explanatory research, trying to investigate the 'why' behind the more descriptive findings. Following this objective, the central research question was, "*What is the perception of meaning in life among older adults (65-plus) with different demographic characteristics and resources in the Netherlands and to what extent do social contacts, general health, religion, and volunteer work play a role in this?*" This question was divided into two sub questions.
1. To what extent do older adults in the Netherlands with different demographic characteristics and resources *consider their life worth living* and to what extent do social contacts, general health, religion, and volunteer work play a role in this?
2. To what extent do older adults in the Netherlands with different demographic characteristics and resources *feel that they contribute to society* and to what extent do social contacts, general health, religion, and volunteer work play a role in this?

After this introduction, the theoretical framework with hypotheses and the conceptual model are discussed. Subsequently, the methodology is discussed, after which the results are described. The results section first goes into the differences in demographic characteristics among older adults. Subsequently, differences in resources for the older adults are discussed.

Third, the results about social contacts and the association with meaning in life are described. Last, the other associations (general health, religion, and volunteer work) with meaning in life are described. After the results section, there are conclusions and a discussion. An important note is that this research describes associations; it does not make causal claims.

2 Theoretical Framework
The theoretical framework entails both meaning in life and social capital. After discussing these concepts, the hypotheses and conceptual framework are presented.

2.1 Meaning in Life
Meaning in life is a complex concept. There are many different definitions. Mentioned themes are purpose and coherence, goals in life, whether fulfilment of these goals is accomplished, how the individual perceives his/her life and activities, and how he/she values these (Brandstatter, Baumann, Borasio, & Fegg, 2012). Besides the difficulty of capturing meaning in life in a definition, meaning in life differentiates over time and between contexts (Leontiev, 2005). Although life can be meaningful when it is enjoyed, this is not a necessity. Even when life is hard and there is suffering, life can be meaningful (Frankl, 1984).

There is a conceptual difference between meaning *in* life and meaning *of* life. Meaning of life concerns a more existential question. It could for example be related to religion, which gives meaning to life (Hupkens et al., 2018). It is about the more objective meaning which is ascribed to life on earth in general (Derkx, Bos, Laceulle, & Machielse, 2020). Meaning *in* life concerns the meaning in an individual's life specifically (Hupkens et al., 2018). Meaning in life is about how an individual experiences life and is thus a subjective concept (Derkx et al., 2020). Meaning in life thus relates to the assumption of Baird (1985) that meaning is created, not discovered, in life. He adds that the subjective experience of meaning is not enough; it should be morally approved. This moral approval should be objective and thus goes further than the approval of the person itself. A person could experience subjective meaning in life by killing someone, but this is obviously not what is meant with a meaningful life. Another distinction made by Steger, Frazier, Oishi, and Kaler (2006), concerns the difference between the presence of meaning and the search for meaning in life.
The focus of this research was on the presence of meaning *in* life, as it concerned how meaningful older adults perceive their lives themselves in 2020. However, as Horn (2013) argues, when you focus on meaning in your life, you cannot ignore the bigger question about the meaning of life in general. This is thus indirectly part of the research.

Baumeister (1991) describes four needs for meaning: purpose, value, efficacy, and self-worth. He argues that having a *purpose* is important, reaching your goal not necessarily. For example, a soldier can have the purpose to defend his country but die in the battle. The goal was not reached, but having the purpose helped him to create meaning in the life he was living. For this purpose, people need to imagine their goal, evaluate the actions they need to take, and make decisions to reach the goal. There are two types of purpose, namely goals and fulfilments. Goals are outcomes of certain activities which are not necessarily liked (such as washing the dishes), while fulfilments are activities that are valued in itself (such as watching television). Fulfilments are related to the second need for meaning: *value*. Value is about legitimation for the actions people take and have taken in the past. People want to have positive contribution and feel they did the right thing. Values can be positive (how to act) or negative (how not to act). The third need for meaning is *efficacy*. This is about feeling capable to achieve goals and values. It is related to control but Baumeister (1991) does not call it this way, because having the perception of control is enough to fulfil a sense of meaning. For example, people participating in a lottery are more fulfilled when they can chose their own tickets because this creates illusionary control.

Last, people have the need for *self-worth*, the feeling they have positive value. Although related to values, self-worth is distinct as it can be about feeling good about your career or your race, which are not related to values. Baumeister (1991) adds that if people lose one of the needs for meaning, they will first turn to their remaining sources, before they start looking for new ones.

Concerning meaning in life, Derkx (2016) agrees with Baumeister (1991) on the factors purpose, self-worth, moral worth (value), and competence (efficacy). He adds three concepts. First, *comprehensibility*: people want to understand their lives; they want to know why things happen. Second, *connectedness* is important; people want to have contact and feel connected to others. Third, he mentions *transcendence*. People want to feel part of something bigger. This has to do with rising above the ordinary in life (Derkx, 2016). Schnell (2009) agrees on having purpose (goals), connectedness (belonging), and transcendence (having significance). She adds the need for *coherence*. Related to this concept is the idea that people should be able to tell a *story* about their life in such a way that it creates meaning (Baird, 1985). Baird (1985) further adds the importance of *order* and agrees on the importance of relationships and purpose. The definition used in this thesis combines the mentioned ideas of Baird (1985), Baumeister (1991), Derkx (2016), and Schnell (2009). This thesis will define meaning in life as follows:

> *The subjective experience of an individual about his/her life that is morally approved beyond the person itself and has to do with having a purpose, a feeling of contribution, an understandable life with a story with order and coherence, where transcendence and connection with other people are important.*

The most important source for meaning in life for older adults are relationships with others such as family and friends (Hupkens et al., 2018). This is related to the concept of connectedness which was already mentioned by Derkx (2016) and Schnell (2009). Meaning in life is not a solitary journey, it is found in the interaction with others. For example, older adults can derive meaning from having a certain role such as being a (good) grandparent or being a volunteer. Other sources for meaning in life are pleasant activities, religion, health, self-realization, and preserving values (Hupkens et al., 2018).

2.2 Social Capital

Social capital is, like meaning in life, a concept without a clear definition in the literature (Lancee, 2012; Patulny & Gunnar, 2007). Social capital refers to social *networks* between people. The term 'capital' implies that these networks are a type of resource people can use to reach their goals (Lancee, 2012). Coleman (1988) calls this the productivity of social capital. Having these social contacts is beneficial for all people who are part of the network, as becomes clear from the definition of social capital by Bourdieu (1986, p. 248): *"The aggregate of the actual and potential resources which are linked to the possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition – or in other words, to membership in a group – which provides each of its members with the backing of the collectively-owned capital, a 'credential' which entitles them to credit, in the various senses of the word."* Important to add is that these networks and the contacts they generate could be a goal in itself already.

Social capital can be created in different types of networks, both within the family and outside the family. The amount of capital depends on the strength of the relationships between the persons in the network (Coleman, 1988). Besides networks, other aspects of social organization, which are important to social capital, are *norms* and *social trust*. It is about '*mutual benefit*' (Putnam, 1995), which relates to the idea of collective capital mentioned by Bourdieu (1986). Another important term mentioned in definitions of social capital is *shared action* (Neira, Vázquez, & Portela, 2009). Additionally, the literature distinguishes between networks within groups (bonding social capital) and networks between groups (bridging social capital) (Patulny & Gunnar, 2007). The difference between these types lies mostly in the degree of openness of the networks. More open networks create bridging capital, while more closed networks create bonding capital (Lancee, 2012). Much research focuses on either bonding or bridging or does not make a distinction at all. Patulny and Gunnar (2007) argue that making this distinction is useful to make the measurement of the concept more precise. This research therefore focusses on bonding social capital, as this is most relevant to the relationships of older adults.

The relationships that older adults have can differ from the relationships younger people have. According to the *Socioemotional Selectivity Theory*, people have different goals in different times of their lives and subsequently try to fulfil them by social contacts with different people (Carstensen, Isaacowitz, & Charles, 1999). The three assumptions of this theory are that social contacts are important for people to survive, people act to realize their goals (see also Bandura (1982)), and action takes place after the goals are selected. There are two types of goals, gaining knowledge and regulating emotions (Carstensen et al., 1999). Gaining knowledge allows people to learn about the world, both the physical world itself and the social interactions. The emotional goal can be found in the relationships with others and is related to the pursuit of meaning in life (Carstensen et al., 1999).

2.3 Measurement of Social Capital

Participation and trust are often used as a proxy to measure social capital. The measurement of the levels of participation and trust takes place at the individual level. The results of the individual level can be aggregated to describe a higher level (Van Beuningen & Schmeets, 2013). This implies that social capital can occur at different levels (Coleman, 1988). Van Beuningen and Schmeets (2013) developed a Social Capital Index for the Netherlands to make a coherent overview of social capital possible. The Social Capital Index uses these concepts of trust and participation at three levels. The social (micro) level refers to informal relationships, the civic (meso) level concerns organizations, while the national (macro) level refers to political participation. Both trust and participation relate to social capital, although the trust part seems to relate to it more strongly than the participation part (Van Beuningen & Schmeets, 2013). As described at the end of the previous section, relationships are related to meaning in life (Carstensen et al., 1999). As participation and trust are both aspects of social capital, it can be expected that trust relates to meaning in life as well.

This research focused on social capital measured at the individual level: social capital among older adults. This micro-level was chosen because the central research question was specifically about social contacts and their importance to older adults when it comes to meaning in life. It therefore used the two concepts of the index at the individual level: social participation and social trust. *Social participation* refers to informal relationships with others on the individual

level and *social trust* refers to the average trust people have in other people (Van Beuningen & Schmeets, 2013). Measuring social relationships as part of social capital is in line with the importance of connection (Derkx, 2016; Schnell, 2009) and relationships (Hupkens et al., 2018) for meaning in life. The ideas of Lancee (2012), Putnam (1995), and Van Beuningen & Schmeets (2013) are combined in a definition. This research will define social capital as:

> *Bonding social networks on the micro-level that have mutual benefit and can function as a resource for people to achieve their goals, reflected in participation (informal relationships) and trust (average trust in other people).*

2.4 Factors associated with Meaning in Life

Besides social capital, other factors could be associated with meaning in life. This thesis focusses on the role of gender and marital status, perceived general health, religion, and volunteer work.

2.4.1 Gender and Marital Status

Not all people have equal access to sources of meaning in life. The World Bank (2011) mentions three domains of *Gender Equality*. First, there are endowments. Endowments refer to certain assets (resources) that people have and built up throughout their lives, such as education, financial resources, and health. Second, there are economic opportunities. These opportunities are about the possibilities people have to use their endowments to, for example, generate income and consumption. These aspects are important for well-being (World Bank, 2011). Last, there is agency, which refers to the power people have to decide which action to take. Having enough choice with regard to these factors relates to more well-being than having less or a lack of choice (World Bank, 2011).

Disadvantage due to gender is bigger in the poorest countries but also for people with lower incomes in richer countries. Overall, women earn less than men do (World Bank, 2011). In the Netherlands, the Gender Equality Index was 74.1 in 2020 (EIGE, 2022). The Gender Equality Index is a tool used to measure gender equality over time in the European Union (EU). The index combines rankings for work, money, knowledge, time, power, and health. In the EU ranking, the Netherlands was in fifth place in 2020 and scored higher than the EU average on the index (EIGE, 2022). Even though the score is higher than the EU average, gender equality if far from reached, which could negatively influence the well-being of women. The literature shows that well-being and meaning in life are related concepts (Hupkens et al., 2018). Therefore, it could be expected that the same pattern holds for meaning in life.

Other disadvantaged groups are for example the widowed. According to the *Psychosocial Model of Mental Health Counselling*, widowed people lose their role as a spouse, their social support, and income, among other losses (Fry, 2001). In turn, these losses negatively impact psychosocial functioning (Fry, 2001) (see also Raphael, Middleton, Martinek, and Misso (1993)). The expectation would therefore be that widowed people experience less meaning in

life. As divorced people do no longer have a role in the traditional household, it could be that they experience a similar lower amount of meaning in life as widowed people.

2.4.2 Perceived General Health

Concerning health, Roepke, Jayawickreme, and Riffle (2013) did a literature review on the association between meaning in life and physical health. They conclude that there is more research available with regard to well-being and health than there is on meaning in life and health, and that there is no single consistent model yet. Even though there is no theoretical model, Roepke et al. (2013) state that research results suggest a positive relationship between meaning in life and physical health. There are no conclusions with regard to the direction of this association nor the causality.

The *Hierarchic Model of Meaning* looks at the influence of meaningfulness on health (Schnell, 2021). This is the other way around than this thesis investigated but as the direction can be either way; the model can be used to explain the association between health and meaning in life as well. The model originates from the ideas of Aaron Antonovsky about where health comes from (see also Antonovsky (1979)). He came up with the term Sense of Coherence, which is important for the management of stress in a healthy way. Sense of Coherence consists of comprehensibility, manageability, and meaningfulness (Schnell, 2021). People need to comprehend what happens, they want to be able to manage the demands put on them, and they want to feel that their lives are meaningful. Following this reasoning, people who consider their lives as meaningful will invest in healthy behaviours. The hierarchic model of meaning has meaningfulness at the top. When people experience meaningfulness, they are likely to participate in (from high to low) healthy behaviours, setting goals, acting according to these goals, which in turn influences their perceptions (Schnell, 2021). According to this theory, health seems an important factor. Other research confirms this (Coumans & Van Muiswinkel, 2022). As health is such an important factor, it could be that some associations with meaning in life and social capital disappear after correction for this.

2.4.3 Religion/Spirituality

Additionally, there is the role of religion in physical health and well-being. The *Meaning System Framework* can be used to investigate this role via several mechanism, among others meaning in life (Park, 2007). Park (2007) bases this framework on the broad literature available, while noting that much of the research on this topic lacks a theoretical framework. She contributes by integrating the available research into this meaning system framework. The meaning system of people consists of global beliefs and goals, and meaning in life. According to the framework, religion is an important part of the meaning system as it influences goals, beliefs, and meaning in life (Park, 2007).

2.4.4 Volunteer Work

Social roles are related to relationships, as part of social capital. The *Symbolic Interactionist Theory* would argue that having more social roles would make the chance of conflict or overload between roles larger which would negatively affect emotional well-being and health (Thoits, 2012). However, the *Role Accumulation Hypothesis*, which followed the Symbolic Interactionist Theory, argued the opposite. More role-identities (such as being a volunteer) would mean, among others, more meaning in life and more purpose, which is in turn good for

mental and physical health (Thoits, 2012). Besides, volunteer work could contribute to having a purpose and a feeling of contribution, as mentioned in the definition of meaning in life for this thesis.

2.5 Conceptual Framework and Hypotheses

Based on the literature and the set-up of the study, a conceptual framework was made (figure 1). Meaning in life was investigated along two lines: the extent to which people consider their life worth living and the extent to which people feel they contribute to society. These lines were subsequently investigated for different demographic characteristics and resources. Additionally they were investigated in relation to social capital, general health, religion, and volunteer work. The association between social capital and meaning in life was of particular importance. The focus was on bonding social-capital at the individual level.

Figure 1 Conceptual framework
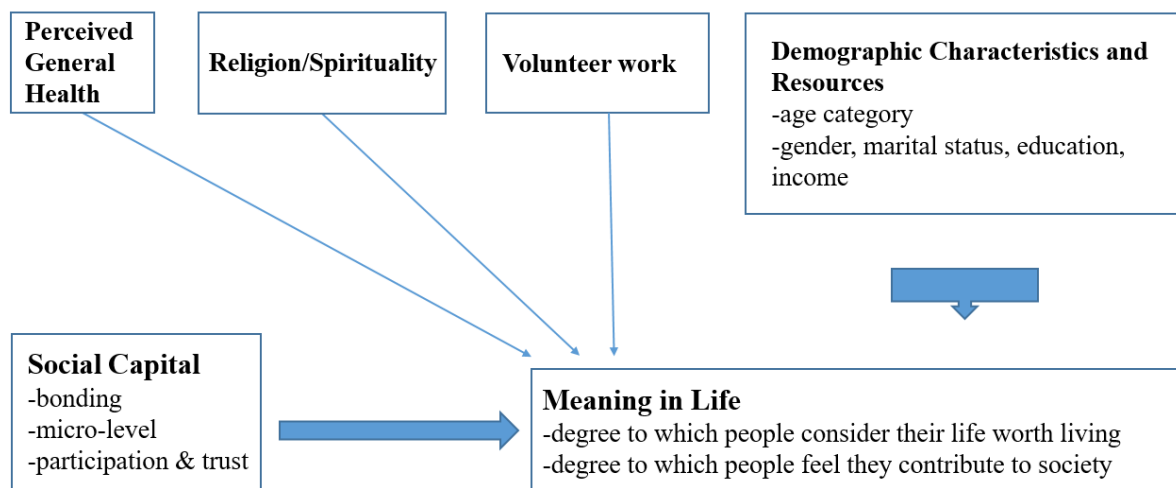
Related to this conceptual model are the hypotheses that are based on the theories described above.

H1:   Women experience less meaning in life than men do.

H2:   Older adults with a high income or a high education experience more meaning in life than older adults with a low income or a low education.

H3:   Widowed and divorced people experience less meaning in life than other older adults do.

H4:   Individual level social contacts and trust are positively associated with meaning in life among older adults, but the associations disappear after correction for health.

H5:   Older adults who regard their general health as (very) good experience more meaning in life than older adults who regard their general health as less good.

H6:   Older adults who consider religion/spirituality (very) important, experience more meaning in life than older adults who consider religion/spirituality less important.

H7:   Older adults who participate in volunteer work experience more meaning in life than older adults who do not participate in volunteer work.

3 Methodology

The study used data collected by Statistics Netherlands. The data had its origin in the annual Social Coherence and Well-being (SSW[2]) survey which was conducted throughout 2020 (CBS, 2022b). This annual survey includes an ad-hoc module, which is designed to investigate additional topics besides the standard topics included in the survey. The themes included in this ad-hoc module change each year. In 2020, this module included questions about meaning in life.

3.1 Study Design

As meaning in life is not annually measured in the SSW survey, the study design was cross-sectional with a focus on 2020. The survey data were mostly quantitative. The survey included some open questions, yet these were not relevant to this research about meaning in life. This research used quantitative variables from both the regular survey questions and the ad-hoc module. The quantitative analyses of this research aimed to describe the state of meaning in life among older adults in 2020. Future explanatory research can use this descriptive research as a stepping-stone.

3.2 Study Area and Data Set

The study area covered the Netherlands in 2020. The study population for the SSW survey concerned all people living in the Netherlands from age 15 onwards, not living in an institution. Institutionalized people are excluded based on the policy of Statistics Netherlands (CBS, 2022b; De Regt & Adriaanse, 2021). This thesis selected respondents from age 18 onwards and was particularly concerned with older adults from age 65 onwards. The study population of the SSW survey for the questions about political participation and the module about meaning in life was already age 18 and above (CBS, 2022b).

The study population was sampled from the Basic Register Persons. As the survey was conducted monthly throughout 2020, there were twelve samples, one for each month (De Regt & Adriaanse, 2021). The selection of respondents for the survey was based on a S*tratified Two-stage Design*. The first step was to take a sample of municipalities. Chances were based on the amount of residents. For each municipality it was calculated how many respondents should be asked. In the second step, a sample was taken within each municipality of the target population of the study (De Regt & Adriaanse, 2021). The idea of this stratified two-stage design was that the municipalities sampled in the first step reflected the target population well. This type of sample is more cost-effective than a random sample of the complete population, as respondents live closer to each other in the sampled municipalities (Banning, Camstra, & Knottnerus, 2010).

Subsequently, sampled respondents were approached using the *Mixed Mode Design*. First, all selected respondents were approached with an invitation letter to participate in an online survey. This letter includes a login code and a user number. The research goal is explained and the possibility of an interview by telephone or in person in case of no response. All participants received a 5-euro voucher up front to thank for their participation (De Regt & Adriaanse, 2021). If there was no response, people received up to two rappel letters. People who did not respond after 5.5 weeks were approached by telephone (if the number was available) or in person. Due

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[2] Sociale Samenhang en Welzijn

to budget restrictions and the planning of interviews, not all non-respondents were approached again (De Regt & Adriaanse, 2021).

The rationale for this mixed mode design was twofold: it is both cost-effective and inclusive. Approaching all respondents online is relatively easy and cost-effective (6.1 euro per respondent (De Regt & Adriaanse, 2021)). However, not all people respond and it is likely that these people share similar characteristics. This means that the response received from the online survey might be biased and thus not a good representation of the society. Even though this can be corrected by weighting the results, the goal is to include as many people as possible. Therefore, it is desirable to include them in the research by means of telephone and visiting them in person, even though this increases the costs. A telephone interview costs 16.8 euro per respondent and an in person interview 75.3 euro per respondent (De Regt & Adriaanse, 2021).

In the week of 23 March 2020, Statistics Netherlands started with sending special corona cards with the survey invitation. These cards explained why the research continued in times of a pandemic and wished the respondents health and strength (De Regt & Adriaanse, 2021). Interviews by telephone were conducted from home during the pandemic. The switch took some time, but the interviews were resumed quickly. For the interviews in person, people were approached by telephone from half March till September (De Regt & Adriaanse, 2021). If there was no number available, people were given the corona card and asked to call the interviewer. From September till 15 December the normal procedure took place (with some measures from half October onwards), after which the switch to interviewing by telephone was made again (De Regt & Adriaanse, 2021).

Each month, 1218 people were selected for approach with the online survey, 302 for the survey by telephone (follow-up) and 129 for the survey in person (follow-up) (De Regt & Adriaanse, 2021). At the end of the year, there were 7836 respondents from age 15 onwards and 7500 for age 18 and above. The total response rate was 52 percent (table 2). This table shows the response rate for the survey for people 15 years and older. As is visible in the table, the following groups have a lower response rate to the survey compared to the other groups: males, people who never married, 25-35 year olds, the lowest income quartiles, people living in the western part of the country, and people living in very strongly urban parts of the country.

Table 2 Survey response rates from age 15 onwards, 2020

		Response %
		Mean
Average total response rate		52
Gender	*Male*	50
	Female	53
Marital status	*Married*	59
	Divorced	47
	Widowed	50
	Never been married	44
Age category	*15-24*	46
	25-34	41
	35-44	47
	45-54	52
	55-64	59
	65-74	64
	75-plus	52
Standardised income	*First (lowest) quartile*	38
	Second quartile	49
	Third quartile	56
	Fourth (highest) quartile	60
Part of the country	*North*	56
	East	54
	West	49
	South	53
Urbanity	*Very strongly urban*	45
	Strongly urban	52
	Moderately urban	53
	Little urban	56
	Not urban	57

3.3 Data Quality

The quality of the data collected in the SSW survey 2020 is high. First, the data was collected throughout the country, making it representative for the Netherlands as a whole. A sample (almost) never fully reflects society. This was visible in the different response rates for different groups (see table 2). To account for this, Statistics Netherlands uses elaborated weights. The weights included the following characteristics: "gender, age, origin, marital status, urbanity, province, part of the country, household size, income, and the month the survey was taken" (CBS, 2022b, p. 1). The elaborated weights were the second reason for the high data quality. Furthermore, a benefit of using these data is that the data were already available. Statistics

Netherlands has a well working infrastructure to conduct such surveys. Conducting such a research without this infrastructure would ask for much more time and resources.

Even though the quality of the data is high, using data collected by Statistics Netherlands for this thesis had some difficulties to it as well. The high data protection is excellent, yet this made it impossible to share preliminary results. The data used for this thesis had not been published in this way before. In order to share (preliminary) results, these outcomes first needed to be published. Presenting about the research at the UG and discussing with a supervisor outside Statistics Netherlands was therefore difficult. A second difficulty was that the survey included a limited number of older adults. There were 7836 respondents from age 15 onwards, distributed well over the age groups. Without the weights there were 7500 respondents age 18-plus of which 2125 were older adults (65-plus). This led to limited results for the variable marital status, as the category 'never been married' had less than one hundred respondents. Statistics Netherlands does not publish results with totals below this threshold.

3.4 Operationalization of Concepts

The central concept of this study was meaning in life. This concept was operationalized along two lines. The first line concerns the extent to which people consider their lives worth living and the second line concerns the extent to which people feel they contribute to society. There were five answer categories for these two lines: totally agree; agree; do not agree, do not disagree; disagree; totally disagree.

Another important concept concerned social capital. The study focussed on the individual level of social capital. This was operationalized along the lines of social participation and social trust, based on the individual micro-level of the Social Capital Index designed by Van Beuningen and Schmeets (2013). Questions were asked about the frequency of social contact with specific groups such as other family members, friends, and neighbours. The five answer categories were: daily; at least once a week but not daily; at least once a month but not weekly; less than once a month; rarely or never. Van Beuningen and Schmeets (2013) combine the micro, meso, and macro level indicators into one index, based on Structural Equation Modelling and Partial Least Squares estimation. This thesis focusses on the micro-level and investigate the indicators separately, because of special interest in the contacts on their own and how they behave in the model. Besides, the factor- and reliability analyses to investigate the internal consistency showed that the internal consistency was low (three items, $\alpha = 0.427$).

Social trust was operationalized by asking respondents about their general trust in other people. The answer categories were: most people can be trusted; and one cannot be careful enough. Other concepts were general health, religion, and volunteer work. For health, respondents were asked how they perceived their general health: very good; good; okay; bad; or very bad. For religion, respondents were asked how important religion/spirituality is for them: very important; important; somewhat important; not important; or not important at all. Volunteer work was a dummy variable measuring whether people were a volunteer or not.

Answer categories for the variables measuring meaning in life, social capital, health, and religion were dichotomised to ensure high enough cell counts in analyses where variables were distinguished further. The cut-off points were (totally) agree; at least once a week; (very) important; and (very) good. For the variables for meaning in life, social capital, health and

religion there were some respondents who used the response category "no answer". In the online survey, respondents must fill in one of the categories before they can continue. Respondents can use the response category 'no answer' in case they do not know the answer or refuse to answer the question. In interviews by telephone or in person, the survey taker had to fill in this option. The respondents who answer 'no answer' form missing information and are thus left out of the analyses.

The demographic variables and resources were operationalized as follows. The age of respondents was divided into seven categories: 18-25 years old; 25-35 years old; 35-45 years old; 45-55 years old; 55-65 years old; 65-75 years old; and 75-plus. Gender had two categories: male and female. Education referred to the highest education attained in three categories: low, secondary, and high. Low education refers to primary education. In the Dutch system, secondary education ranges from pre-vocational secondary education (vmbo) to pre-university education (vwo). High education ranges from higher professional education to doctor. The standardized household income is divided into quartiles, where the first quartile refers to the lowest income and the fourth quartile refers to the highest income. For marital status, there were four categories: married (also legal separation), including civil partnership; divorced by law; widowed; and never married. Table 3 shows the original questions and table 4 shows the descriptive results.

Table 3 Original answer categories, survey 2020

Theme	Question	Original Requested Categories	Question Posed To
Meaning in Life	Finally some questions about what you consider important in your life. Could you please indicate to what extent you agree or disagree with the following statements? I consider my life worth living. I feel that I contribute to society.	1 Totally agree 2 Agree 3 Not agree, not disagree 4 Disagree 5 Totally disagree	Everyone
Social Capital (participation)	How often do you have contact with one or more family members who are not living at home? How often do you have contact with friends or really good acquaintances? How often do you have contact with neighbours?	1 Daily 2 At least once a week but not daily 3 At least once a month but not weekly 4 Less than once a month 5 Rarely or never	Everyone
Social Capital (trust)	In general, do you think most people can be trusted or that one cannot be careful enough when dealing with people?	1 Most people can be trusted 2 One cannot be careful enough	Everyone
Perceived General Health	In general, how is your health?	1 Very good 2 Good 3 Okay 4 Bad 5 Very bad	Everyone
Religion	To what extent is religion or spirituality important to you?	1 Very important 2 Important 3 Somewhat important 4 Not important 5 Not at all important	Everyone
Volunteer Work	Did you do volunteer work in the last twelve months?	1 Yes 2 No	Everyone

Table 4 Frequency table older adults (65-plus), SSW Survey 2020

		Count	Column N %
Age category	65-75	1039	58
	75-plus	739	42
	Total	1778	100
Gender	Male	837	47
	Female	941	53
	Total	1778	100
Marital status	Married or registered partnership	1109	62
	Divorced by law	200	11
	Widowed	376	21
	Never married	93	5
	Total	1778	100
Highest education attained	Low	814	47
	Secondary	529	31
	High	378	22
	Total	1721	100
Income	First (lowest) quartile	394	22
	Second quartile	617	35
	Third quartile	429	24
	Fourth (highest) quartile	338	19
	Total	1778	100
Frequency of contact with other family members	Less than once a week	282	16
	At least once a week	1463	84
	Total	1745	100
Frequency of contact with friends	Less than once a week	589	34
	At least once a week	1146	66
	Total	1735	100
Frequency of contact with neighbours	Less than once a week	520	30
	At least once a week	1216	70
	Total	1736	100
General trust in other people	Most people can be trusted	910	55
	One cannot be careful enough	756	45
	Total	1666	100
Religion/spirituality	A little important to not at all important	1183	71
	(Very) important	480	29
	Total	1663	100
Perceived general health	Other	748	43
	(Very) good	994	57
	Total	1742	100
Volunteer work	Volunteer	720	41
	No volunteer	1058	59
	Total	1778	100
Considering life worth living	Neither agree nor disagree to totally disagree	126	7
	(Totally) agree	1583	93

	Total	1709	100
Having a feeling of contribution to society	Neither agree nor disagree to totally disagree	472	29
	(Totally) agree	1168	71
	Total	1640	100

3.5 Data Analysis

Statistics Netherlands uses virtual machines to work in. There is a production virtual machine and a secure virtual machine. The data were analysed in the secure virtual machine, which is even better protected than the production virtual machine. Trainees get access to the virtual machine, the secured virtual machine, the dataset, and the Statistical Package for the Social Sciences (SPSS) after they sign a confidentiality contract. In SPSS, several statistical analyses were conducted. Before these analyses could be conducted, the variables were checked, recoded, and labelled.

After the preparation, Custom Tables (C-tables) were used to check all the labels, categories, and the cell count of all the variables. This step was followed by cross tabulations. These analyses were done on weighed data to correct for the difference between the sample and the study population. An important check at this point was cell count. All categories needed to have a total number of respondents equal to or above one hundred. Statistics Netherlands does not publish results with a lower cell count. The aim is to protect the identity of respondents and to minimise the risk of disclosure of personal information.

This check was particularly important for the crosstabs, where the totals for each category of *both* variables should be equal to or above one hundred. Further analyses could not use variables (or only partly) with a lower total number. This applied to 'never married' for marital status. At the place of the percentages, dots were placed in the table. The respondents were not removed from the dataset, because the respondents remained relevant for other variables in the model. Removing them might distort the findings for the other variables and possibly create problems with the cell count there. Besides, these never married respondents are part of the weights for the dataset. It is therefore best to remove as few respondents as possible.

To start the investigation into the association between variables, the Chi-square was calculated for each cross-tab. Subsequently, the association was tested by a bivariate *logistic* regression, as the dependent variables were dichotomous. For regression analyses, the weight was put off. The third step was to perform multiple logistic regression to test whether the associations would hold after the inclusion of background variables. Standard correction for background variables included age, gender, education, and income.

Some associations (dis)appeared after this standard correction. With several multiple regression models it was investigated which variable caused this (dis)appearance. In each model, one of the background variables was added to the bivariate logistic regression for which the association (dis)appeared. It then became clear which background variable(s) caused the association to (dis)appear. Subsequently, two crosstabs were made with the background variable to explain its mediating influence. One crosstab with the dependent variable and one with the independent variable. A hypothetical example is that volunteers feel more often that they contribute to society, but not after correction for gender. The crosstabs then showed that volunteers are more often women and women feel more often that they contribute to society.

After the models with the background variables were made, two final models with all variable were made. One for the feeling that life is worth living and one for the feeling of contribution to society. For these models it was also tested which variables influenced a (dis)appearance of significance by adding and removing them.

To check that the variables in the model were not multicollinear, the collinearity statistics were calculated. The Variance Inflation Factor (VIF) was well below ten. It did not come above two for 65-plus. Therefore, the variables in the model were not multicollinear. At first, position in the household and marital status were put in the model together. However, even though the VIF did not point out multicollinearity, position in the household was removed as the categories overlap theoretically. The choice for marital status was made because the cell count for position in the household was only sufficient for two out of five categories.

3.6 Ethical Issues

The research used data collected by Statistics Netherlands. Statistics Netherlands adheres to the ethical principles of doing research. They protect their data to prevent harm for respondents. Researchers using the data of Statistics Netherlands have to sign a confidentiality contract. The organisation has several measures in place to protect respondents. With the invitation letters for the research, respondents were informed about what organization Statistics Netherlands is with the use of a leaflet (De Regt & Adriaanse, 2021). If desired, they could visit a website about the research and previous results of research conducted in earlier years. Furthermore, there was a section about informed consent included in the letter (De Regt & Adriaanse, 2021). Only Statistics Netherland's staff that needs to work with the data has access to it and staff is not allowed to share information. Data are only used for statistical or scientific purposes. Furthermore, data is pseudonymised to protect sensitive data. Statistics Netherlands has a data protection officer to ensure the General Data Protection Regulation is complied with (CBS, 2022a).

With regard to positionality, the goal is to minimise the influence in both the questions and of the interviewers. As Statistics Netherlands collected the data, this applied mostly to Statistics Netherlands staff. For example, the interviewers who conducted the telephone surveys and the surveys at home were informed about the survey and the changes in it compared to the survey last year. Furthermore, they had the possibility to have a look at the design of the online survey themselves (De Regt & Adriaanse, 2021). This contributes to minimizing the influence of the position of the interviewers.

4 Results

4.1 Demographic Characteristics

4.1.1 Age

In line with previous research on the dataset (Coumans & Van Muiswinkel, 2022), this research did not find evidence of a significant difference in age when it came to considering life worth living before and after correction for gender, education, and income[3]. However, in the final model in table 5, 75-plus considered life significantly more often worth living than older adults between 65 and 75 years of age. The difference that is visible in table 7 disappeared when income and marital status were removed from the model together. Regarding the feeling of contribution, older adults who are 75-plus agreed or totally agreed less often with the statement that they feel they contribute to society than older adults who are 65-75 years of age, also after correction. This was in line with earlier research on the dataset (Coumans & Van Muiswinkel, 2022). In the final model[4] (table 6), the difference between the age groups disappeared because of a combination of education, income, trust and volunteer work. This has to do with the fact that 75-plus have less often a high education or income, think less often that most people can be trusted, and are less often a volunteer than 65-75-year old. Concluding, the percentage differences in age apparently have more to do with other variables than with age itself.

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[3] Regression models before correction and after correction for age, gender, income, and education are not shown except for when they are mentioned explicitly. The final regression models are shown in table 5 and table 6.

[4] The final models include all variables. This reduces the statistical power of the models, because certain variables have missing values, lowering the total number of cases included.

Table 5 Regression results, life worth living with social capital and other associated variables (N: 1850)

	B	S.E.	Wald	Sig.		Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
75-plus	0.603	0.240	6.325	0.012	*	1.827	1.142	2.922
Female	0.095	0.222	0.183	0.668		1.100	0.712	1.698
Marital status (married)			20.975	0.000				
Divorced	-1.063	0.314	11.474	0.001	**	0.345	0.187	0.639
Widowed	-1.032	0.273	14.300	0.000	***	0.356	0.209	0.608
Never been married	.	.	.	.	.	.	.	.
Highest education attained (low education)			0.539	0.764				
Secondary education	-0.082	0.262	0.098	0.755		0.921	0.551	1.540
High education	-0.238	0.324	0.539	0.463		0.789	0.418	1.487
Standardised income			14.031	0.003				
Second quartile	0.884	0.282	9.791	0.002	**	2.420	1.391	4.209
Third quartile	0.993	0.312	10.132	0.001	**	2.699	1.465	4.975
Fourth quartile (highest)	0.792	0.340	5.438	0.020	*	2.208	1.135	4.298
Frequency of contact with other family members: at least once a week	0.320	0.264	1.466	0.226		1.377	0.820	2.311
Frequency of contact with friends: at least once a week	0.797	0.226	12.425	0.000	***	2.219	1.425	3.456
Frequency of contact with neighbours: at least once a week	0.222	0.224	0.975	0.323		1.248	0.804	1.937
General trust in other people: One cannot be careful enough	-0.311	0.222	1.963	0.161		0.733	0.474	1.132
Religion/spirituality (very) important	0.392	0.266	2.184	0.139		1.481	0.880	2.492
(Perceived) general health (very) good	1.815	0.258	49.644	0.000	***	6.142	3.707	10.177
No volunteer	0.152	0.237	0.411	0.521		1.164	0.732	1.851
Constant	0.756	0.395	3.672	0.055		2.130		

P-value	*	0.05
	**	0.005
	***	0.001

Note: each first category was the reference category
-2 Log likelihood: 674.970 Significance: 0.000
Cox & Snell R Square: 0.077
Nagelkerke R Square: 0.214

Table 6 Regression results, feeling of contribution with social capital and other associated variables (N: 1803)

	B	S.E.	Wald	Sig.		Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
75-plus	-0.123	0.123	1.004	0.316		0.884	0.694	1.125
Female	0.045	0.122	0.135	0.713		1.046	0.824	1.328
Marital status (married)			10.674	0.014				
Divorced	-0.363	0.200	3.288	0.070		0.696	0.470	1.030
Widowed	-0.336	0.153	4.798	0.028	*	0.715	0.529	0.965
Never been married	.	.	.	.	.	.	.	.
Highest education attained (low education)			5.566	0.062				
Secondary education	0.332	0.141	5.508	0.019		1.393	1.056	1.838
High education	0.134	0.171	0.620	0.431		1.144	0.819	1.599
Standardised income (a)			2.730	0.435				
First income group: lowest)	-0.067	0.201	0.111	0.739		0.935	0.630	1.387
Second income group	-0.260	0.175	2.206	0.138		0.771	0.546	1.087
Third income group	-0.148	0.167	0.782	0.376		0.863	0.622	1.197
Frequency of contact with other family members: at least once a week	0.132	0.158	0.695	0.404		1.141	0.837	1.555
Frequency of contact with friends: at least once a week	0.607	0.123	24.217	0.000	***	1.835	1.441	2.337
Frequency of contact with neighbours: at least once a week	0.169	0.125	1.812	0.178		1.184	0.926	1.513
General trust in other people: One cannot be careful enough	-0.149	0.120	1.541	0.214		0.862	0.681	1.090
Religion/spirituality (very) important	0.579	0.139	17.490	0.000	***	1.785	1.360	2.342
(Perceived) general health (very) good	0.799	0.116	47.327	0.000	***	2.224	1.771	2.793
No volunteer	1.001	0.126	62.905	0.000	***	2.720	2.124	3.483
Constant	-0.441	0.245	3.245	0.072		0.644		

P-value			
	*		0.05
	**		0.005
	***		0.001

Note: each first category was the reference category, except for income
(a) Reference group: fourth quartile
-2 Log Likelihood: 1853.146   Significance: 0.000
Cox & Snell R Square: 0.134
Nagelkerke R Square: 0.195

Table 7 Meaning in life according to social capital and other associated variables, 65-plus, 2020

| Variable	Number of cases 1, 2	Category	1 Considering life worth living		2 Having a feeling of contribution to society	
			Neither agree nor disagree to totally disagree	(Totally) agree	Neither agree nor disagree to totally disagree	(Totally) agree
			Row N %	Row N %	Row N %	Row N %
Total	1709 / 1640	Total	7	93	29	71
Age category	1709 / 1640	65-75	8	92	26	74
		75-plus	7	93	32	68
Gender	1709 / 1640	Male	8	92	28	72
		Female	7	93	30	70
Marital status	1709 / 1640	Married or registered partnership	5	95	25	75
		Divorced by law	14	86	33	67
		Widowed	10	90	34	66
		Never married	.	.	.	.
Highest education attained	1672 / 1608	Low	8	92	34	66
		Secondary	7	93	25	75
		High	6	94	22	78
Standardised income	1708 / 1639	First (lowest) quartile	14	86	33	67
		Second quartile	6	94	32	68
		Third quartile	5	95	26	74
		Fourth (highest) quartile	5	95	22	78
Frequency of contact with other family members	1697 / 1629	At least once a week	6	94	27	73
		Less than once a week	13	87	37	63
Frequency of contact with friends	1691 / 1624	At least once a week	5	95	24	76
		Less than once a week	11	89	39	61
Frequency of contact with neighbours	1688 / 1624	At least once a week	6	94	26	74
		Less than once a week	11	89	35	65
General trust in other people	1634 / 1582	Most people can be trusted	5	95	24	76
		One cannot be careful enough	9	91	34	66
Religion/spirituality	1636 / 1582	(Very) important	5	95	22	78
		A little important to not important at all	8	92	32	68
(Perceived) general health	1703 / 1633	(Very) good	2	98	21	79
		Other	14	86	40	60
Volunteer work	1709 / 1640	Volunteer	4	96	16	84
		No volunteer	9	91	38	62

4.1.2 Gender

Hypothesis 1 expected that women would experience less meaning in life than men would. However, the thesis found no evidence that gender plays a role in meaning in life among older adults. This stayed the same before correction, after correction, and in the final model. It could be that the Netherlands is more gender neutral than expected, that this sample did not pick it up, or that other factors that are not included are at play.

4.1.3 Marital Status

For marital status, the results for older adults who have never been married were not shown, because there was too little cell count to split out. The small cell count shows that living together without being married is not yet common among older adults in the Netherlands. Figure 2 shows, in line with hypothesis 3, that divorced (86 percent) or widowed (90 percent) older adults considered their lives less often worth living than married older adults did (95 percent). Concerning the feeling of contribution to society, the same pattern holds. Divorced or widowed older adults did less often agree with the statement that they feel they contribute to society than married older adults did, also after correction. However, in the final model (table 6), a difference was only visible for widowed older adults compared to married older adults. The difference with divorced older adults is marginally significant at the 0.10 level. This became significant when general trust or volunteer work were removed from the model. Divorced older adults do less often think that most people can be trusted and they are less often a volunteer. That is associated with feeling less often that one contributes to society.

Figure 2 Considering life worth living by marital status
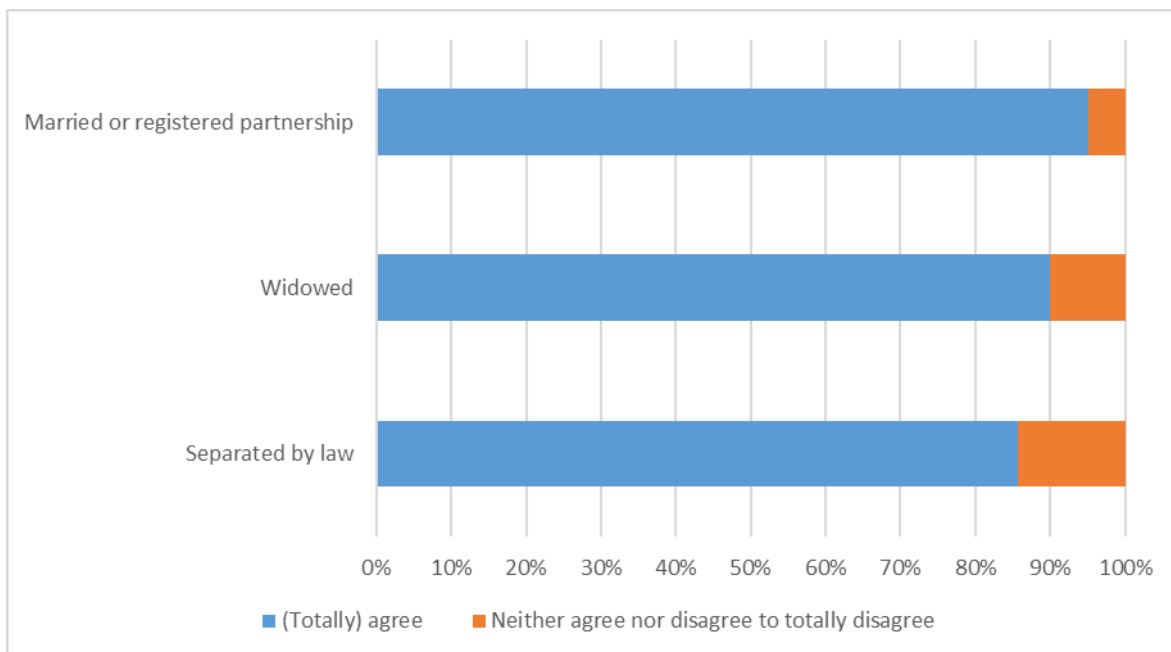

4.2 Resources

4.2.1 Education

Contrary to the expectation of hypothesis 2 that older adults with a high education would experience more meaning in life, this thesis found no evidence for this in the final models (table 5 and table 6). For the feeling of contribution, education did play a role before and after

correction. Older adults with a secondary or high education did more often (totally) agree with the statement that they feel they contribute to society than older adults with a low educational level. However, in the final model (table 6), these differences disappeared because of several other variables. When volunteer work was removed, secondary education became significant. When volunteer work and health or volunteer work and religion were removed from the model together, education became significant again. Therefore, the differences apparently have more to do with these other variables than with education. Older adults who have a high education are more often volunteer, they perceive their health more often as (very) good, and they consider religion more often (very) good. These factors are associated with having a feeling of contribution more often.

4.2.2 Income

In line with hypothesis 2, older adults with an income in the second (94 percent), third (95 percent) and fourth (95 percent) quartiles considered their lives more often worth living than older adults in the first (lowest) quartile did (86 percent), as is visible in figure 3. Before correction, older adults with an income in the first or second quartiles felt less often that they contributed to society than people in the fourth (highest) quartiles felt. When correcting for age, gender, and education, the differences disappeared because of education. Older adults with an income in the fourth quartile have more often a high education. People with a high education feel more often that they contribute to society. In the final model (table 6), there was no difference in income either. Besides education, marital status, volunteer work and general trust or health played a role. When these variables were removed from the model together, the difference became visible again. This has to do with the fact that older adults with an income in the fourth quartile have more often a high education, are more often married, are more often a volunteer, think more often that most people can be trusted, and perceive their health more often as (very) good. These factors are associated with having a feeling of contribution to society more often.

*Figure 3 Considering life worth living by income quartiles*
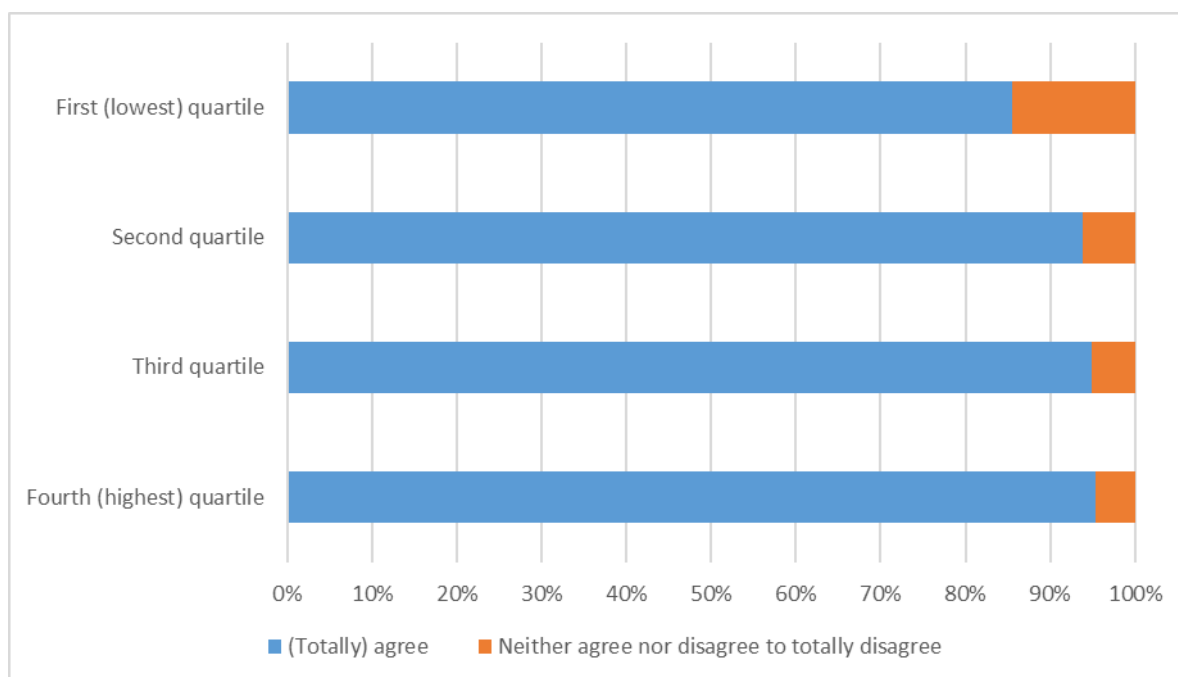
4.3 Social Contacts

4.3.1 Participation

Table 4 shows that the majority of older adults have at least once a week contact with family, friends, and neighbours. Older adults who contact their friends at least once a week considered their life more often worth living than older adults who have less frequent contact with their friends (table 5). Figure 4 shows that they also felt more often that they contribute to society (76 percent) than older adults who have less frequent contact with their friends (61 percent). Both findings are in line with hypothesis 4 although the association does not disappear because of health. Before and after correction, this pattern also applied to contact with other family members and neighbours. The percentage differences were biggest for having a feeling of contribution. In the final models (table 5 and table 6), the difference for other family members and neighbours disappeared. These became visible again when the frequency of contact with friends was removed from the model. An exception was the association between the frequency of contact with neighbours and considering life worth living. This became significant again after contact with friends *and* family were removed from the model. A possible explanation could be that older adults considered the frequency of contact more important than with whom they have contact.

Figure 4 Feeling of contribution by frequency of contact with friends
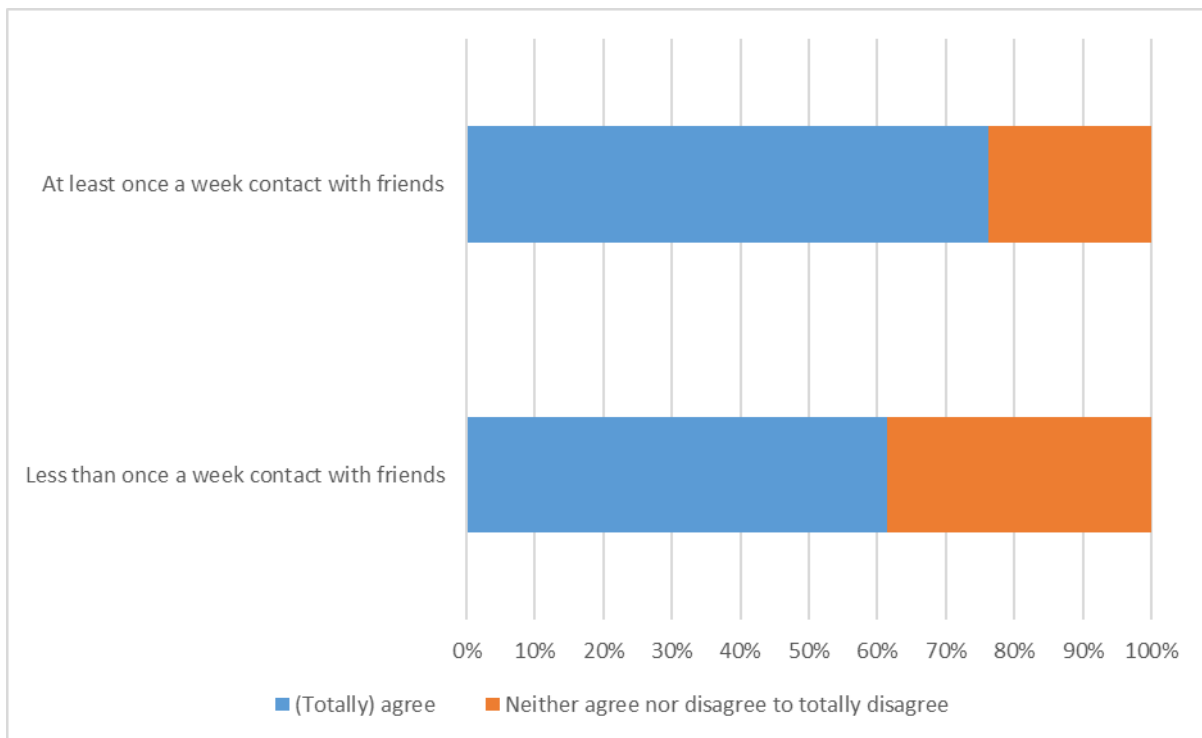
4.3.2 Trust

Older adults who think that one cannot be careful enough in trusting other people experienced less meaning in life than older adults who consider that most people can be trusted, before and after correction. Table 8 shows this for considering life worth living after correction. The percentage difference was biggest for the feeling of contribution to society. Older adults who think one cannot be careful enough felt less often that they contribute to society than people who consider most people can be trusted. Besides, people who think one cannot be careful enough considered their life less often worth living than people who think most people can be trusted. Although these findings were in line with hypothesis 4, these differences were not visible anymore in the final models (table 5 and table 6).

The difference in general trust became visible again for considering life worth living when religion and health or volunteer work and health were removed from the model together. The association with health was strongest, then with religion, and then with volunteer work. For the feeling of contribution, the difference in general trust became visible when health and volunteer work were removed from the model together. These other factors were thus stronger associated with the feeling of contribution than trust. Older adults who think most people can be trusted perceive their health more often as (very) good, they consider religion more often (very) important, and they are more often a volunteer. These characteristics are associated with more meaning in life.

Table 8 Regression results, considering life worth living and trust with correction (N: 1933)

	B	S.E.	Wald	Sig.	Exp(B)	95% C.I.for EXP(B)	
						Lower	Upper
Female	0.052	0.202	0.067	0.796	1.054	0.709	1.565
Highest education attained			0.073	0.964			
Secondary education	0.013	0.240	0.003	0.958	1.013	0.633	1.621
High education	-0.067	0.305	0.048	0.826	0.935	0.515	1.699
Standardised income			25.040	0.000			
Second quartile	1.041	0.260	16.036	0.000	2.833	1.702	4.716
Third quartile	1.205	0.291	17.130	0.000	3.336	1.886	5.902
Fourth quartile (highest)	1.117	0.319	12.283	0.000	3.055	1.636	5.704
General trust in other people: One cannot be careful enough	-0.566	0.208	7.419	0.006	0.568	0.378	0.853
75-plus	0.357	0.212	2.834	0.092	1.428	0.943	2.163
Constant	2.092	0.278	56.597	0.000	8.098		

Note: each first category was the reference category
-2 Log likelihood: 812.940   Significance: 0.000
Cox & Snell R Square: 0.019
Nagelkerke R Square: 0.053

4.4 Associations

4.4.1 General Health

General health played a substantial role in meaning in life among older adults, in line with hypothesis 5. Older adults who perceived their general health (very) good did more often agree with the statement that they consider their life worth living than older adults who perceived their health less good (table 5). The percentage difference was largest for the feeling of contribution. As is visible in figure 5, older adults who considered their general health (very) good do more often agree with the statement that they feel they contribute to society (79 percent) than older adults who considered their health less good (60 percent).

*Figure 5 Feeling of contribution by perceived general health*
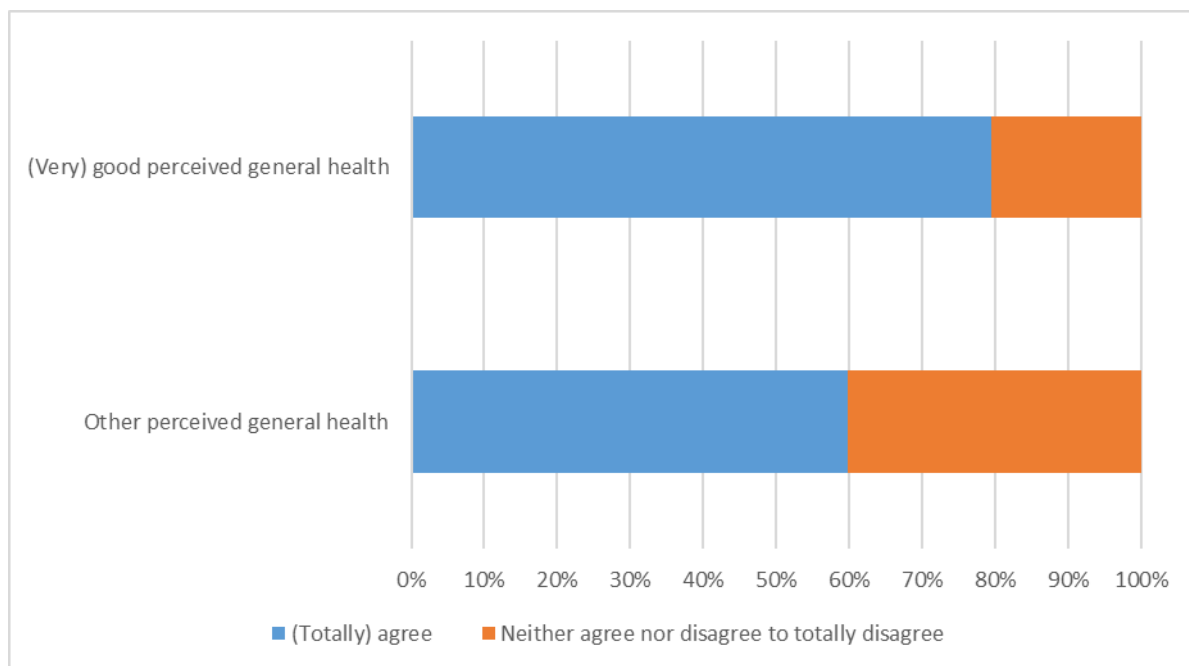
4.4.2 Religion
In line with hypothesis 6, older adults who considered religion/spirituality (very) important felt more often that they contribute to society than older adults who considered religion/spirituality less important (table 6). However, this thesis found no evidence that religion was associated with considering life worth living among older adults (table 5).

4.4.3 Volunteer Work
Older adults who are a volunteer agree or totally agree more often with the statement that they feel they contribute to society than older adults who are not volunteers (table 6). This is in line with hypothesis 7, although the association could go the other way around as well. Figure 6 shows the percentages, 84 and 62 percent respectively. Before and after correction, this also applied to considering life worth living. Older adults who are volunteers did more often (totally) agree with the statement that they consider their lives worth living than older adults who are no volunteers. However, in the final model for considering life worth living (table 5), there was no significant difference for volunteer work. The difference became visible when health, religion and general trust were removed from the model together. These variables were thus more strongly associated with considering life worth living than whether an older adult is a volunteer. The association with health was strongest, then with religion, and then with trust. Older adults who are a volunteer perceive their health more often as (very) good, they consider religion more often as (very) important, and they think more often that most people can be trusted. These factors are related to considering life worth living more often.

Figure 6 Feeling of contribution by volunteer work
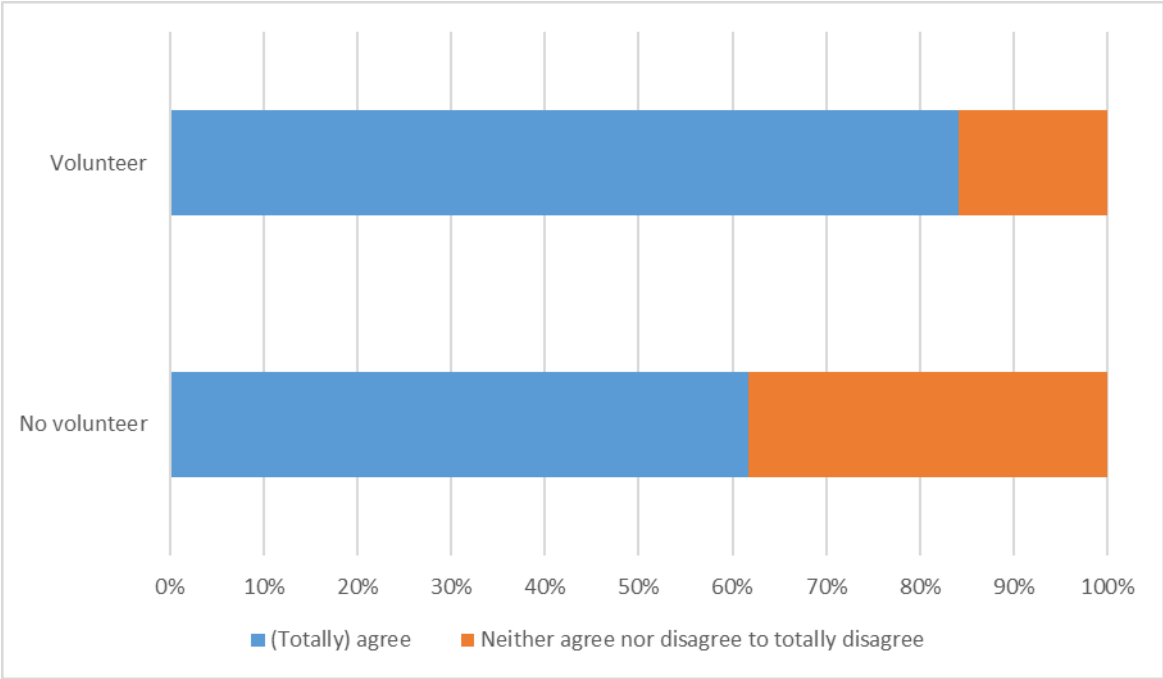
5 Conclusions and Discussion

This study looked into the perception of meaning in life among older adults (65-plus) in the Netherlands for different demographic characteristics and resources and the association with social contacts, general health, religion, and volunteer work. The most important contribution to the literature is the investigation of the association between meaning in life and social capital. In general, more than nine out of ten older adults (totally) agreed that life is worth living. Around seven out of ten (totally) agreed that they had the feeling that they contributed to society in 2020. (Very) good perceived general health and having at least once a week contact with friends as part of social capital were positively associated with both aspects of meaning in life.

Demographic characteristics and resources (age, marital status, and income) seemed to be more important for considering life worth living than for the feeling of contribution. Although marital status mattered for having a feeling of contribution, this difference was less profound. Furthermore, other demographic characteristics and resources played no role. Instead of demographic characteristics and resources, factors that can be influenced by older adults themselves such as volunteer work and the importance of religion seemed to matter more for the feeling of contribution to society. Demographic characteristics and income are more difficult to change. In the end, older adults who want to increase their meaning in life have most chance of doing so by focusing on the feeling of contribution, for example through participation in the society. Policy that aims to enhance meaning in life among older adults could focus on providing possibilities for participation, stimulate healthy behaviours and encourage people to visit their friends.

5.1 Demographic Characteristics and Resources

The hypothesis that women would experience less meaning in life than men would was not supported in this study. This is remarkable given that gender inequality is still present in the Netherlands even though the Gender Equality Index for the Netherlands is higher than the EU average (EIGE, 2022). Besides, the differences in age between 65-75 and 75-plus have apparently more to do with other variables than with age itself. Furthermore, in line with the hypothesis, older adults who are alone (divorced or widowed) considered their lives less often worth living than married older adults. These results were in line with the results for Sense of Coherence that Volanen, Lahelma, Silventoinen, and Suominen (2004) found. For the feeling of contribution, the difference was less strong for divorced older adults, because they are less often a volunteer and trust people less often. The results are in line with the Psychosocial Model of Mental Health Counselling, that losses have a negative impact on psychosocial functioning (Fry, 2001).

It was hypothesised that a high income or educational level leads to more meaning in life. This was found, but not in all cases. The most important difference related to resources was found for income and considering life worth living. A low income related to less meaning in life than a high income. This was in line with other research (Ward & King, 2016), although they also found that the association becomes less strong when happiness is taken into account. There was no difference found for education in association with considering life worth living. With regard to the feeling of contribution, the differences were explained by other variables.

5.2 Social Capital

Previous research found an association between the frequency of social contacts and Sense of Coherence (of which meaningfulness is a part) (Wolff & Ratner, 1999) and a positive association between social contacts and meaningfulness (Van Beuningen, 2018). The findings of this research were in line with that. Having at least once a week contact with other family members, friends, or neighbours (bonding social capital) mattered for meaning in life, in line with the hypothesis. The hypothesis was based on the Socioemotional Selectivity Theory, where the emotional goal is found in relationships associated to meaning in life. This theory was beneficial in constructing the hypothesis (Carstensen et al., 1999). In the final model, the frequency of contact with friends remained significant. For contacts with other family members and neighbours, the differences disappeared, in most cases because of the frequency of contacts with friends in the model. The hypothesis that this would be a result of health was not confirmed. A possible explanation for this finding could be the *frequency* of contact is more important than *with whom* older adults have social contact when it comes to bonding social capital at the micro-level. However, this contradicts the finding of earlier research that married older couples found relationships most important for meaning in life and these relationships always often concerned relationship with family members (not friends) (Ebersole & DePaola, 2002).

Trusting other people as part of social capital was related to more meaning in life as expected, but not in the final model. Other variables such as religion, health, and volunteer work also played a role. It was expected that health would make the association disappear, but not that religion and volunteer work played a role too.

Furthermore, the results of a study by Stavrova and Luhmann (2015) in the United States suggest that meaning in life and social connection with other people could be related to each other in both directions. They differentiated between connection with family, friends, spouse / partner and the community. When they took into account life satisfaction, only the connection with the community (belonging) led to more meaning in life ten years later (Stavrova & Luhmann, 2015). Future research could look into the association between the frequency of social contact and meaning in life the other way around and investigate whether life satisfaction changes the association.

5.3 Health, Religion, and Volunteer Work

The Hierarchic Model of Meaning about the influence of meaningfulness on health was relevant as input for the hypotheses even though it investigated the direction in the opposite direction. The results of this study were in line with the hypothesis about health. (Very) good perceived general health is positively associated with meaning in life. The result is also in line with a literature review, which found that more meaning in life leads to better health physically, although the direction of the association cannot be determined (Roepke et al., 2013). This association can also take place through impact on behaviour. Meaning in life can impact behaviour which is positive or negative for health and via that way influence physical health (Roepke et al., 2013). Besides, general health was strongly associated with meaning in life. Other research found that relationships with other humans are most important for meaning in life among older adults (Ebersole & DePaola, 2002; Hupkens et al., 2018), although they also mention other things like health and religion (Hupkens et al., 2018). Besides, health played a

role in the disappearance of several associations, underlining the importance of perceived general health.

The hypothesis that the importance of religion is positively associated with meaning in life was partly confirmed. The positive association was only found for the feeling of contribution to society. This positive association is in line with the literature that describes religion as a contributing factor to (more) meaning in life (Galek, Flannelly, Ellison, Silton, & Jankowski, 2015; Krause & Hayward, 2012) (see also Hood, Hill, and Spilka (2009)). Besides, it is in line with the Meaning System Framework arguing that religion can influence goals, beliefs, and meaning in life (Park, 2007). Fletcher (2004) also mentions that religion can influence meaning in life but adds that the role of religion might differ depending on the specific belief system people have. The results of this thesis were not distinguished according to different belief systems. Future research could include this and look whether there are differences between the belief systems when it comes to their association with meaning in life.

Being a volunteer as an older adult was positively associated with meaning in life. However, for the feeling that life is worth living, this association disappeared in the final model. The hypothesis was thus partly confirmed. The positive association is in line with the literature on meaningfulness (Schnell & Hoof, 2012; Sherman, Michel, Rybak, Randall, & Davidson, 2011). It is not in line with the Symbolic Interactionist Theory, arguing that an increase in social roles negatively affects emotional well-being and health (Thoits, 2012). Yet it is in line with Role Accumulation Hypothesis, which argues the opposite: the more roles people have, the more meaning in life and purpose people have (Thoits, 2012). However, Schnell and Hoof (2012) found that it seems that a certain amount of time doing volunteer work is needed for this positive contribution. A current limitation of the study is that the amount of volunteer work is not taken into account. This would be a recommendation for future research. Another possibility is to investigate the association the other way around. Could it be that older adults who feel that they contribute to society engage more often in volunteer work? Schnell and Hoof (2012) indicate this as a possibility. A meaningful life could increases the probability of doing volunteer work (Schnell & Hoof, 2012). It is thus not yet clear in which way(s) the association works. Future research could investigate this further.

5.4 Validity
The extent to which the concepts in this study measure what they intent to measure, the *content validity,* is sufficient. This is because the complex concepts meaning in life and social capital are measured with different aspects. Meaning in life was measured through two aspects, which allowed for a broad view on the concept. Meaning in life has to do with considering life worth living *and* having a feeling of contribution. The same applies to the concept social capital. The measurement of social capital with trust and participation allows for a broader view. Subsequently, participation was divided into three sections (other family members, friends, and neighbours), which elaborated the measurement.

Besides, there is the question whether the found associations are present in reality, the *internal validity.* This research cannot make causal claims, because the direction in which the associations work cannot be determined and there could be factors that influence both the dependent and the independent variables. An example of a confounding factor could be that

having a job or not is associated with meaning in life. Previous research already indicated that work could play a role in the differences in the feeling of contribution between older adults (75-plus) and younger age groups from age 25 onwards (Coumans & Van Muiswinkel, 2022). This could be a factor to include in future research. Besides, other factors such as the time of the day or personal circumstances could influence the results. Still, the associations are corrected for many variables, which makes the internal validity sufficient, even though it is not high.

In terms of generalisation, the *external validity*, the sample size is sufficient. This made the results generalizable from the study population to the population of the Netherlands. Moreover, the weights used in this study are elaborated (CBS, 2022b), which contributes to this generalizability to the whole country. This is relevant for the external validity. Still, when the sample size would have been larger, the external validity would have been higher. Moreover, the generalisability stops at the national level, as in other countries there could be different factors that are associated with meaning in life. Separate studies are needed to compare meaning in life across countries.

5.5 Limitations and Future Research

Even though older adults age 65 and above were an interesting group to research, it would have been interesting to conduct separate analyses for older adults age 75 and above. Unfortunately, the dataset had too few respondents in this age category to be able to split out further. Even with 65-plus, 'never married' as a category of the variable marital status could not be shown due to too little cell count. Even though most variables could be shown, future research could focus the survey specifically on older adults from age 65 onwards. This would ensure enough respondents to be able to show 75-plus separately besides 65-plus. Besides, future research could use the entire Social Capital Index as described by Van Beuningen and Schmeets (2013) to investigate meaning in life among older adults in the Netherlands. Additionally, it would have been easier to interpret the results for general trust in other people if the category 'one cannot be careful enough' would have been taken as the reference category instead of 'most people can be trusted'. For volunteer work this was done, no volunteer is the reference category. This makes it easier to see what being a volunteer contributes to meaning in life.

Still, the data and methods allowed sufficient possibilities to answer the research question. Even though it would have been interesting to research 'never married' older adults, this was not directly part of the research questions. There were enough data to answer both sub questions: considering life worth living and having a feeling of contribution. In terms of the investigated associations, it would have been interesting to be able to research position in the household besides marital status. Yet due to the mentioned theoretical multicollinearity and the low cell count for the majority of the categories this was not possible. For the other associations there were enough data and the methods allowed for thorough investigation of associations that (dis)appeared in the models.

Furthermore, the influence of the coronavirus pandemic cannot be made explicit. Even though the weights took into account in which month the survey was conducted (CBS, 2022b), there were only two months without many corona measures in 2020. Besides, there was no other year available to compare the results with due to the ad-hoc module. This possible influence should

be taken into account when looking at the results. Therefore, it would be useful to conduct this research again in post corona time to be able to compare the results.

Besides investigating differences over time, it would be interesting to investigate differences between countries. Is the experience of meaning in life among older adults in the Netherlands similar to the experience of older adults in other countries within Europe and beyond? It would be interesting to investigate whether these differences are related to country characteristics such as religion. For example, in 2019, slightly more than half of the Dutch population did not consider themselves part of a denomination or ideological group (CBS, 2020). Besides, there is great diversity in religious groups (CBS, 2020). Do other countries differ and what effect does this have on meaning in life?

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Appendix

1 List of Abbreviations
Table 9 List of abbreviations

Abbreviation	Description
CBS	Centraal Bureau voor de Statistiek (Statistics Netherlands)
C-Tables	Custom Tables
EU	European Union
GDP	Gross Domestic Product
SPSS	Statistical Package for the Social Sciences
SSW Survey	Social Coherence and Well-being Survey
UG	University of Groningen
VIF	Variance Inflation Factor

2 Glossary
Table 10 Glossary

Concept	Description
Gender equality	Equality between men, women, and others in endowments, economic opportunities, and agency (World Bank, 2011)
Hierarchic Model of Meaning	Model about the influence of meaningfulness on health. When people experience meaningfulness, it is more likely that they participate in (subsequently) other healthy behaviours, setting goals, acting according to these goals, and this in turn influences their perceptions (Schnell, 2021)
Meaning in life	The subjective experience of an individual about his/her life that is morally approved beyond the person itself and has to do with having a purpose, a feeling of contribution, an understandable life with a story with order and coherence, where transcendence and connection with other people are important
Meaning of life	Existential question about the more objective meaning of life on earth in general (Derkx et al., 2020; Hupkens et al., 2018)
Meaning System Framework	The meaning system of people consists of global beliefs and goals, and meaning in life. Religion is an important part of the meaning system because it influences goals, beliefs, and meaning in life (Park, 2007)
Mixed Mode Design	Approaching respondents using different methods. For example, starting with an

	internet survey and using telephone interviews or in person interviews when there is no response (De Regt & Adriaanse, 2021)
Older adults	People age 65 and above, living in the Netherlands
Psychosocial Model of Mental Health Counselling	Several losses such as loss of income and social support negatively impact psychosocial functioning (Fry, 2001)
Role Accumulation Hypothesis	More role-identities would mean, among others, more meaning in life and more purpose, which in turn is good for both physical and mental health (Thoits, 2012)
Social capital	Bonding social networks on the micro-level that have mutual benefit and can function as a resource for people to achieve their goals, reflected in participation (informal relationships) and trust (average trust in other people)
Socioemotional Selectivity Theory	In different times of life people have different goals which they try to fulfil with social contacts with different people (Carstensen et al., 1999)
Stratified Two-stage Design	First taking a sample of municipalities (or other units) and then taking a sample within these municipalities (or units) (De Regt & Adriaanse, 2021)
Symbolic Interactionist Theory	More social roles makes conflict between these roles more likely, which would negatively affect emotional well-being and health (Thoits, 2012)