



---

# SUCCESSFUL AGING PERCEIVED BY AGE GROUPS 20-30 AND 50-65 YEARS OLD IN THE NETHERLANDS

---

Bachelor's Thesis



RUTGER HEIJNEN - S3794229  
FACULTY OF SPATIAL SCIENCES  
BA Human Geography and Planning

## Table of Contents

<b>Abstract</b> .....	2
<b>Introduction</b> .....	3
<b>Theoretical framework</b> .....	5
Physical Health .....	5
Cognitive functioning .....	6
Social engagement .....	6
Mobility .....	7
Conceptual model .....	7
<b>Methodology</b> .....	8
<b>Results</b> .....	9
Descriptive statistics .....	9
Physical Health .....	10
Cognitive Functioning.....	11
Social Engagement .....	12
Mobility .....	13
<b>Discussion</b> .....	14
Main results .....	14
Conclusion .....	15
Strengths .....	16
Weaknesses .....	17
Recommendations.....	18
<b>References</b> .....	19
<b>Appendices</b> .....	22
Appendix A: Survey.....	22
Appendix B: SPSS .....	29

## Abstract

Successful aging, defined as the maintenance of physical, cognitive and social functioning throughout the aging process, leading to a high quality of life in later years is becoming increasingly important in today's aging societies. This research paper aims to look at these factors, including mobility, and see if the perceived importance of these factors for successful aging differs between the age groups of 20-30 (N=47) and 50-65 (N=31), in the Dutch population. By doing so, it tries to fill the knowledge gap on age-specific perception on successful aging, for the Dutch age groups of 20-20 and 50-65. For this research, a survey was conducted, after which Mann-Whitney U tests were run to see if there were any differences between these two groups. This research has revealed distinct differences in the perception of successful aging between the younger and older age groups within the Dutch population. The younger age group (20-30) places a higher emphasis on physical health, social engagement, and mobility as essential factors for successful aging, whereas cognitive functioning was seen as equally important across both age groups. These conclusions can help policymakers and healthcare make a distinction between short-term and long-term plans to meet the specific needs and expectations of the different age groups.

## Introduction

Successful aging is becoming an increasingly relevant concept in the worldwide problem of aging populations. According to Rowe and Kahn (1997), successful aging refers to the maintenance of physical, cognitive, and social functioning throughout the aging process, leading to a high quality of life in later years. They state that three components contribute to successful aging; avoiding disease and disability, maintaining high physical and cognitive functions, and continuing engagement with surrounding life. The global increase of aging populations also increases the research into the concept of successful aging, to promote mental and physical health in older adults, as well as an improvement of quality of life for this group. In the Netherlands, among many countries, the aging population is becoming a challenge, with projections estimating that 25% of the Dutch population by 2050 will be aged 65 years or older (CBS, 2022). Understanding how Dutch people perceive successful aging is crucial in developing structures and intervention that promote and enable older adults to age successfully. Enabling older adults to age successfully can result in a reduced strain on the healthcare costs and support systems, as well as a higher likeliness in contributing positively to society by being able to work for longer or engage in their communities (Kim & Moon, 2002; Stuck, et al., 1999), all helping in the constraining factors of the aging population challenge. Also, understanding the perception of Dutch people regarding successful aging has increasing social relevance. The demographic transition towards an increasing group of older adults has social and economic consequences for society, for instance in a changing social structure of increased healthcare costs (Harper, 2014). Understanding perceptions of successful aging could help tailor healthcare services to better meet the needs of older adults. For example, if physical health is viewed as particularly important, then ensuring access to physical therapy and exercise programs might be a priority. Or, if social engagement is highly valued, then mental health services and community programs that combat loneliness and isolation could be emphasized. Concluding, the enhanced understanding of the perception of successful aging can guide decision-making across different domains, from healthcare to social policy, aiming for an age-inclusive society where older adults can continue to contribute and live fulfilling lives.

Even though there is some research done on the perception of Dutch people on successful aging (Lette, et al., 2017), this available research focusses on specific population groups such as community dwelling adults (Lette, et al., 2017). Despite successful aging being a multidimensional concept, the perception of this concept is largely subjective and may vary greatly between cultures and individuals (Lette et al., 2017). Because of this, it is important to examine how people perceive successful aging and what factors may influence these perceptions, especially in specific cultural contexts such as the Dutch population. These specific cultural attributes of the Dutch culture include the perceived importance of family relationships, active lifestyle and independent living (Dykstra, 2009; Verbeek-Oudijk, et al., 2014; Weggemans, et al., 2018).

Rowe and Kahn's concept of successful aging largely provides the theoretical framework for this study, as it defines three of the four main concepts used for looking at perceived successful aging. The fourth concept is mobility, as mobility has emerged as a marker for functional ability and overall health for older adults (Cesari, 2011). Together, these four concepts make up the theoretical framework. This framework provides an understanding of successful aging, which helps the study in measuring the perception of Dutch people on successful aging. Furthermore, by helping to identify how Dutch people perceive successful aging, policymakers and health professionals can define and substantiate interventions to improve the quality of life by older adults, and more importantly, the development of programs to promote healthy aging. Previous research has already highlighted the positive effect of promoting social engagement, physical activity and environmental modifications (Chen, et al., 2018).

While there is body of research on successful aging, there is limited research on how the target groups of the ages 20-30 and 50-65 in the Netherlands perceive this concept. Particularly with regards to the components physical health, cognitive functioning, social engagement and mobility. This study aims to address this research gap by studying Dutch people's perception of successful aging, and by doing so, tries to provide insights that can help policy makers developing programs promoting successful aging. Another research gap that this research is trying to fill in, is the gap on age specific differences, something that has not been researched yet. In this research, two groups are being used. Group 1, for the ages 20 to 30, and Group 2, for the ages 50 to 65. By making a distinction between these groups, it is possible to make different interpretations between long- and short-term implementations. For the first age group, most implementations will only have effect in the long term, while the second group has reached the age of an older adult much sooner, making implementations in the short term more necessary.

For this research, the following research question is proposed:

How do different age groups of the Dutch population, 20-30 and 50-65, perceive successful aging, as measured by their perception of importance for the concepts physical health, cognitive functioning, social engagement and mobility?

## Theoretical framework

Successful aging has been defined as “the attainment of an optimal level of functioning across multiple domains, including physical, cognitive, and emotional functioning, as well as social connectedness and engagement in meaningful activities” (Rowe & Kahn, 1997, p. 37). Throughout the years, many definitions of this concept have been defined (Holstein & Minkler, 2003).

In recent years, successful aging has gained increasing attention, due to the growing share of older adults in the aging societies around the globe, and because of that an new need to promote health and well-being among older adults (Liu & Guo, 2018). As stated in the Background, the concept of successful aging used to measure the perception of the Dutch population is a combination the concepts derived from Rowe and Kahn (1997) and Cesari (2011) . Rowe and Kahn used the concepts of physical health, cognitive functioning and social engagement. This definition of the concept is been widely used throughout academic research, and its popularity testifies to its utility. Cesari later showed the importance of the concept mobility as a marker for functional ability and overall health for older adults, which adds another layer to this combined definition.

### Physical Health

Physical health is one of the critical components of successful aging. It refers to the ability to maintain physical functioning and performance as one ages (Bowling et al., 2017). According to Gobbens et al. (2012) physical health is a multidimensional construct that includes factors as chronic conditions, functional limitations, and physical levels. Research has shown a strong relation between physical health and individuals’ perception on what they need for successful aging. For example, Jeste et al. (2013) concluded that older adults who rated their physical health better, were more likely to identify physical health as a key component of successful aging. In addition to this, Kim and Lee (2017) concluded that older adults who rated their physical health as poor, reported a need for better health-related services in order to age successfully, or shortly stated, a better physical health. How people perceive the importance of successful aging can be influenced by various factors, such as self-efficacy. This refers to an individual’s belief in their ability to perform a specific task or behaviour. Research by Luszczynska et al. (2013) showed that older adults with higher levels of self-efficacy in physical health are more likely to engage in health-promoting behaviour and see physical health as a key factor for successful aging.

Another influential factor on perceived importance of physical health for successful aging is social support. Older adults with strong social support network are more likely to prioritize their physical health, as a way to maintain independence and quality of life (Chang & Hayslip, 2015; Henning-Smith et al., 2019). Finally, ageism can play a role in the perceived importance of physical health for successful aging. Discrimination towards older adults and negative stereotypes can lead to lower expectations for physical health and may lead to older adults to internalize negative beliefs about their physical abilities (Levy, 2009).

## Cognitive functioning

Cognitive functioning is seen as an important determinant of successful aging, influencing independence, decision-making capacity, and overall quality of life (Depp & Jeste, 2006). However, people's culture, personal experiences and the society they live in, can have a great impact on how people perceive successful aging. Cultural norms and societal values significantly influence the perception of cognitive functioning's importance in successful aging. Societies that value intellectual pursuits and lifelong learning may perceive cognitive functioning as a crucial aspect of successful aging (Hedden & Gabrieli, 2004). This perception is underpinned by societal norms that equate intellectual vitality with successful aging, emphasizing the role of cognitive functions in maintaining independence and productivity.

Personal experiences also shape the perception of cognitive functioning's importance in successful aging. Individuals who have observed the effects of cognitive decline in others or experienced the benefits of maintaining cognitive abilities may perceive cognitive functioning as a critical factor in successful aging (Salthouse, 2012). Conversely, those who have not encountered significant cognitive challenges may perceive cognitive functioning as less crucial to successful aging. Furthermore, understanding the link between cognitive functioning and health outcomes can have a great impact on an individual's perception of its importance. Many individuals recognize the link between cognitive functioning and various health outcomes, including mental health, physical health, and life satisfaction (Salthouse, 2012). This recognition may lead them to perceive cognitive functioning as a vital aspect of successful aging.

Nonetheless, it is important to acknowledge that the perception of cognitive functioning's importance in successful aging is not universal. Variations exist within and between societies, reflecting individual differences, cultural diversity, and varying life experiences. In conclusion, societal norms, personal experiences, and understanding of its health impact shape the perception of cognitive functioning's importance in successful aging. Despite variations, cognitive functioning is often perceived as a crucial component of successful aging, contributing to independence, productivity, and life satisfaction.

## Social engagement

The belief that active social engagement is fundamental to successful aging is a widely held perspective in global medical studies, predominantly due to its significant influence on mental and physical health outcomes, as well as overall life satisfaction (Rowe & Kahn, 1997). However, individuals' perceptions of its importance can vary greatly, shaped by factors such as personal experiences and societal norms, leading to differing levels of emphasis placed on this dynamic aspect of aging. In societies that value communal relationships and group activities, social engagement is often seen as a key ingredient for successful aging (Berkman et al., 2000). Such a perception is amplified by societal norms and values that underscore the importance of emotional support derived from social networks, providing a sense of belonging and contributing to overall life satisfaction. Conversely, those who have had negative experiences with social interactions or prefer solitude might not regard social engagement as highly.

Understanding the beneficial impacts of an active social life, such as improvements in physical health, cognitive function, and mental health (Umberson & Karas Montez, 2010), can help individuals to better appreciate its role in successful aging. However, it is also crucial to recognize that perceptions of its importance in successful aging can vary greatly, influenced by individual differences, cultural diversity, and unique life experiences. This variation in perception across different societies globally, both past and present, can impact individuals' mental and physical wellbeing as well as overall life satisfaction, and should not be overlooked.

## Mobility

The final component of the theoretical framework, mobility, encompassing an individual's ability to move and participate in daily activities, is considered a vital determinant of successful aging, contributing to overall well-being and quality of life (Chodzko-Zajko et al., 2009; Gobbens et al., 2012). In the Dutch context, mobility is an important concept to add to the Rowe and Kahn model (1997). By retaining their mobility, whether it is being able to ride a bike, walk or use public transport, older adults in the Netherlands can continue to participate in daily life. This can lead to retained physical health, cognitive functioning and social engagement (Cesari, 2011). However, individual and societal perceptions of its importance in successful aging can differ considerably, influenced by personal experiences, societal context, and built environment.

Studies have indicated that older adults often perceive mobility as a crucial factor for successful aging, associating it with physical independence (Kim & Lee, 2018; Ní Mhaoláin et al., 2018). This perception is underpinned by personal experiences and societal norms that value independence and active participation in daily activities. The ability to move freely allows individuals to maintain their lifestyle, engage in community activities, and visit loved ones, contributing to a sense of autonomy and vitality. However, the perception of mobility's importance in successful aging can be negatively influenced by individuals' assessment of their own mobility.

Research indicates that older adults who perceive their mobility as inadequate are often less likely to engage in physical activity, which could subsequently lead to a further deterioration in their mobility over time (Webber et al. 2010). This finding suggests that negative self-perception of mobility could undermine its perceived importance in successful aging. Furthermore, the built environment plays a significant role in shaping perceptions of mobility's importance in successful aging. Webber et al. (2010) have highlighted that factors such as the availability of public transportation and the quality of sidewalks can significantly influence older adults' mobility, subsequently impacting their perceptions of successful aging. This underscores the considerable role that environmental factors play in shaping perceptions of the importance of mobility for successful aging. In conclusion, the perception of mobility's importance in successful aging is influenced by personal experiences, societal context, and the built environment. Despite variations, mobility is often perceived as a critical component of successful aging, contributing to independence, active participation in daily activities, and overall well-being.

## Conceptual model

These four concepts together make up the theoretical framework for this research, and are the key components of the conceptual model in figure 1.

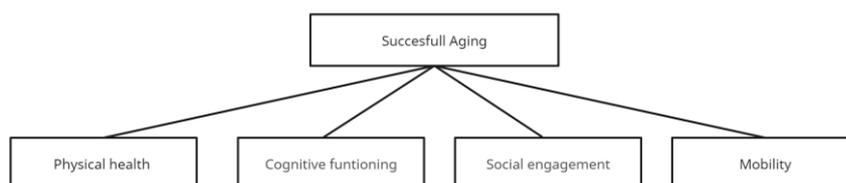


Figure 1 Conceptual model

## Methodology

In exploring the research question, 'How do different age groups of the Dutch population, 20-30 and 50-65, perceive successful aging, as measured by their perception of importance for the concepts physical health, cognitive functioning, social engagement, and mobility?' a cross-sectional survey design was employed (Appendix A). This design was chosen as it enabled gaining insights into participants' perceptions at a single point in time, offering a snapshot view of the different age groups' perceived importance of the mentioned factors in successful aging.

The first 10 participants for this study were selected through a process of convenient sampling, and recruited by means of WhatsApp and personal distribution. After this, the first group of respondents distributed the survey amongst their own social circle to exclude the possibility that all respondents are part of the researchers social circle. This method has proven to be effective to target these specific age groups. This sampling strategy was appropriate as it ensured each individual within the target population had an equal chance of being selected, minimising the risk of sampling bias. The sample comprised of 78 individuals belonging to two age groups, 20-30 (N=47) and 50-65 (N=31), all of whom resided in the Netherlands. It is important to note that not all the respondents answered all of the survey questions, leading to differentiated number of responses per question. Even though this was the case, the other survey questions given were still deemed appropriate to use.

The study did not discriminate based on other demographic variables like sex, occupation, or socioeconomic status, therefore ensuring a wide range of responses. Note that not every individual has answered the whole survey, so number of respondents may vary. However, for this study, older adults above 65 years old are not included. Because the recruitment process have showed to be insufficiently effective in recruiting older adults above 65 years old, and the researcher's efforts in further recruiting this age group also showed to be not effective, the choice has been made to exclude this specific age group for this research. The impact of this are discussed in the chapter 'Weaknesses'.

Data was collected through an anonymous survey. The survey comprised of questions relating to participants' perception of the importance of physical health, cognitive functioning, social engagement, and mobility in successful aging (Appendix A). Responses were measured on a Likert scale, ranging from 1 (Not at all important) to 5 (Extremely important). This ordinal scale was deemed appropriate for capturing participants' nuanced opinions and attitudes towards the factors of interest. The ethical considerations of the study were at the forefront of the study design. Participation in the study was voluntary, with participants having the right to withdraw at any point without any repercussions. To maintain anonymity, no personally identifiable information was collected. Data was securely stored and accessed only by the researcher involved in the study.

The data analysis for this study involved the use of the non-parametric Mann-Whitney U test. This test was chosen because it is particularly effective in assessing whether two independent samples were selected from populations having the same distribution, a requirement which aligns with the study's objective of comparing perceptions between two distinct age groups. Furthermore, the test was appropriate for the ordinal nature of the Likert scale responses, while an independent samples t-test for instance, requires interval or ratio data. In terms of the quality of the data, several strategies were adopted to ensure its reliability and validity. The clarity and simplicity of the survey questions minimised the risk of misunderstandings and misinterpretations, contributing to the reliability of the responses. The validity of the data was supported by the use of a standardised Likert scale and the careful selection of questions directly relevant to the research question (Appendix A).

## Results

### Descriptive statistics

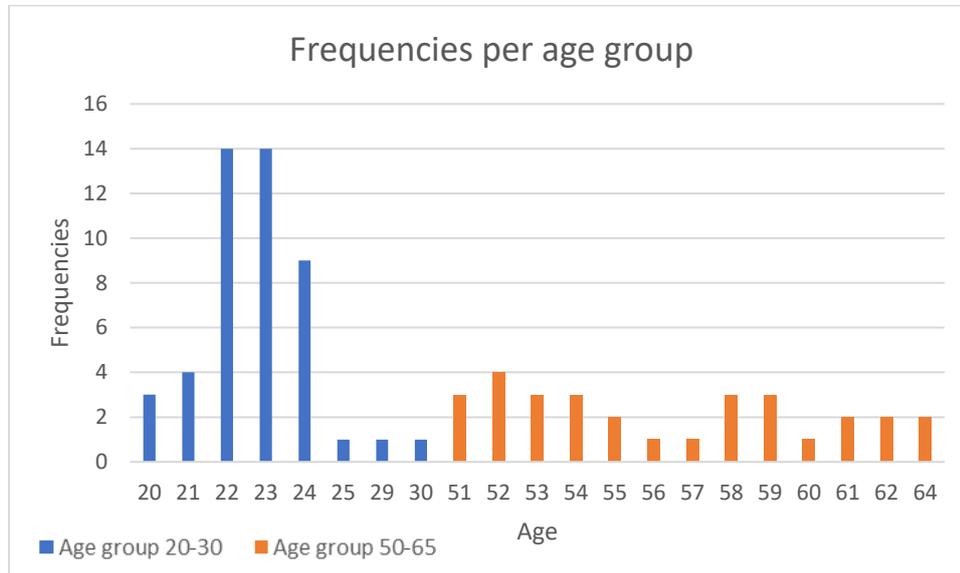


Figure 2. Frequencies per age

In Figure 2 the frequencies of the age of the respondents are shown. The data consists of two age groups: 20-30 years, shown in blue, and 50-65 years, shown in orange. The age group of 20-30 years has a total of 47 respondents, has a mean age of 23,76, and is bimodal, with ages 22 and 23 both occurring 14 times. The age group of 50-65 has a total of 31 respondents, with a mean age of 58,20, and has four modes, namely 52, 53, 59 and 60, with 3 individuals each.

## Physical Health

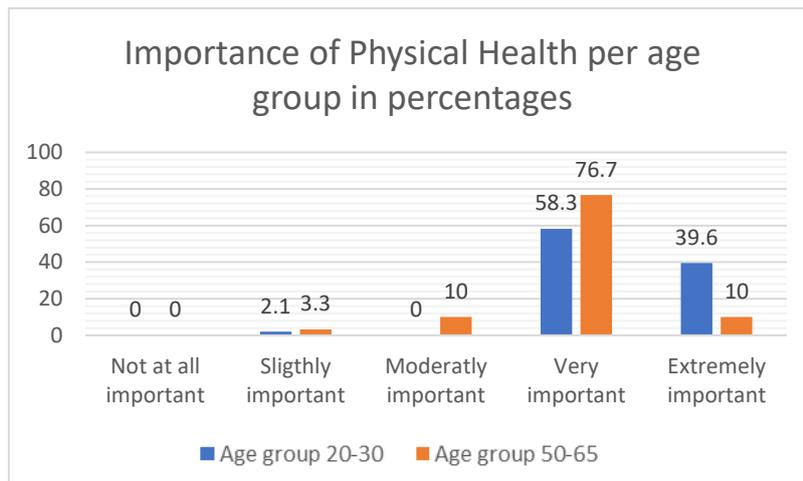


Figure 3 Distribution perception Physical Health

In figure 3 the distribution of perception of importance for the concept of Physical health is shown in percentages per age group. This concept has been operationalized in the following survey question (Appendix A, Q3): “To what extent do you believe that good physical health is an important aspect of successful aging?” with the answers ranging on a Likert scale from 1 (Not at all important) to 5 (Extremely important).

A Mann-Whiney U test was conducted in SPSS, to examine whether there is a significant difference between perceived importance of physical health for successful aging between age group 20-30 (N=46) and 50-65 (N=31). This test revealed that there is significant difference between the two age groups, being significant at a 5% level with a p-value of 0.022 (Table 2). For age group 20-30, the mean rank is 43.01, and the mean rank for group 50-65 is 33.05 (Table 1). These findings suggest that the younger age group perceive physical health as more important than the older age group.

Table 1. Ranks Physical Health

Age Groups	N	Mean Rank	Sum of Ranks
Age Group 20-30	46	43,01	1978,50
Age Group 50-65	31	33,05	1024,50
Total	77		

Table 2. Mann-Whitney U test Physical Health

Physical Health	
Mann-Whitney U	528,500
Wilcoxon W	1024,500
Z	-2,284
P value (2-tailed)	0,022

## Cognitive Functioning

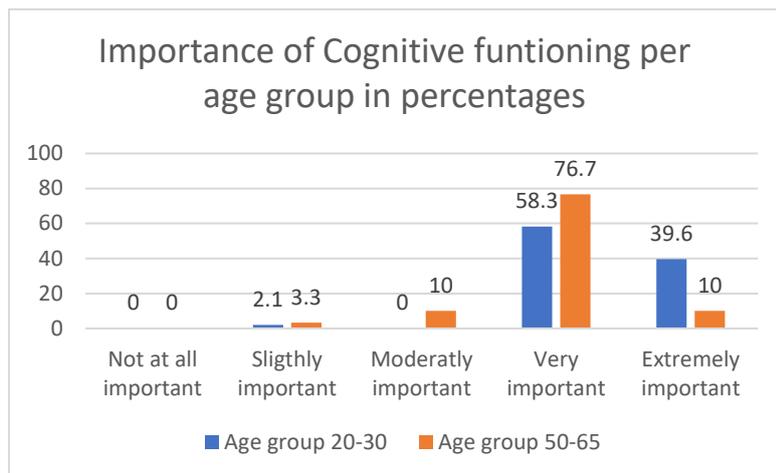


Figure 4. Distribution perception Cognitive functioning

In figure 4 the distribution of perception of importance for the concept of Cognitive functioning is shown in percentages per age group. This concept has been operationalized in to the following research questions (Appendix A, Q9): “To what extent do you believe that good cognitive functioning is an important aspect of successful aging?” with answers ranging on a Likert scale from 1 (not at all important) to 5 (extremely important).

A Mann-Whiney U test was conducted in SPSS, to examine whether there is a significant difference between perceived importance of cognitive functioning for successful aging between age group 20-30 (N=42) and 50-65 (N=30). The test revealed that there is no significant difference between the two age group, being insignificant at a 5% level with a p-value of 0.326 (Table 4), which suggests that both age groups perceive cognitive functioning as equally important factors regarding successful aging. This non-significance is further substantiated by the mean ranks, where the mean rank for the age group 20-30 shows 38.18 and for age group of 50-65 34.15 (Table 3). These relatively close values point towards a shared perception of cognitive functioning.

Table 3. Mean ranks Cognitive Functioning

Age Groups	N	Mean Rank	Sum of Ranks
Age Group 20-30	42	38,18	1603,50
Age Group 50-65	30	34,15	1024,50
Total	72		

Table 4. Mann-Whitney U test Cognitive Functioning

Cognitive Functioning	
Mann-Whitney U	559,500
Wilcoxon W	1024,500
Z	-,983
P value (2-tailed)	0,326

## Social Engagement

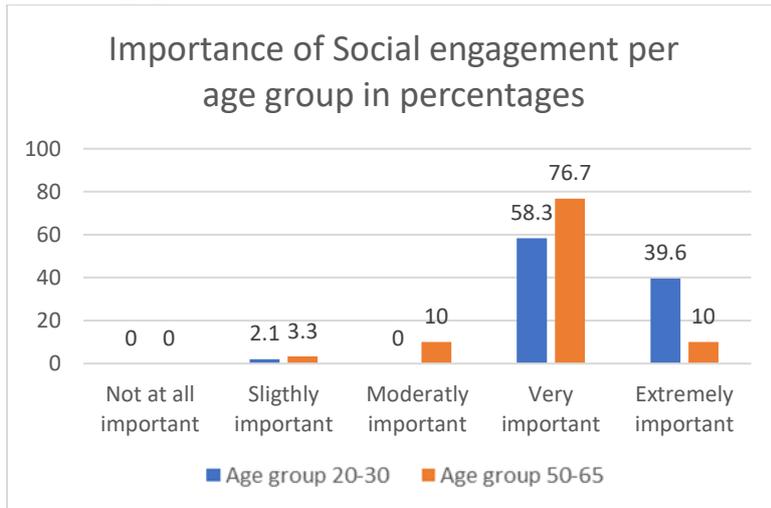


Figure 5. Distribution perception of Social engagement

In figure 5 the distribution of perception of importance for the concept of Social engagement is shown in percentages per age group. This concept has been operationalized in to the following research questions (Appendix A, Q14): “To what extent do you believe that good social engagement is an important aspect of successful aging?” with answers ranging on a Likert scale from 1 (not at all important) to 5 (extremely important).

A Mann-Whiney U test was conducted in SPSS, to examine whether there is a significant difference between perceived importance of social engagement for successful aging between age group 20-30 (N=44) and 50-65 (N=30). This test revealed that there is a statistical significant difference between the two age groups, being significant at a 5% level with a p-value of 0.024 (Table 6) For age group 20-30, the mean rank is 41.74, and the mean rank for group 50-65 is 31.28 (Table 5). These findings suggest that the younger age group perceive social engagement as more important than the older age group.

Table 5. Mean ranks Social Engagement

Age Groups	N	Mean Rank	Sum of Ranks
Age Group 20-30	44	41,74	1836,50
Age Group 50-65	30	31,28	938,50
Total	74		

Table 6. Mann-Whitney U test Social Engagement

Social Engagement	
Mann-Whitney U	473,500
Wilcoxon W	938,500
Z	-2,255
P value (2-tailed)	0,024

## Mobility

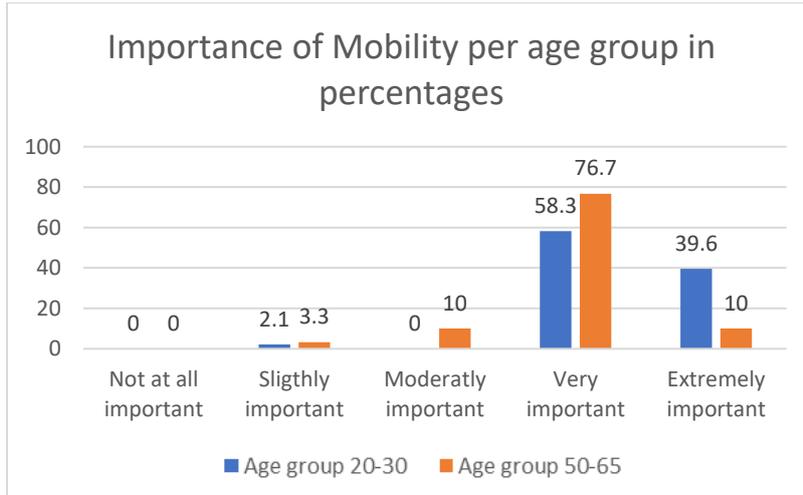


Figure 6. Distribution perception of Mobility

In figure 6 the distribution of perception of importance for the concept of Mobility is shown in percentages per age group. This concept has been operationalized in the following survey question (Appendix A, Q14): “To what extent do you believe that good mobility is an important aspect of successful aging?” with the answers ranging on a Likert scale from 1 (Not at all important) to 5 (Extremely important).

A Mann-Whiney U test was conducted in SPSS, to examine whether there is a significant difference between perceived importance of mobility for successful aging between age group 20-30 (N=37) and 50-65 (N=30). This test revealed that there is significant difference between the two age groups, with a p-value of 0.000, indicating a significance at 1% (Table 8). For age group 20-30, the mean rank is 40.77, and the mean rank for group 50-65 is 25.65 (Table 7). These findings suggest that the younger age group perceive mobility as more important than the older age group.

Table 1. Ranks Mobility

Age Groups	N	Mean Rank	Sum of Ranks
Age Group 20-30	37	40,77	1508,50
Age Group 50-65	30	25,65	769,50
Total	67		

Table 8. Ranks Mobility

Mobility	
Mann-Whitney U	304,500
Wilcoxon W	769,500
Z	-3,643
P value (2-tailed)	,000

## Discussion

The purpose of this research was to examine the perceived importance of four key factors for successful aging . Physical health, cognitive functioning, social engagement, and mobility, for two age groups (20-30 and 50-65) within the Dutch population. For this, the following research question was proposed; 'How do different age groups of the Dutch population, 20-30 and 50-65, perceive successful aging, as measured by their perception of importance for the concepts physical health, cognitive functioning, social engagement and mobility'. The Mann-Whitney U test was used to assess the significance of the measured differences in perceptions between the two age groups.

### Main results

For physical health, the data revealed a statistically significant difference in the perceived importance between the two age groups, with the younger age group (20-30) attributing greater importance to physical health for successful aging compared to the older age group (50-65). A possible explanation for this could be that the younger age group is at a life stage where they may be more engaged in physical activity and are more conscious about their physical appearance than the older age group. This is explained by Martin, et al. (2015), who suggested that as individuals age, they are likely to place less emphasis on physical health, and Gualdi-Rosso, et al. (2022), who concluded that young adolescents are often more concerned about their physical appearance, which could be tied to a higher emphasis on physical health.

In contrast, the data showed no significant difference in the perceived importance of cognitive functioning in successful aging between the two age groups. This conclusion suggests a shared understanding between these two groups regarding the role of cognitive functioning for successful aging. This shared understanding aligns with the findings of Levy (2009), who emphasized the importance of cognitive functioning across all ages and life stages. Bowling and Dieppe (2005) shared this view, stating that cognitive functioning is universally valued in the context of successful aging, regardless of age.

On the other hand, social engagement was perceived as significantly more important by the younger age group compared to the older age group. This could be explained by a study Cornwell, et al. (2008), who stated that as younger adults engage more in roles as work and family, they tend to emphasise social engagement more, something that was also concluded by Lodi-Smith & Roberts (2007). Another explanation could be that younger adults have larger networks, which lead them to place a higher emphasis on social engagement, which Wrzus, et al. (2013) concluded in their study.

Finally, the age group of 20-30 perceived mobility significantly higher than older adults, showing a greater recognition of the role physical mobility plays in aging successfully. The greater emphasis on mobility among the younger age group could be rooted in their active lifestyle and engagement in various physical activities, which will make them more conscious of its value. Hirvensalo, et al. (2000) suggested that younger adults, especially those who are involved in regular physical activity, tend to have a more positive attitude towards aging, and subsequently value mobility higher due to its direct impact on their ability to participate in their desired activities. Another explanation for this higher emphasis, is the fact that there is a society that increasingly value health and fitness, promoting mobility as a key factor in overall well-being (Levasseur, et al., 2010).

## Conclusion

In conclusion, the data shows a significant difference for social engagement, physical health and mobility as important factors for successful aging, between the age groups 20-30 years, and 50-65 years in the Netherlands, where the younger age group shows a higher perceived importance on these factors than the older age group. For cognitive functioning, there was no significant difference in perceived importance, concluding that both age groups value this concept as equally important for successful aging. This results highlights the importance of age specific strategies to promote successful aging.

This study contributes by giving valuable insights into the different perceptions on successful aging for the age groups 20-30 and 50-65 in the Dutch population. It shows the necessity for different age-specific health promoting strategies, concluding from the different perceived importance of physical health, social engagement and mobility between these age groups

By looking at the results of this research, it is not likely that a new conceptual model arises, since there is no doubt that they four concepts play a role in successful aging, for both age groups that played a role in this research.

## Strengths

The current study has several strengths that contribute to the discourse on aging, particularly in the Dutch context. It presents a comprehensive approach to investigating perceptions of successful aging by exploring four key aspects: physical health, cognitive functioning, social engagement, and mobility. Each of these aspects brings a unique lens to view the aging process, allowing for a more nuanced understanding of what successful aging means to different age groups. Previous studies may have focussed on only a single aspect of successful aging, or have taken a narrow range of factors. However, this study takes a more inclusive approach by looking at all the four key aspects simultaneously. By presenting this more inclusive insight, this study lays a groundwork for additional research, playing a role in expanding the existing body of research on successful aging.

One significant strength lies in the inclusion of a younger demographic (20-30 years). While much of the literature on aging focuses on the experiences of older adults, this study acknowledges that perceptions of aging begin to form well before old age. By capturing the perspectives of younger adults, the research provides fresh insights into anticipatory aging perceptions. These insights are invaluable for shaping early interventions and educational programs that promote a more positive and proactive approach to aging, starting from young adulthood.

The study's quantitative design is another strength. By collecting and analysing numerical data, the research has enabled the objective measurement of participants' perceptions and the direct comparison of these perceptions across different age groups. The precision offered by this quantitative approach contributes to the reliability and replicability of the findings, lending further credence to the study's contributions.

By focusing on the geographical context of the Dutch population, this research adds another layer of depth to the finding. The perceptions of successful aging are likely influenced by cultural norms, societal values, and local health policies. By focusing on the Dutch context, the study offers a culturally specific perspective on successful aging. Such insights can inform the development of culturally sensitive health promotion interventions and policies.

The study's use of a validated 5-point Likert scale for data collection is another strength. This method offers a clear and consistent way for participants to express their perceptions, enhancing the reliability of the data collected. Moreover, the Likert scale allows for nuanced responses, capturing the subtle differences in individual perceptions that may otherwise be lost in a binary agree-disagree format.

## Weaknesses

The study has several limitations that need to be acknowledged. One of the main limitations is the relatively small sample size, namely 78 (Age 20-30 N=47, Age group 50-65 N=31). Although our findings reveal significant differences in perceptions across the two age groups, the sample size may not be representative of the broader population. In addition, the use of a self-reporting survey, while common in such studies, could lead to response bias where respondents might have either over- or under-estimated the importance of the factors in question. The recruitment process can be another limitation of this study. By the chosen recruitment process of participants, it is highly likely that participants are part of the first, second or third social circle of the researcher.

Further, the study focused on two age groups, 20-30 and 50-65, leaving out other age groups that could provide a fuller understanding of the perception of successful aging across the lifespan. Also, it is worth noting that this study is cross-sectional, providing a snapshot of perceptions at one point in time. Longitudinal studies could offer deeper insights into how these perceptions might change as individuals age or as societal norms and expectations evolve. Since this perception might only be a snapshot of current day perceptions, something that inevitably changes throughout the years. Even though this can be considered as a limitation, it can also be seen as a starting point in measuring changes in this perceptions.

By not including older adults above 65 years old, this study may have some limitations. The results of this study may not be representative of the entire aging Dutch population, since older people above 65 years are likely to have the most experience with the aging process, and can provide useful insights about this process, something that the younger age groups are less likely to provide. Another possible limitation caused by the exclusion of older adults above 65 years is the limitation on generalization, since the age group that has the most direct experience with aging is excluded.

Finally, the study focused solely on the Dutch population, limiting the generalizability of the findings. Different cultural, social, and environmental contexts could influence perceptions of successful aging, and it would be beneficial to examine these perceptions across different cultures and societies.

Despite these limitations, the data provided a valuable perspective on how different age groups in the Dutch population perceive the factors of successful aging. Future research could perhaps explore these perceptions longitudinally to understand how they change over time. Furthermore, replicating this study in different cultural or geographic contexts could help determine whether these perceptions are universally held or specific to the Dutch population.

## Recommendations

Despite its limitations, this study provides a useful starting point for further exploration into perceptions of successful aging. Future research could benefit from a larger and more diverse sample size to increase the representativeness and generalizability of the findings. Longitudinal studies could also be beneficial to track changes in perceptions over time and across different life stages.

Given the significance of physical health, social engagement, and mobility in the younger age group's perception of successful aging, future studies could delve deeper into these factors. For instance, exploring what specific aspects of physical health or social engagement are deemed important could provide more nuanced insights. Similarly, studies could explore what mobility means to different age groups beyond the physical ability to move around, such as independence or access to social and recreational activities.

Because of the absence of older adults above the age of 65, and the limitations this causes (discussed in the chapter 'Weaknesses'), a future study could help assess these limitations, and look at the differences in perception of physical health, cognitive functioning, social engagement and mobility for successful aging in all age groups, taking a more age-inclusive research approach.

The significant differences in perceptions between the younger and older age groups also have implications for policy-making and societal initiatives. Policymakers and healthcare providers could tailor interventions and resources to meet the specific needs and expectations of different age groups. For instance, initiatives promoting physical health and mobility could be targeted towards younger individuals, while interventions promoting cognitive health could be designed for all ages.

In conclusion, the findings of this study highlight the need for a more nuanced understanding of successful aging, taking into account the perceptions of different age groups. Such an understanding can inform the development of age-specific strategies and interventions

## References

- Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social science & medicine*, 51(6), 843-857.
- Bowling, A. & Dieppe, P. (2005). What is successful ageing and who should define it? *BMJ*, 331(7531), 1548-1551.
- Bowling, A., Olszynski, W. P., & Tennant, A. (2017). Dimensions and predictors of successful ageing: a systematic review and meta-analysis. *Ageing Research Reviews*, 38, 5-8.
- Cesari, M. (2011). Role of gait speed in the assessment of older patients. *Journal of the American Medical Directors Association*, 12(8), 538-586.
- Centraal Bureau voor de Statistiek (2022). *Prognose bevolking; kerncijfers 2021-2070*. Retrieved on May 18, 2023 from [Prognose bevolking; kerncijfers, 2021-2070 \(cbs.nl\)](https://www.cbs.nl/en-gb/achtergrond/2022/04/prognose-bevolking-kerncijfers-2021-2070)
- Chang, E. S., & Hayslip, B. (2015). Social support and preventive behaviors among older adults: An examination of protective and buffering hypotheses. *Ageing & Mental Health*, 19(6), 526-535.
- Chen, Y., Hicks, A., While, A. E., & Charlesworth, G. (2019). Frailty and perceived successful aging: An exploratory comparison of two perspectives of aging. *Geriatrics & Gerontology International*, 19(4), 332-338.
- Chodzko-Zajko, W. J., Proctor, D. N., Fiatarone Singh, M. A., Minson, C. T., Nigg, C. R., Salem, G. J., & Skinner, J. S. (2009). Exercise and physical activity for older adults. *Medicine & Science in Sports & Exercise*, 41(7), 1510-1530.
- Cornwell, B., Laumann, E.O. & Schumm, L.P. (2008). The Social Connectedness of Older Adults: A National Profile. *American Sociological Review*, 73(2), 185-203.
- Depp, C. A., & Jeste, D. V. (2006). Definitions and predictors of successful aging: A comprehensive review of larger quantitative studies. *The American Journal of Geriatric Psychiatry*, 14(1), 6-20.
- Dykstra, P.A. (2009). Older adult loneliness: myths and realities. *European Journal of Ageing*, 6(2), 91-100.
- Gobbens, R. J., van Assen, M. A., & Luijkx, K. G. (2012). The predictive validity of the Tilburg Frailty Indicator: disability, health care utilization, and quality of life in a population at risk. *The Gerontologist*, 52(5), 619-631.
- Gualdi-Russo, E., Rinaldo, N. & Zaccagni, L. (2022). Physical Activity and Body Image Perception in Adolescents: A Systematic Review. *International Journal of Environmental Research and Public Health*, 19(20), 1-28.
- Harper, S. (2014). Economic and social implications of aging societies. *Science*, 346(6209), 587-591.
- Hedden, T., & Gabrieli, J.D.E. (2004). Insights into the ageing mind: a view from cognitive neuroscience. *Nature Reviews Neuroscience*, 5(2), 87-96.
- Henning-Smith, C., Gonzalez, R., Peek, M. K., & Barrientos-Gutierrez, T. (2019). Social support and self-reported health status among older adults in Mexico: A multilevel analysis. *Journal of Aging and Health*, 31(4), 664-686.

- Hirvensalo, M., Rantanen, T., & Heikkinen, E. (2000). Mobility difficulties and physical activity as predictor of mortality and loss of independence in the community-living older population. *Journal of the American Geriatrics Society*, 48(5), 493-498.
- Holstein, M. B. & Minkler, M. (2003). Self, Society and "New Gerontology". *The Gerontologist*, 43(6), 787-796.
- Jeste, D.V., Savla, G.N., Thompson, W.K., Vahia, I.V., Gloioso, D.K., Martin, A.S., Palmer, B.W., Rock, D., Golshan, S., Kraemer, H.C., & Depp, C.A. (2013). Association between older age and more successful aging: critical role of resilience and depression. *The American journal of psychiatry*, 170(2), 188-196.
- Kim, J., & Lee, S. (2018). The perception of successful aging: A comparison of Korean and US older adults. *Journal of Cross-Cultural Gerontology*, 33(2), 173-185.
- Kim, J.E., & Moen, P. (2002). Retirement transitions, gender, and psychological well-being: A life-course, ecological model. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 57(3), 212-222.
- Lette, M., Baan, C.A., van den Berg, M., & de Bruin, S.R. (2015) Initiatives on early detection and intervention to proactively identify health and social problems in older people: experiences from the Netherlands. *BMC geriatrics*, 15(1), 1-10.
- Levasseur, M., Richard, L., Gauvin, L., & Raymond, É. (2010). Inventory and analysis of definitions of social participation found in the aging literature: proposed taxonomy of social activities. *Social Science & Medicine*, 71(12), 2141-2149.
- Levy, B. R. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science*, 18(6), 332-336.
- Lodi-Smith, J. & Roberts, B.W. (2007). Social Investment and Personality: A Meta-Analysis of the Relationship of Personality Traits to Investment in Work, Family, Religion, and Volunteerism. *Personality and Social Psychology Review*, 11(1), 68-88.
- Luszczynska, A., Scholz, U., & Schwarzer, R. (2013). The general self-efficacy scale: multicultural validation studies. *The Journal of Psychology*, 147(1), 1-17.
- Martin, P., Kelly, N., Kahana, B., Kahana, E., Willcox, B.J., Willcox, D.C. & Poon, L.W. (2015). Defining Successful Aging: A Tangible or Elusive Concept? *The Gerontologist*, 55(1), 14-25.
- Ní Mhaoláin, A.M., Fan, C. W., Romero-Ortuno, R., & O'Connell, M. D. L. (2018). Perceptions of ageing among older adults in Ireland: Findings from the Irish longitudinal study on ageing. *European Journal of Ageing*, 15(4), 363-372.
- Rowe, J. W., & Kahn, R. L. (1997). Successful aging. *The Gerontologist*, 37(4), 433-440.
- Salthouse, T.A. (2012). Consequences of Age-Related Cognitive Declines. *Annual Review of Psychology*, 63, 201-226.
- Seeman, T.E., Albert, M., Berkman, L. & Lusignolo, T. M. (2001). Social relationships, social support, and patterns of cognitive aging in healthy, high-functioning older adults: MacArthur studies of successful aging. *Health psychology*, 20(4), 243.
- Stuck, A.E., Walthert, J.M., Nikolaus, T., Büla, C.J., Hohmann, C., & Beck, J.C. (1999). Risk factors for functional status decline in community-living elderly people: a systematic literature review. *Social science & medicine*, 48(4), 445-469.

Umberson, D., & Karas Montez, J. (2010). Social relationships and health: A flashpoint for health policy. *Journal of health and social behavior*, 51(1), 54-66.

Verbeek-Oudijk, D., Woittiez, I., Eggink, E. & Putman, L. (2014). *Who Cares in Europe? A Comparison of Long-Term Care for the Over-50s in Sixteen European Countries\**. Retrieved on June 13, 2023 from [https://www.genevaassociation.org/sites/default/files/research-topics-document-type/pdf\\_public/ga2014-health31-verbeek-oudijkwoittiezegginkputman.pdf](https://www.genevaassociation.org/sites/default/files/research-topics-document-type/pdf_public/ga2014-health31-verbeek-oudijkwoittiezegginkputman.pdf).  
The Geneva Association.

Webber, S.C., Porter, M.M. & Menec, V.H., (2010). Mobility in older adults: a comprehensive framework. *The Gerontologist*, 50(4), 443-450.

Weggemans, R.M., Backs, F.J.G., Borghouts, L., Chinapaw, M., Hopman, M.T.E., Koster, A., Kremers, S., van Loon, L.J.C., May, A., Mosterd, A., van der Ploeg, H.P., Takken, T., Visser, M., Wendel-Vos, G.C. & de Geus, E.J.C. (2018). The 2017 Dutch Physical Activity Guidelines. *International Journal of Behavioral Nutrition and Physical Activity*, 15(1), 1-12.

Wruz, C., Hänel, M., Wagner, J. & Neyer, F.J. (2013). Social networks changes and life events across the life span: A meta-analysis. *Psychological Bulletin*, 139(1), 53-80.

## Appendices

### Appendix A: Survey

---

Start of Block: Hello, my name is Rutger, and I am doing my Bachelor Thesis on succesful aging!

Consent 1. Do you give permission to use this data for my bachelor thesis? All data will be deleted after it has been processed and assessed. Also notice that the survey is completely anonymous, and that the answers you give are impossible to trace back to you.

Yes (1)

No (2)

End of Block: Hello, my name is Rutger, and I am doing my Bachelor Thesis on succesful aging!

---

Start of Block: Block 4

Q12 In this survey I am using the following defenition of the concept succesful aging by Rowe and Kahn (1997):

Successful aging refers to the maintenance of physical, cognitive, and social functioning throughout the aging process, leading to a high quality of life in later years .

End of Block: Block 4

---

Start of Block: Descriptive statistics

Q1 What is your age?

---

End of Block: Descriptive statistics

---

Start of Block: Physical Health

Q2 On a scale from 1-5, in which 1 is low and 5 is high, how do you rate your current physical health?

- 1 (1)
  - 2 (2)
  - 3 (3)
  - 4 (4)
  - 5 (5)
- 

Q3 To what extent do you believe that good physical health is an important aspect of successful aging?

- Not at all important (1)
  - Slightly important (2)
  - Moderately important (3)
  - Very important (4)
  - Extremely important (5)
- 

Q7 How confident are you in your ability to maintain your physical health as you age?

- Not at all confident (1)
- Slightly confident (2)
- Moderately confident (3)
- Very confident (4)
- Extremely confident (5)

End of Block: Physical Health

---

Start of Block: Cognitive functioning

Q8 On a scale of 1-5 in which 1 is low and 5 is high, how would you rate your current cognitive functioning?

- 1 (1)
  - 2 (2)
  - 3 (3)
  - 4 (4)
  - 5 (5)
- 

Q9 To what extent do you believe that good cognitive functioning is an important aspect of successful aging?

- Not at all important (1)
  - Slightly important (2)
  - Moderately important (3)
  - Very important (4)
  - Extremely important (5)
-

Q10 How confident are you in your ability to maintain your cognitive functions as you age?

- Not at all confident (1)
- Slightly confident (2)
- Moderatly confident (3)
- Very confident (4)
- Extremely confident (5)

End of Block: Cognitive funtioning

---

Start of Block: Block 5

Q13 On a scale of 1-5, in which 1 is low and 5 is high, how would you rate your current level of social engagement?

- 1 (1)
  - 2 (2)
  - 3 (3)
  - 4 (4)
  - 5 (5)
-

Q14 To what extent do you believe that good social engagement is an important aspect of successful aging?

- Not at all important (1)
  - Slightly important (2)
  - Moderately important (3)
  - Very important (4)
  - Extremely important (5)
- 

Q15 How satisfied are you with your current social support system?

- Extremely dissatisfied (1)
- Somewhat dissatisfied (2)
- Neither satisfied nor dissatisfied (3)
- Somewhat satisfied (4)
- Extremely satisfied (5)

End of Block: Block 5

---

Start of Block: Mobility

Q16 On a scale of 1-5, in which 1 is low and 5 is high, how would you rate your current mobility

- 1 (1)
  - 2 (2)
  - 3 (3)
  - 4 (4)
  - 5 (5)
- 

Q17 To what extent do you believe that good mobility is an important aspect of successful aging?

- Not at all important (1)
  - Slightly important (2)
  - Moderately important (3)
  - Very important (4)
  - Extremely important (5)
- 

Q18 How satisfied are you with your current mobility

- Extremely dissatisfied (1)
- Somewhat dissatisfied (2)
- Neither satisfied nor dissatisfied (3)
- Somewhat satisfied (4)
- Extremely satisfied (5)

End of Block: Mobility

---

Start of Block: Open question

Q19 Are there other aspects that you feel are necessary in order to age successfully?

---

End of Block: Open question

---

Appendix B: SPSS

```
RECODE Q1 ('20'=1) ('21'=1) ('22'=1) ('23'=1) ('24'=1) ('25'=1) ('26'=1) ('27'=1) ('28'=1) ('29'=1) ('30'=1) ('50'=2) ('51'=2) ('52'=2) ('53'=2) ('54'=2) ('55'=2) ('56'=2) ('57'=2) ('58'=2) ('59'=2) ('60'=2) ('61'=2) ('62'=2) ('63'=2) ('64'=2) ('65'=2) INTO AgeGroups.
```

```
VARIABLE LABELS AgeGroups 'AGE'.
```

```
EXECUTE.
```

```
NPAR TESTS
```

```
  /M-W= PH BY AgeGroups(1 2)
```

```
  /MISSING ANALYSIS.
```

**NPar Tests**

**Notes**

Output Created		17-MAY-2023 12:07:33
Comments		
Input	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	79

Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS /M-W= PH BY AgeGroups(1 2) /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01
	Number of Cases Allowed <sup>a</sup>	449389

a. Based on availability of workspace memory.

### Mann-Whitney Test

Ranks				
	AGE	N	Mean Rank	Sum of Ranks
1-5 PH	1,00	46	43,01	1978,50
	2,00	31	33,05	1024,50
	Total	77		

### Test Statistics<sup>a</sup>

	1-5 PH
Mann-Whitney U	528,500
Wilcoxon W	1024,500
Z	-2,284
Asymp. Sig. (2-tailed)	,022

a. Grouping Variable: AGE

```
RECODE Q9 ('Not at all important'=1) ('Slightly important'=2) ('Moderatly important'=3) ('Very '+  
  'important'=4) ('Extremely important'=5) INTO CognitiveFuntioning.
```

```
VARIABLE LABELS CognitiveFuntioning 'CF'.
```

```
EXECUTE.
```

```
RECODE Q14 ('Not at all important'=1) ('Slightly important'=2) ('Moderatly important'=3) ('Very '+  
  'important'=4) ('Extremely important'=5) INTO SocialEngagement.
```

```
VARIABLE LABELS SocialEngagement 'SE'.
```

```
EXECUTE.
```

```
RECODE Q17 ('Not at all important'=1) ('Slightly important'=2) ('Moderatly important'=3) ('Very '+  
  'important'=4) ('Extremely important'=5) INTO Mobility.
```

```
VARIABLE LABELS Mobility 'MOB'.
```

```
EXECUTE.
```

```
NPAR TESTS
```

```
  /M-W= CognitiveFuntioning BY AgeGroups(1 2)
```

```
  /MISSING ANALYSIS.
```

## NPar Tests

### Notes

Output Created		17-MAY-2023 12:14:58
Comments		
Input	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	79
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS  /M-W= CognitiveFuntioning BY AgeGroups(1 2)  /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01

Number of Cases Allowed <sup>a</sup>	449389
---	--------

a. Based on availability of workspace memory.

### Mann-Whitney Test

Ranks				
	AGE	N	Mean Rank	Sum of Ranks
CF	1,00	42	38,18	1603,50
	2,00	30	34,15	1024,50
	Total	72		

### Test Statistics<sup>a</sup>

CF	
Mann-Whitney U	559,500
Wilcoxon W	1024,500
Z	-,983
Asymp. Sig. (2-tailed)	,326

a. Grouping Variable: AGE

### Notes

Output Created		17-MAY-2023 12:15:26
Comments		
Input	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	79
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS  /M-W= SocialEngagement BY AgeGroups(1 2)  /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.01
	Number of Cases Allowed <sup>a</sup>	449389

a. Based on availability of workspace memory.

### Notes

Output Created		17-MAY-2023 12:17:40
Comments		
Input	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	79
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS  /M-W= SocialEngagement BY AgeGroups(1 2)  /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.02
	Number of Cases Allowed <sup>a</sup>	449389

a. Based on availability of workspace memory.

NPART TESTS

/M-W= SocialEngagement BY AgeGroups(1 2)

/MISSING ANALYSIS.

**NPar Tests**

**Notes**

Output Created		17-MAY-2023 12:19:01
Comments		
Input	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	79
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.

Syntax		NPAR TESTS /M-W= SocialEngagement BY AgeGroups(1 2) /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00
	Number of Cases Allowed <sup>a</sup>	449389

a. Based on availability of workspace memory.

### Mann-Whitney Test

Ranks				
	AGE	N	Mean Rank	Sum of Ranks
SE	1,00	44	41,74	1836,50
	2,00	30	31,28	938,50
	Total	74		

### Test Statistics<sup>a</sup>

SE	
Mann-Whitney U	473,500

Wilcoxon W	938,500
Z	-2,255
Asymp. Sig. (2-tailed)	,024

a. Grouping Variable: AGE

### Notes

Output Created	17-MAY-2023 12:19:29	
Comments		
Input	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	79
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax	NPAR TESTS /M-W= Mobility BY AgeGroups(1 2) /MISSING ANALYSIS.	
Resources	Processor Time	00:00:00.00

Elapsed Time	00:00:00.00
Number of Cases Allowed <sup>a</sup>	449389

a. Based on availability of workspace memory.

**NPAR TESTS**

/M-W= Mobility BY AgeGroups(1 2)

/MISSING ANALYSIS.

**NPar Tests**

**Notes**

Output Created	17-MAY-2023 12:20:21	
Comments		
Input	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	79

Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS /M-W= Mobility BY AgeGroups(1 2) /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.03
	Number of Cases Allowed <sup>a</sup>	449389

a. Based on availability of workspace memory.

### Mann-Whitney Test

Ranks				
	AGE	N	Mean Rank	Sum of Ranks
MOB	1,00	37	40,77	1508,50
	2,00	30	25,65	769,50
	Total	67		

**Test Statistics<sup>a</sup>**

	MOB
Mann-Whitney U	304,500
Wilcoxon W	769,500
Z	-3,643
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: AGE