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When people prefer to retire and what keeps seniors longer in labor market?

Based on job characteristics

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I take full responsibility for any inaccuracies, mistakes, or inconsistencies.

ABSTRACT

With the growing number of pensioners, the importance of keeping the older workers in the labor market is increasing. In this study the personal situation and work characteristics has been investigated to find more information about the effective factors in ideal retirement age for each person by using an ordinary linear regression model. Moreover, a number of motivations has been analyzed to find the most important incentive for seniors to stay longer in their career with the help of a linear probability regression model. In order to achieve this aim, the data from the survey "Norsk seniorpolitisk barometer" 2020 has been investigated and I found out regarding personal life, health and marital status significantly affects the ideal retirement timing and in terms of industries, people working in "merchandise and shop" and "agriculture and forestry" industries preferred to work longer. Having a stressful or physically demanding job affects the desired retirement age negatively and having the opportunity to learn new things in the work life encourages the employees to stay longer in the labor market. Finally, among the motivations that has been investigated in this study, having an interesting job was the most important one to motivates seniors to postpone their retirement and experiencing new challenges in the workplace and feeling useful for the society had a significant influence on the likelihood of post-retirement employment.

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1. Introduction

Working mainly occupies most of the daytime for each adult and it can affect different aspects of individual's life. Therefore, the quality and the procedure of it can influence many decisions and situations in lifetime. In this study I am going to investigate the effects of personal situation and working characteristics on desired retirement age to find out more about the retirement decisions and see how it is different in each industry. Additionally, a number of incentives for post-retirement employment has been investigated to help the policymakers to find the most effective one in order to retain the seniors longer in the labor market.

The nature of retirement has changed over the time, such that retirement is more complex, dynamic and evolving and varies considerably across individuals and contexts (Furunes et al., 2015; Wang & Shultz, 2010). Broadly speaking, retirement is now viewed as a process that takes time, rather than as a one-time discrete event, where individuals transition from full employment to full retirement (Beehr, 1986; Wang & Shultz, 2010).

The work characteristics is one of the most important factors that people consider when they want to decide for their retirement timing. (Beehr, 1986). Additionally, working condition can influence the mental and physical health of employees. As a result, it has a direct relation to the age that they decide to become retired. For example, the individuals who decide to leave their occupation in their early 60s consider some factors in their workplace which can be similar across the whole industry. Therefore, it can create a pattern that is worthful to study.

Moreover, finding out the relation between working environment and retirement age can be beneficial to the managers and organizations, as it can help them to plan the future of their business based on knowing the number and the potential of their employees.

On the other hand, study the retirement decisions can affect the economy and the economic activities of the whole country in many aspects, as it is in contact with the labor force and labor supply. Therefore, with the growing number of pensioners the importance of it for macroeconomics is undeniable. Based on the statics from the Norwegian Labor and Welfare Administration (NAV) the number of people who received old-age pensions in 2020 was 981,400 and it changed to 1,018,200 by the end of 2022, it shows an increase of 3.7 percent in 2 years.

Denton and Spencer (2009) identified eight different common ways that researchers from across the globe measured retirement status: (a) nonparticipation in the labor force, (b) reduction in hours worked and/or earnings, (c) hours worked or earnings below some minimum cut-off, (d) receipt of retirement/pension income, (e) exit from one's main employer, (f) change of career or employment later in life, (g) self-assessed retirement, and (h) some combination of the previous seven. It is possible to have mismatch between the conceptualization of retirement and the operationalization of retirement, rendering difficulty in interpreting research findings.

In this study the retirement age comes from a survey question which shows the age that individuals prefer to step out of work if there were no restrictions and they could decide freely (desirable retirement age). It can be a way to find out the effective factors on retirement age decision regardless of regulation or general policies. There are only a few numbers of studies which investigate the ideal retirement age for each industry freely based on people's preference.

2. Theoretical literature

2.1. Ageing

The main purpose of this study is investigating the retirement age. Therefore, first of all I want to focus on the definition of age. The most common definition for age is chronological aging but it does not influence older workers' productivity as much as their subjective experienced age (Kunze et al., 2015). Ageing in association with working life has to consider a combination of different factors instead of only chronological age in order to maintain a sustainable extended working life (Kooij, et al., 2013). Based on researches four different definition of age has been identified that affect the possibility of workers to extend their working life. These are chronological ageing, mental ageing, biological ageing and social ageing (Nilsson, 2016). Therefore, we can say that an individual is assumed to have several ages at the same time depending on different contexts. Those ages are related, and not entirely distinct from each

other. Chronological ageing describes the passage of time and thereby influences the other conceptualisations of ageing (Nilsson, 2016).

Dworschak et al. (2006) found that qualitative performance increases as people grow older. Researches have shown that gaining age causes a shift, rather a decline, in performance (Karazman et al., 2003). While a decline occurs in physical work capacities, mental work capacities (awareness, concentration) are maintained, and cognitive and social skills are improved.

Ageing affects many aspects of people's lives and therefore it needs a more accurate consideration of each definition in relation to the possibility for extended working life. In general, societies normally focus on chronological ageing and try to increase the retirement age regarding statutory pension systems, e.g. beyond 65 years of age. However, aging is much more than simply the number of years that has passed after birth, but also includes dimensions of mental/cognitive, biological and social ageing (Nilsson, 2016).

Therefore, we can say that having a same constant age for all people with different conditions and occupations cannot reflect efficiency in the economy. This study tries to find a better relation between age and retirement based on people's personal situation and job characteristics to improve the efficiency of the labor market and encourage seniors to stay longer in their occupations as the proportion of pensioners increases.

2.2. Effective factors in retirement decisions

Based on a study by Nilsson (2016), at the micro level, individuals weight their own situation based on four issues when deciding whether they should retire or stay in the workforce: (a) their health and well-being in relation to their work situation, work environment and work pace/recovery time compared with their expected health if they retire; (b) their personal economic situation in employment compared with in retirement; (c) the opportunities for social inclusion and participation in working life situations in employment, together with workmates, clients, patients, etc., compared with in retirement, where they will have more time together with family and for voluntary work and leisure; and (d) the opportunities for meaningful and

self-crediting activities and tasks in working life in relation to their knowledge, experiences and skills compared with the opportunities for meaningful and self-crediting activities they expect in retirement, with more time for leisure and voluntary activities.

I have categorized these issues into personal and job-related factors. In following parts, each group has been explained in detail.

Personal factors

Chronological age is one of the strongest, and most obvious, predictors of decisions about when to retire (Wang & Shi, 2014). There are several influences that contribute to the positive relationship between age and retirement. For example, as people age often serves as a proxy for declining health and cognitive functioning, which can limit an older worker's capacity to work (Moen, 1996). Chronological age is also related to and a proxy for psychological factors, such as work motivation and subjective age (Fisher et al., 2016).

Regarding the next personal factor, McGarry (2004) studied how **health** status can be effective in retirement expectations, finding notable effects of self-rated health on when workers expected to retire. Importantly, she also showed that regarding retirement timing changes in health status is much more effective than changes in income and wealth.

Regarding **gender**, research results are complex as the effects of gender on retirement cannot be attributed to one single factor. Rather, a variety of other characteristics such as family, culture and economic status must be considered to gain a full understanding of how gender affects retirement (Fisher et al., 2016). Women are much more likely to take on caregiving roles that significantly impact their productivity for paid work at various points across the life course. Results from a U.S. sample in the Cornell Retirement and Well-Being Study (CRWB) indicated that women are more likely to be in a caregiving role than men, and more likely to step away from their paid jobs to meet caregiving needs (Dentinger & Clarkberg, 2002). Cultural norms often play a major role in explaining the differences in retirement timing among women (Peiró et al., 2013). Finally, it is important to note that the age of eligibility for government or state pension retirement benefits in some countries (e.g., Switzerland) differs by gender (Madero-Cabib et al., 2016).

In terms of **marital status**, the retirement process is not simply an individual level phenomenon. The decision regarding when to retire is often made collaboratively among

spouses or partners as it is a major decision that can affect both individuals and couples remarkably. Therefore, it is closely related to spouse's work status and the quality of their marital relationship. This is evidenced by prior research that has found that spouses often coordinate their retirements with one another. American workers are much more likely to continue working if their spouse is also still working (Gustman & Steinmeier, 2000). In addition, how much spouses enjoy spending time together is a strong predictor of whether or not they time their retirement to coincide (Gustman & Steinmeier, 2005). Moreover, research conducted among Dutch older workers suggests that perceived spousal pressure is the strongest predictor of early retirement (van Dam et al., 2009).

Research conducted in different countries has consistently found a positive relation between **education** and retirement age. Individuals with higher levels of education have higher expectations of working past age 65 compared to those with less education (Mermin et al., 2007). Lower levels of education are related to earlier retirement (Siegrist et al., 2007), and higher levels of education are related to later retirement (De Preter et al., 2014). The relation between retirement timing and education may be explained in part because higher levels of education are also related to more attractive and higher income occupations and possibly better working conditions (Fisher et al, 2016).

In addition to health, wealth, and demographic characteristics, there are numerous psychological factors that may influence retirement timing. These factors include **motivation** (e.g., goals, needs, and values), **preferences** and **expectations** regarding retirement and retirement timing, attitudes toward retirement, role identity, and personality characteristics (Fisher et al.,2016). Many individuals are motivated to work because they get the sense of fulfilment or a sense of purpose by working (Steger & Dik, 2009). Steger et al. (2012) defined meaningful work in terms of three dimensions: finding positive meaning in work, identifying work as a primary route to finding meaning in life, and perceiving work as beneficial for the greater good.

Generativity is one way in which individuals can gain a sense of satisfaction in their occupation. It is defined as having the opportunity to share one's knowledge and experience with younger generations (Templer et al., 2010). This can be a highly meaningful experience for many people, and as a result, individuals may choose to remain in the labor market for a longer period of time rather than retire early. In a survey from the Metlife Mature Market Institute (2006) in the United States, the majority of older workers aged 55–59 stated financial

motives as the primary reason to continue work (72%), whereas older workers aged 66–70 indicated they continue to work (despite being eligible for Social Security and pension benefits) because of a desire to stay active and engaged (72%), to have an opportunity to do meaningful work (47%), and to continue having social interaction with colleagues (42%). Moreover, Schmidt and Lee (2008) conducted a study to investigate the retirement preferences of Canadian workers approaching retirement age. The study revealed that individuals who reported higher levels of job involvement expressed a preference for delaying their retirement. Additionally, **self-efficacy** also refers to an individual's belief in his or her ability to perform a specific task or accomplish a specific goal (Bandura, 1977) which can be categorized in both personal and job-related variables.

Lu (2012) found out attitudinal factors have an impact on the likelihood of continue working after the age of 60. The study showed that those with positive **attitudes toward aging** and social norms that encouraged continued work at older ages were related to strong intentions to keep working after age 60. Desmete and Gaillard (2008) investigated the association between individual's self-categorization as an old worker and attitudes towards early retirement in a sample of predominantly Belgian workers. They discovered that self-categorization as an old worker was linked to a desire to retire early. In this thesis in order to check this factor, the attitude towards aging will be measured with a question that asks in which age people considered as elderly in working life to investigate people's attitude towards old age.

The next effective factor regrading retirement timing is **life expectancy** (how long one expects to live or expected mortality). Hurd et al. (2004) find out those with very low subjective probabilities of survival retire earlier and claim earlier than those with higher subjective probabilities.

According to the push/pull model of retirement, some employees are drawn into retirement due to preferences for **leisure** or other nonwork activities (Shultz et al., 1998). Schmidt and Lee (2008) also discovered that participating in leisure activities was a distinct predictor of retirement intentions among older Canadian workers. Based on a study by De Preter et al. (2013), a positive attitude toward leisure time and higher levels of satisfaction with leisure time encouraged older European workers, both men and women, to retire.

Job-related factors

Retirement timing is also affected by **financial resources** potentially available for retirement (Beehr, et al., 2000). This has been echoed in a research study conducted using data from Survey of Health, Ageing and Retirement in Europe (SHARE). The finding of it indicated that nations with pension systems that offer more generous retirement options tend to have higher rate of early retirement among their population (Engelhardt, 2012). Using data from Health and Retirement Study in the United States among individuals aged 51–79, Angrisani et al. (2013) found a higher hourly wage was associated with a higher probability of remaining in full-time employment and a lower probability of moving to part-time or out of the labor force.

According to previous studies, job characteristics can have a significant impact on the timing of retirement. For instance, Herrera (2018) found that **physically demanding** jobs were often linked to retirement at an earlier age. It has also been shown that improving stressful working conditions, particularly increasing employee sob control, can have a positive effect on extending employees' working lives and delaying their retirement (Mäcken, 2019).

According to Beehr et al. (2000), workers with high levels of job demands, limited number of **opportunities for growth**, or other factors that cause stress are more likely to retire earlier. Van Solinge and Henkens' (2014) studied the actual and planned retirement age among older workers in Netherland and they found that job characteristics (e.g., job pressure, job challenge) and **organizational policy** (e.g., phased retirement) were related to expected retirement age, whereas growth opportunities and supervisor support for working longer were related to actual retirement age.

A study by Mitchell et al. (1988) found that retirement patterns differed by occupation and **industry**, and that the three factors that were most likely to influence retirement patterns were job satisfaction, workplace injuries, and job productivity. By understanding the impact of job characteristics on retirement, organizations can develop policies and practices to support their employees and ensure that they have a secure retirement.

2.3. The Norwegian retirement system

"Since the early 1970s, Europe has experienced a steady decline in employment rates among older people, with Norway being the most significant exception" (Hult & Edlund, 2008).

In Norway, a new pension system incentivising longer careers was introduced in 2011. The statutory pension age, before the reform, was 67. However, it was possible for many people to step out of their career earlier by opting for a voluntary early retirement scheme (or by retiring with a disability pension because of health problems). Furthermore, a significant proportion of workers were subject to lower occupation-specific retirement age limits (particularly in the public sector) (Midtsundstad et al., 2017).

Having introduced the flexible pension age, all workers were given the opportunity to start drawing their pension from the age of 62 (if sufficient pension accrual has taken place over the years) (Hernæs et al., 2016). It is also possible in the reform to combine full work with full pension income, additionally, it is possible to postpone both work exit and pension uptake which can be even more profitable sometimes. The government decided in 2015 to raise the age limit for employment protection in the private sector from 70 years to 72 years (and from 67 years to 70 years for businesses with a lower firm-specific age limit) in order to improve older workers' opportunities to remain gainfully employed. Generally, the age limit, or the mandatory retirement age, is regarded as a point at which the employer is permitted to terminate an employee's employment contract without any further explanation on the part of the employee. In the public sector, the limit remained unchanged (70 years – or lower in case of occupation-specific limits) (Hellevik & Herlofson, 2020).

After the reform in 2011, each person can choose to take out a full pension or a graduated pension: 20, 40, 50, 60 or 80 percent. In addition, it is also possible to combine the old-age pension with other benefits, for example graduated disability benefit. A person can also make a withdrawal regardless of whether they are at work or not at work. It is not mandatory to stop working in order to apply for an old-age pension system. At the same time, there are several occupational groups that have a so-called special age limit, organized via occupational pension schemes (Christensen & Lægreid, 2020).

Since the late 1960s, a combination of minimum benefits to all elderly people and a second tier of earnings-related benefits has been provided by the Norwegian public pension system. The

earnings-related second tier is based on a point system in which a full pension is achieved after 40 years of participation in gainful work and in which benefits are calculated on the 20 best earnings-years (Halvorsen & Pedersen, 2018).

An individual's pension rights are accrued continuously throughout their life-span under the new system, at a fixed rate of 18.1% of their annual earnings until a ceiling is reached, which is approximately 1.3 times the average full-time salary. The accumulated deposits on individual notional accounts will eventually be transferred into an annuity upon retirement based on the individual's age at take-up and the remaining life expectancy of the cohort to which the individual belongs. The Norwegian reform of 2011 involves the adoption of the so-called notional defined contribution (NDC) approach in which the accumulation of pension rights is directly linked to earnings over the entire life course (Halvorsen & Pedersen, 2018).

2.4. Incentives behind post-retirement employment

The average retirement age within EU is now 61 years of age, and that is still several years earlier than the official retirement age in many of the European countries (EU-OSHA, 2017). However, raising the mandatory retirement age is consistent with the active aging policy, which strives to improve older people's employment, engagement in society, and healthy and independent living (Hovbrandt et al, 2019). Additionally, the possibility for an extended working life can lead to economic contributions and support a sustainable society (Nilsson et al., 2016).

A thorough examination of the elements that impact a retiree's return to the labor force may assist businesses in better understanding the process and achieving more successful strategic human resource (HR) planning. Many business owners are concerned about workforce shortages as the baby boom generation retires (Sullivan & Ariss, 2019).

According to research, the type and possibility of job available to retirees is influenced by their level of **education**. For example, pensioners claimed that a lack of education was an impediment to self-employment (Schuetze, 2015), and those with less education were more inclined to work part-time rather than full-time after retirement (Hayward et al., 1994). Griffin

and Hesketh (2008) discovered that retirees with greater levels of education were much more likely than those with lower levels of education to engage in paid postretirement employment, or a combination of paid employment and unpaid volunteer activity.

Scholars have discovered a complicated mix of characteristics, such as **gender** (Simpson et al., 2012) and **former career** (Armstrong-Stassen & Staats, 2012), that impact involvement in postretirement work when combined with requirements. Armstrong-Stassen and Staats (2012) discovered that preretirement occupation had a substantial effect on what needs pushed women, but not men, to engage in postretirement work. Women who had retired from a professional career job (e.g., engineer, nurse, accountant) were significantly more likely to agree that providing these practices would encourage currently retired people to return to the labor force than women who had retired from a managerial career position (e.g., supervised others) and men who had retired from either a managerial or a professional career job. They also find out women working in professional positions rated the needs for social interaction and growth (e.g., pride from working, sense of accomplishment) as significantly more important to their engagement in postretirement employment. According to Nobahar et al. (2015), retired nurses in Iran re-entered the labor market due to a mix of factors such as financial necessity, the expectations of others, and the desire to apply their expertise or help society.

Individuals' participation in postretirement employment may be influenced by the loss or change in their **work identity** upon retirement. For example, Schlosser et al. (2012) investigated how individuals, particularly those who get embedded in job-related obligations, routines, and social contacts, may feel significant work identity loss following retirement. They discovered that retirees who suffered severe work identity loss were much more likely to want to renter the labor field, as predicted. Some studies have explored the relationship between need for authenticity, control, or flexibility and postretirement employment. August (2011) discovered that women worked after retirement to satisfy their desire for **authenticity** (i.e., the need to be genuine to oneself). Individuals were more likely to engage in postretirement employment if they had **control** over their work schedule (e.g., workday start and finish time, breaks) and if the job was not physically demanding, according to Virtanen et al. (2017).

Wöhrmann et al. (2013) found that pre-retirees who received **social support** at their present workplace were more likely to contemplate working for their current company after retirement. Wöhrmann et al. (2014) also investigated the effects of **emotional support** on work after retirement using both semi structured interviews and surveys. They discovered that acceptance

from close relatives (e.g., spouse, family, and friends) was connected to pre-retirees' desire to work after retirement. Furthermore, social approbation reinforced the favorable association between expected job outcomes (e.g., financial incentives, passing on knowledge to others) and intention to work after retirement.

Moreover, Children's impact studies (Pleau, 2010; Kim & Feldman, 2017) discovered a substantial positive association with postretirement work engagement. Likewise, some studies have found that having caregiving responsibilities for a child or infirm adult decreased the odds of working after retirement (Moen & Flood, 2013).

Van Solinge and Henkens (2014) discovered that supervisor support for working longer had a substantially larger influence on actual retirement age than planned retirement age in a longitudinal study of older employees in the Netherlands. In a qualitative study undertaken to better understand what organizations can do to retain older workers, Oakman and Howie (2013) concluded from focus group interviews of Australian older employees that organizations should provide a **supportive work environment**, provide workers with **interesting and challenging work**, and foster **part-time work arrangements**.

Topa and Alcover (2015) discussed how experiences with workplace **age discrimination** caused some individuals to internalize negative stereotypes about older workers and adopt what has been termed an "older worker identity". Those that acquired this negative older worker identity reported reduced motivation, inventiveness, and flexibility, and they were less inclined to work after retirement. Finally, one of the affective factors to continue working after the retirement age can be the opportunity of **reducing working hours.** NOVA (Norsk institutt for forskning om oppvekst, velferd og aldring) report 6/2012 points out that flexibility, the possibility for working part -time or changing jobs or work tasks can make it easier to combine work and leisure time, and therefore postpone the retirement in the working life.

2.5.   Importance of Corona pandemic

The working life condition in 2020 changed from prior years because of the corona epidemic. To prevent the spread of the coronavirus, the government and other public authorities took the most strict and invasive precautions ever seen in Norway during peacetime (Norsk seniorpolitisk barometer report, 2020).

Based on a report by Christensen and Lægreid (2020) in all, 291,000 people, or 10.4 percent of the labor force, were registered as fully unemployed by March 24. By comparison, two weeks, earlier the unemployment rate was 2.3 percent, and as of May 9, it was around 8 percent. To mitigate the negative economic effects of the strong restrictions, the Norwegian government introduced measures or packages in several steps:

- On March 13, immediate measures were introduced to support jobs and to help viable companies avoid unnecessary layoffs and bankruptcies.
- On March 16, 100 billion Norwegian kroner worth of guarantees and loans in crisis support for businesses was made available followed by a compensation scheme for culture, the voluntary sector, and sports.
- On March 27, the government approved additional financial measures to otherwise sustainable businesses that had been severely affected by measures to contain the pandemic.
- On April 3, additional measures were introduced directed at businesses that had been hard hit during the pandemic, including cash support for enterprises. The fiscal measures so far add up to 241 billion Norwegian kroner taken from the petroleum fund, corresponding to an increase in the expenditures on the state budget of 17 percent compared with 2019.

We can say that during the pandemic a lesson was being taught on the trade-off between protecting civilians from a pandemic and ensuring the economy. Successful pandemic management must prioritize protecting populations from infection, but this must be followed by steps to mitigate the negative economic consequences of drastic measures. The Norwegian approach prioritized health care while it was able to earmark what it deemed sufficient government resources and stimulus packages to help support those affected and to restart the economy (Christensen & Lægreid, 2020).

Resignations and redundancies as a result of infection protection measures resulted in a large number of job searchers in some cases. The number of jobseekers registered with NAV increased sharply in March 2020, peaked at the beginning of April, and at the end of August, approximately 216,400 jobseekers (7.6 per cent of the workforce) were registered with NAV (Norsk seniorpolitisk barometer report, 2020).

Although COVID-19 affects persons of all ages, those over the age of 60 were shown to be most sensitive to the virus, with case fatality rates considerably increasing with age (Li et al., 2020).

NAV registered 5,900 new old-age pensioners, which is 600 more than at the same time in 2019. It is also the highest monthly number since 2016. Despite that, it is not very much higher than some other months in the past few years. There has been no noticeable increase in the number of new old-age pensioners in the months that followed. There is also a point to be made when you take into account that the number of new old-age pensioners for the summer months of 2020 was somewhat low. In general, the number of new old-age pensioners in 2020 has been roughly in line with what was expected. In April, the Corona pandemic is likely to have been the reason for the rise in withdrawals, but it cannot be ruled out that it will be followed in other months by a drop in withdrawals as well. The pandemic has generally led to increased savings in the population, and it cannot be ruled out that it may also have led to some people postponing their pension withdrawals as a precaution (Christensen & Lægreid, 2020).

2.6.   2020 Retirement Statistics

In this section, I have mention some of the statistical reports to get an overview on statistical facts about the retirement timing in 2020 in addition to the findings of this study.

In the survey, on average women and men picked almost a similar desirable retirement age while it is not the same in the statics from 2020. Based on a report from NAV (Utviklingen i alderspensjon per 31. desember 2020), women made up 51.1 percent of the recipients, and men 48.9 percent. Mostly, it is visible in figure 1, men were in the younger age groups, while the proportion of women increases with age. The fact that there are most men in the younger age groups is explained by the fact that there are more men than women who choose to take out the

old-age pension before the age of 67. The average age at first withdrawal of retirement pension was 65.5 years in 2020. For women, the average age was 66.1 years and for men 64.9 years.

Figure1. Pensioner in different age groups and genders
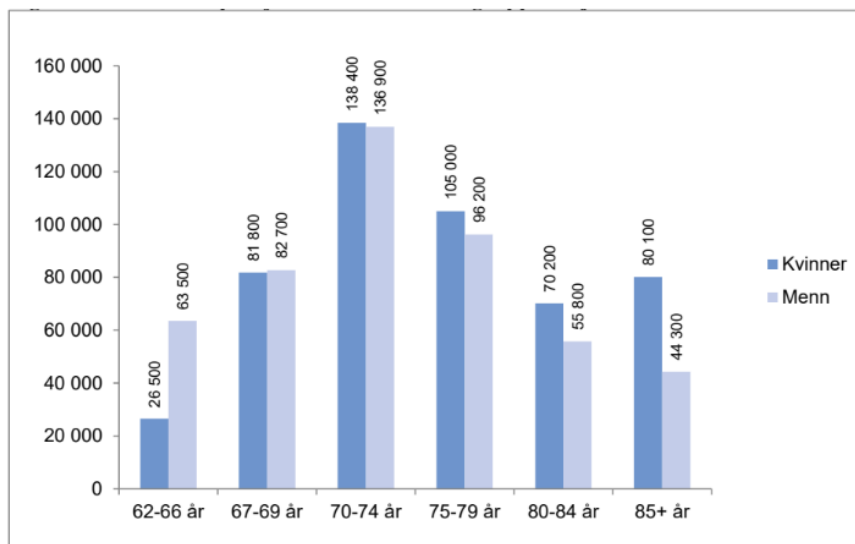
Figure 1. Number of old-age pensioners in different age groups and genders. December 2020; Source: NAV

There are clear differences between women's and men's first retirement pension withdrawal. Figure 2 shows the withdrawal age for women and men in 2020 (January - December). A greater number of men chose to start their withdrawal at the age of 62, while women more often started their withdrawal at the age of 67. As it is visible in figure 2, the number of women stepped out of their career in 2020 was 22,460 while only 13,880 of men retired in this age. Additionally, the number of men decided to retire at the age of 62 was more than twice of women at the same age.

Figure 2. New pensioners in different age groups and genders
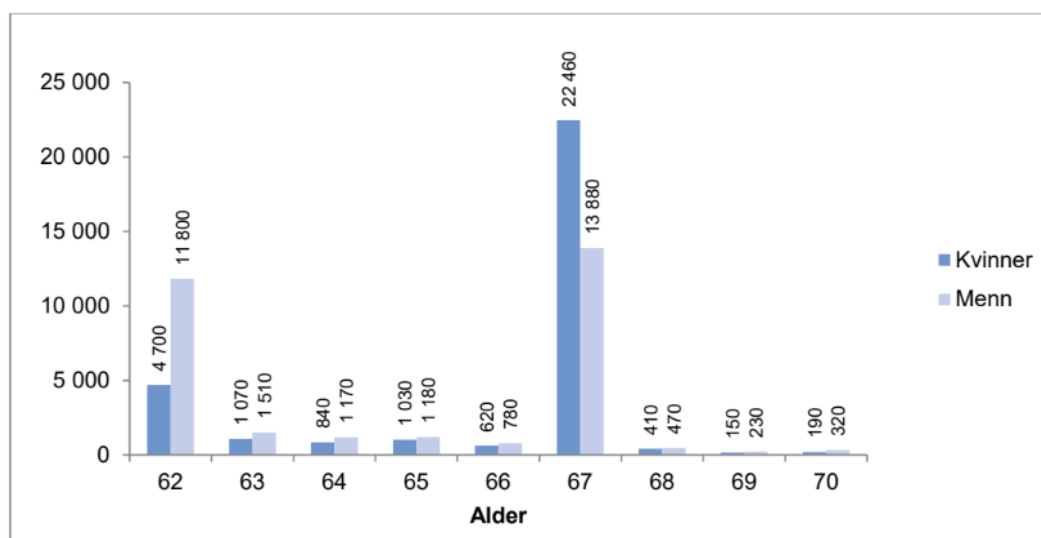
Figure 2. Number of new old-age pensioners in the 62-70 age groups and genders. 1st – 4th quarter 2020; Source: NAV

3. Data

3.1. Norsk seniorpolitisk barometer survey

The main aim of this thesis is investigating the motivations behind retirement decisions. In order to reach this aim, a number of variables has been considered. These variables are defined by the questions from the survey "Norsk seniorpolitisk barometer". This survey is provided by the Centre for Senior Policy (SSP) which is a competence centre that works with the stimulation and development of good senior policy in working life. The barometer has been carried out since 2003. It is conducted every other year among employees in Norway to map perceptions and attitudes towards senior policy issues in working life. The selection for this study consists of net 3002 persons between the age of 16 and 95 in 2020.

3.2. Variables

This survey contains several questions[1] about the personal and working condition of the participants and the answers to these questions are considered as variables for the empirical analyses. In order to have a better impression of the explanatory variables I have categorized them in 3 different groups of personal, industry, job-related and motivation. In the following sections, each group has been defined.

3.2.1. Dependent variables[2]

Desirable Retirement Age. The main variable that considered as dependent variable is the age that the participants prefer to retire if there was no barrier, or they could decide freely (DRA). It can be so varied among the participants based on their age and condition. This variable has chosen as dependent variable as it is the closest variable to find out about the actual planned retirement age. It may not be accurate, especially for younger people, but it was the most available variable to analyze working related variables in this survey. Additionally, it can be a way to find out the effective factors on retirement age decision regardless of mandatory reasons or general policies, therefore it can be considered as the ideal retirement age for each person.

In order to have a more accurate impression the result from the people who aged over 55 has been investigated for this variable separately. These participants are more closed to the retirement age or already retired, so they can have more accuracy in their answers. DRA is distributed between 18 and 99 but on average desirable retirement in the data set is 65.22. Moreover, table 1 shows the average of DRA between male and female participants and the proportion participants who preferred to work after 67.

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[1] Check appendix for the original questions in Norwegian.
[2] The questions related to dependent variables in appendix: q17 and q11.

Table 1. Statistics for dependent variables

	Whole sample	Male	Female
DRA	65.22 (8.11)	65.19 (9.19)	65.25 (6.57)
DRA over 67 (percentage)	37.47	56.98	43.02
Looking	2.63 (0.99)	2.66 (0.97)	2.60 (1.02)

Table 1. the average of desirable retirement age, the percentage of participants who picked a desirable retirement age over 67 and average rate of looking forward to or terrifying from retirement on the scale of 1 to 5, by men and women

Looking forward to retirement. Another way to find out about retirement decisions in this study is investigating if personal and job-related factors can encourage the person to look forward to retirement or be afraid of it. In order to measure this variable a scale of 1 to 5 has been defined, 1 represents "Looking forward to it very much" and 5 represents "Terrifies me a lot". The people who picked "Haven't thought about it yet" considered as "Neither delights nor terrifies me" which is represented as 3 in this scale. Investigating this variable in addition to desired retirement time can be helpful to get a more precise impression of retirement timing. As we can see in table 1, the average rate for this variable is almost 2.6 which shows that participants of this survey have a slightly negative attitude towards retirement.

3.2.2. Personal variables[3]

Personal variables consist of a combination of questions in the survey which ask about personal situation of the participants such as age, gender, education, marital status, health status, the time devoted to work during a week, and the age that they believe an individual starts to consider as an old worker.

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[3] The questions related to personal variables in appendix: Qalder, Qkjonn, QUtd, Qhelse, Qsykdom, Qstatus, q8, and q21.

"Age". The age distribution in this data set is between 16 and 95 and as it is shown in table 2 the average age of participants is 44.2. The "gender" distribution is also available in table 2, and we can see that men formed approximately the 55 percent of the participants in this survey.

"Education". In this data collection, education level is measured in the scale of four levels from primary school / secondary school level[4] to University/ College, higher degree (master's or college education)[5]. As we can see in figure 3, high school and bachelor levels are the most dominant levels of education among the participants.

Figure 3. Distribution of education levels
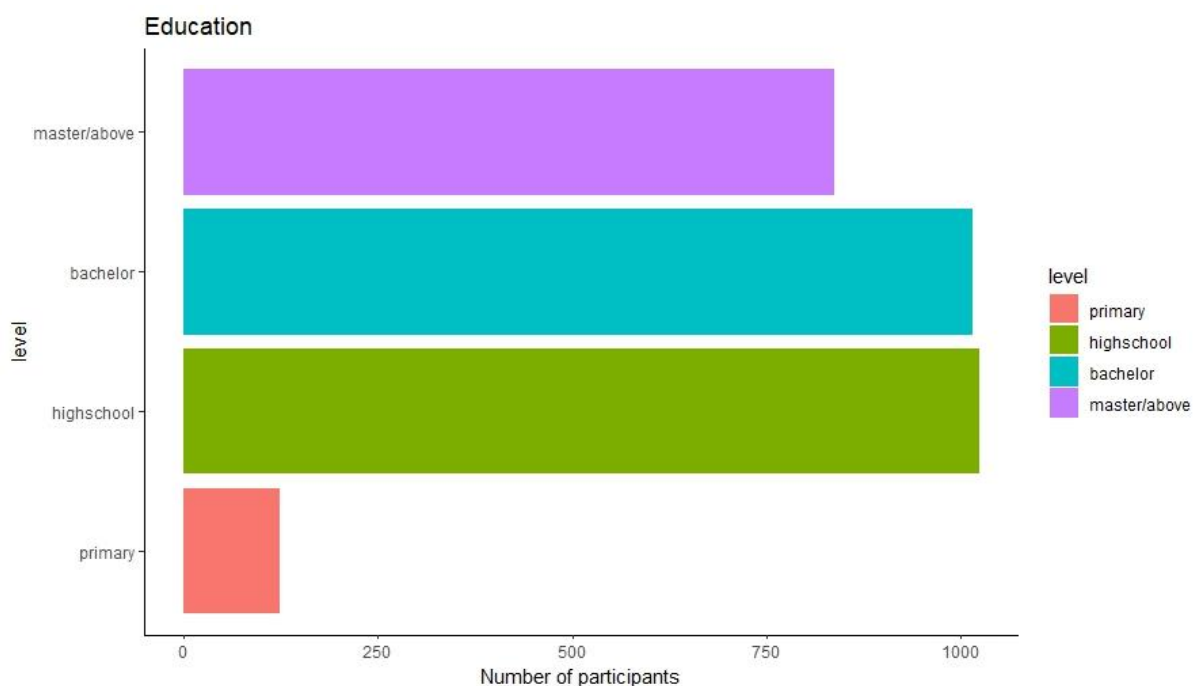
Figure 3. Education level of the participants

"Marital state". Marital status is considered as a dummy variable, 1 for being Married or having a Partner/Cohabitant and 0 otherwise. More than 67% of the participants have partner and men form almost 54% of married participants.

"Health status". In order to measure the health status, two variables have been defined. First, the participants rated their health status from a scale of excellent (= 1) to bad (= 5). As it is mentioned in table 2 the average rate of this variable is 2.21 which is lower than 2.5. Therefore,

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[4] Grunnskole-/ Realskolenivå
[5] Universitet/ Høyskole, høyere grad (Master, Hovedfag, høyskoleutdanning med sivil..grad)

it means that the majority of the participants of this survey gave a good grade to their health status.

"Sick leave". The second variable for measuring health status of the participants is the number of days that they have been on sick leave during the last 12 months. The number of sick leave days has been coded[6] from 0 to 3 and the people who did not remember or did not want to answer have been omitted from the set.

"Weekly hour". The average time that people devote to work in a week is almost 38 hours and there is a notable difference between men and women in the data set. On average men worked more than 39 hours while it was about 35 for women.

"Old at". Finally, the last variable in this part shows the age that people believe after that the workers are considered as "old workers". On average, people picked almost the age of 58. However, the age that women chose was approximately 1 year higher than men.

Table 2. Statistics for personal variables

	Whole sample	Male	Female
Age	44.20 (13.58)	43.64 (13.92)	44.87 (13.12)
Gender distribution (percentage)		54.96	45.04
Education	2.85 (0.87)	2.73 (0.88)	3.01 (0.84)
Marital status (percentage)	67.76	54.23	45.77
Health status	2.21 (1.08)	2.22 (1.06)	2.20 (1.13)
Sick leave	2.59 (1.40)	2.73 (1.40)	2.43 (1.38)
Weekly hour	37.99 (11.27)	39.79 (11.74)	35.79 (10.24)
Old at	58.45 (6.77)	57.93 (7.10)	59.1 (6.29)

Table 2. The average and standard deviation of personal variables

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[6] 0 = no days, 1 = 1 - 9 days, 2 = 10 – 20 days and 3 = more than 20 days

3.2.3. Industries[7]

This variable represents the industries that individuals work in. Including: Industry and Crafts, Construction, Hotel, Restaurant and Catering, Merchandise and Shop, Transport, Post and Telecom, Agriculture and Forestry, Healthcare and Social care, Teaching and Research, Banking, Insurance and Finance, Business service provision, Public administration, Defense, Police and Judiciary and finally Other professions. Aiming to show the effect of this variable, each industry defined as a dummy variable. In table 3 we can see the number of participants in different industries and the average and standard deviation of desirable retirement age in each industry.

Table 3. Number and average desirable retirement age in different industries

	Count	DRA
Industry and Crafts	282	64.65 (8.41)
Construction	267	65.92 (10.86)
Hotel, Restaurant and Catering	62	63.23 (12.04)
Merchandise and Shop	181	66.28 (7.00)
Transport, Post and Telecom	191	64.17 (9.23)
Agriculture and Forestry	57	68.47 (10.41)
Healthcare and Social care	466	65.37 (6.23)
Teaching and Research	362	65.51 (5.71)
Banking, Insurance and Finance	136	65.88 (8.55)
Business service provision	125	64.00 (8.13)
Public administration, Defense, Police and Judiciary	245	64.65 (6.93)
Other professions	628	64.14 (8.55)

Table 3. Number of participants and the average and standard deviation of desirable retirement age in different industries

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[7] The questions related to industries in appendix: q2

In figure 4 shows how desired retirement age is differ across industries. The highest average of desirable retirement age is related to agriculture and forestry with 68.47 years and the lowest is related to Hotel, Restaurant and Catering which is 63.23 years. It means that people working in agricultural occupations are more likely to stay longer in the labor market compared to other industries.

Figure 4. Average DRA in different industries
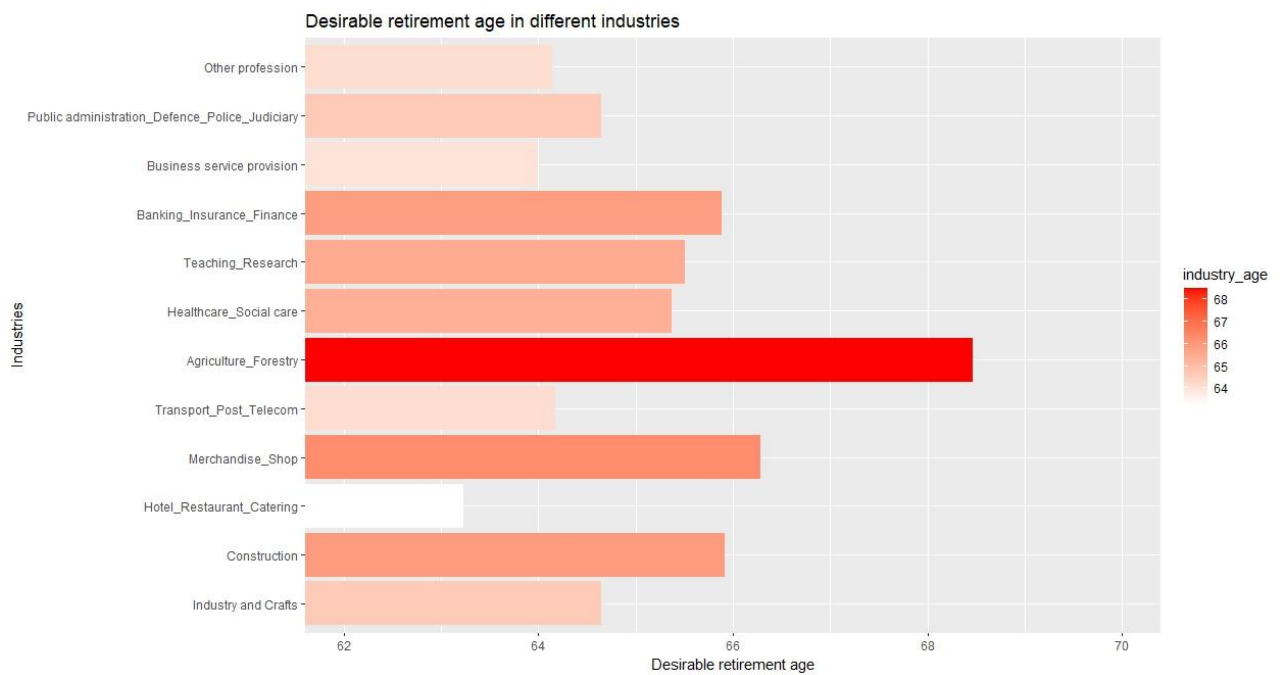
Figure 4. the average of desirable retirement age in different industries

3.2.4. Job-related variables[8]

The way a person feels about their job and their work environment is an effective factor that many people consider deciding about retirement. This group of variables is a collection of the features that affect the working condition or related to their professions, such as: income, if they master their job, if they have a leader role, if they have a stressful job, if they have variations in their tasks, if they have a complicated computer system in their work place, if they

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[8] The questions related to job-related variables in appendix: Qinnt, q10, qleder, q12, q13, and q24.

have physically demanding tasks, if they have direct connection with customers, if they have the opportunity to ask for advice from their colleagues, having the opportunity to learn new things, having self-determination at work, having job security, and experiencing age discrimination at work.

"Income". First of all, income has a direct impact on financial condition during the life and it is considered as one of the most important factors to decide about retirement timing. In this data set yearly income is measured in 9 levels[9] and the participants who did not want to mention their income or did not have information about it have been excluded from the estimations. In figure 5 we can see the distribution of income levels among the participants and the dominant group regarding the yearly income among the participants of this survey have a yearly income between 600 and 799 Norwegian kroner.

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[9] Under kr 100,000, Kr. 100.-199.000, Kr. 200.-299.000, Kr. 300.-399.000, Kr. 400.-499.000, Kr. 500.-599.000, Kr. 600.-799.000, Kr. 800.- to 1 mill., Kr. 1 mill. Or more.
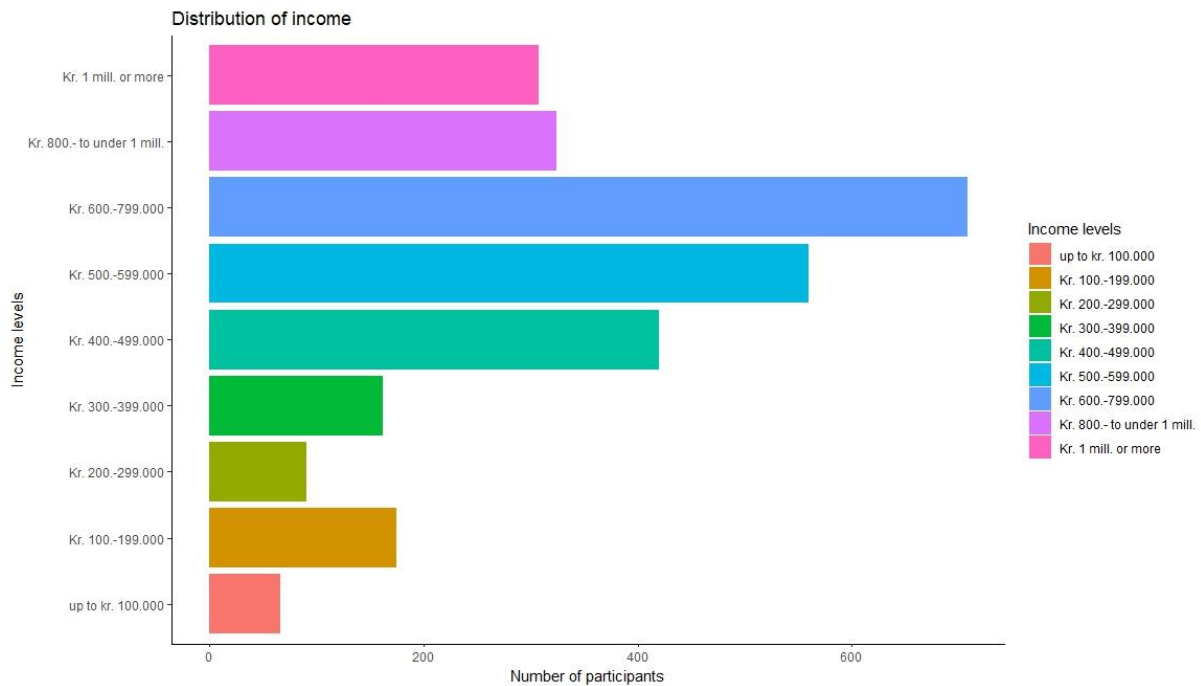
Figure 5. Distribution of income

Figure 5. Distribution of yearly income

"Master". The next variable in this section is related to a question which asks if the participants feel that they master their job. For measuring the level of mastering a scale from 1 to 5 is define. 1 means "Very good" and 5 represents "Very bad". This variable can show how they think about their abilities regarding their job tasks and if they feel they are capable of doing their tasks properly to measure the sense of self-efficacy.

"Leader". Leaders usually have more responsibility compare to other employees and these extra responsibilities can have different impacts to their retirement decisions. Therefore, it can be a worthful variable to investigate. Leadership in this study is defined as a dummy variable (1 for having a leader role and 0 otherwise).

Another subset in this section is a combination of variables to measure different feature of work characteristics like having a **"stressful"** job, having **"same tasks"** in their job, having a complicated **"computer"** system in their workplace, having **"physically"** demanding tasks, having direct connection with **"customers"**, having the opportunity to ask for **"advice"** from their colleagues, having the opportunity to **"learn new things"**, having **"self-determination"**

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at work, and having **"job insecurity"**. In order to analyse these variables, the answers are ordered in 4 levels, from 1 equals "Largely" and 4 equals "Not at all". These are the variables that affect working condition directly and they can be important for people when they decide about their retirement timing.

"Discrimination". The last variable in this part measures if the individuals faced any age discrimination in their workplace. People can have different reactions to this type of discrimination. Therefore, investigating this variable especially for older participants can be useful to learn more about the retirement decisions. The scale of the answers to this question is from 1 equals "Very often" to 5 equals "Never".

3.2.5. Motivations[10]

One of the main questions in this survey is related to the reasons to continue working after retirement age. In these questions a number of motivations are listed, and each participant rate the importance of them from 4 to 1. In this rating 1 means "very important" and 4 means "not important at all". In this set of questions, the answer "Don't know" is coded as 5. The participants who chose 5 in this section has been removed from the data set in this regression model in order to have a more accurate result. In total 324 observation has been removed in this section. Investigating the motivations behind post-retirement employment can be helpful to the policymakers to encourage the seniors to stay longer in the labor force.

The exact translation of the question is: How important are the following reasons for you to continue working after you become entitled to a pension? Is it...

The incentives consist of:

- "**Interesting**" which shows the importance of having an interesting job for staying in that occupation.
- "**Income**" represents if a well-paid job can be a good motivation to continue working after the retirement age.

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[10] The questions related to motivation in appendix: q15 and q16. The answers to these questions are combined regardless of the age groups.

- "**Environment**": The working environment also plays an important role in people's decision to retire. Working preventively with general working environment factors will indirectly have an impact on whether the seniors choose to retire or keep working. This variable shows the importance of a good working environment.

- "**Colleague**": Good colleagues and friendly connections can be another motivation to keep working even after the age of retirement.

- "**Manager**" shows the importance of the supervisor's requirement to continue working. Leadership and personnel/employer policies at the individual workplace has a great impact on when people choose to retire. It is well documented that leadership and personnel policy can have both a negative and positive impact on retirement behaviours (Østerud, 2019).

- "**Life quality**" shows if the job gives a higher quality of life to the person that prevents them to step out of their career before the retirement age.

- "**Useful**" represents a psychological motivation which encourages working longer. This motivation is if the job gives a feeling of being useful to society and how important this reason is to stay in the labor market.

- "**Reduce**" shows the importance of the opportunity to choose reduced working hours which gives the privilege of working while having more free time instead of a full-retired schedule.

- "**Arranged**": This variable shows the importance of having fixed working tasks to stay in the career after being titled as retired.

- "**Challenges**": This motivation measures how important it is to face new challenges in the career and if it can be an acceptable reason to stay longer in a specific occupation.

- "**Self-determination**": It shows the importance of having self-determination in the job and if it is effective in retirement decisions.

Table 4. the average and standard deviation of motivations

	Rate in the whole sample	Rate for over 55
Interesting	1.46 (0.73)	1.60 (0.84)
Income	2.05 (0.83)	2.12 (0.87)
Environment	1.24 (0.51)	1.30 (0.58)
Colleague	1.28 (0.54)	1.30 (0.57)
Manager	1.62 (0.83)	1.63 (0.86)
Life_quality	1.40 (0.63)	1.44 (0.69)
Useful	1.61 (0.77)	1.54 (0.76)
Reduce	2.01 (0.91)	2.03 (1.00)
Arranged	2.14 (0.94)	2.23 (1.04)
Challenges	2.08 (0.88)	2.02 (0.89)
Self-determination	1.67 (0.74)	1.57 (0.71)

Table 4. the average rate and standard deviation of motivations on the scale of 1 to 4, in the whole sample and for participants over 55

As it is showed in figure 6, on average the most important motivations to work after retirement age in this data set were good working environment and good colleagues. Having arranged work tasks had the lowest rate of importance among the motivations. It means that to continue staying in the labor market, working in a good environment is more important for the seniors. As we can see in table 4 this trend also appeared in the older workers group and these three motivations are the most significant incentives in this dataset.

Figure 6. Average rate of motivations
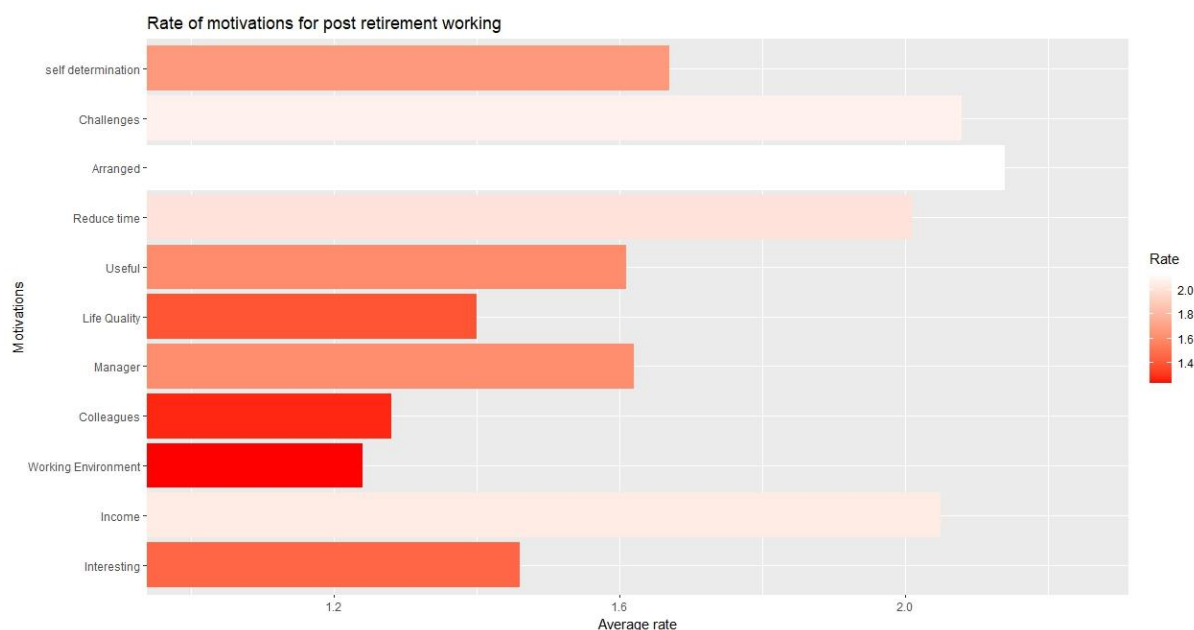
Figure 6: the average rate of importance of the motivations for working after the retirement age

4. Empirical Approach

This section consists of two main parts. The first part investigates how different factors can affect the preferred retirement timing and the second one analyzes the important incentives behind staying in the labor market after the retirement age. It can be helpful to find out about the good policies to increase the age that people prefer to step out of their career.

4.1. Effective factors on desirable retirement age

In this section, I am going to investigate the effective factors on desirable retirement age. To achieve this aim, I have introduced a linear regression model to analyze how different variables affect people's decisions regarding desired retirement age. In order to define the relation between variables the regression model of equation (1) is applied.

$$DRA_i = \beta_0 + \sum_{j=1}^{8} \beta_{1j}\, Per_{ij} + \sum_{j=1}^{11} \beta_{2j}\, Ind_{ij} + \sum_{j=1}^{14} \beta_{3j}\, Job_{ij} \qquad \text{Equation (1)}$$

In this equation, i represents individuals attended in the survey, DRA is the age that individuals prefer to retire regardless of any restrictions, Per is the combination of personal variables for retirement such as: age, gender, education, marital status, health state, the time devoted to work during a week, and the age that they believe an employee is considered as an old worker. Ind presents the industries that each individual works in and Job represents the job-related variables which have been presented in previous section.

The second regression model that has been investigated in this section defined as equation 2. In this model, the dependent variable changed into "Looking" which represents the variable "Looking forward to retirement". This variable can help to find out how willing the participants are to get retired and how they feel about that based on their condition. Investigating the result of these two equations can provide a better understanding of the effective factors of retirement decisions.

$$Looking_i = \beta_0 + \sum_{j=1}^{8} \beta_{1j}\, Per_{ij} + \sum_{j=1}^{11} \beta_{2j}\, Ind_{ij} + \sum_{j=1}^{14} \beta_{3j}\, Job_{ij} \qquad \text{Equation (2)}$$

The variables for these models are adopted from the questions of the survey "Norsk seniorpolitisk barometer" which I have arranged in different categories of Personal variables, Industries, and job-related variables. Each of these categories consist of a number of variables which is defined in previous section. In addition, I will perform robustness checks on the analysis in order to see the pure effects of working in different industries regardless of the effect of other variables which can be a feature of working in a specific industry. For example, working in agriculture industry is usually physically demanding, by omitting other variables like "physical" we can find more information about the effects of working in this industry on retirement age.

Finally, I should mention that deciding about the retirement timing, as mentioned in the theoretical section, has a complicated process and depends on many different variables and conditions based on each persons' values and situation in their life. Therefore, it is a fact that there are other factors that are not considered in this study so we cannot fully avoid omitted

variable bias. However, it is important to include as many explanatory factors as possible in order to avoid it as much as possible.

4.2. Incentives behind post-retirement employment

In this section, I will investigate the reasons behind continuing career after the retirement age to see how much each motivation is important for the post-retirement employment decision. It can help to find out about the most effective motivations and such insight can provide important information to find out which senior policy measures should be implemented or strengthened so that older people feel comfortable at work and stay in work longer. In order to do that, the individuals' answers to several questions about their career in post-retirement employment have been analysed.

The survey's questions regarding post-retirement employment are mostly related to workplace condition. Working preventively with general working environment factors will indirectly have an impact on whether the seniors choose to retire or keep working (Østerud, 2019).

In order to measure the effects of different variables on post-retirement employment the linear probability model of equation 3 is introduced.

$$Post\_ret = \beta_1\,interesting + \beta_2\,income + \beta_3\,environment + \beta_4\,colleague + \beta_5\,manager + \beta_6\,life\_quality + \beta_7\,useful + \beta_8\,reduce + \beta_9\,arranged + \beta_{10}\,challenges + \beta_{11}\,selfdetermination + \beta_0 \qquad \text{Equation (3)}$$

The dependent variable in this regression model (Post_ret) is defined as a dummy variable, 0 for picking a desirable retirement age under 67 and 1 otherwise.

The explanatory variables come from the individuals' rate for the importance of different motivations which has been described in section 3.2.5.

Additionally, the motivations behind post-retirement employment can be varied regarding different age groups and how close the person is to make this decision. Therefore, I have estimated the result of the regression model for the participants who are over 55 separately in order to see how older workers response to these motivations.

5. Results

In this section, I have reported the results of the regression models presented in equations (1), (2) and (3) and the coefficients of each variable group are interpreted and reported in different parts.

5.1. Effective factors on retirement age

The result of the variables from the regression model in equation (1) and (2) is presented in tables (5), (6) and (7).

In order to have more accurate results a number of extremely unlikely outliers are excluded, the preferred retirement ages which were picked under 45 and over 85 have been removed. In this regard, 424 observations have been excluded from the dataset. In the first column of the tables (Model 1), we can see the result of this regression considering the exclusion and Model 4 reports the result of regression model in equation (1) without the exclusion.

In the second column of these tables (Model 2) the same estimation is made for the group age of over 55 in the observations. It can help to get a better insight of the variables effects as this group are closer to retirement age or already retired. Therefore, they can have more accurate answers to the survey. Additionally, it is expected that some variables affect this age group more significantly. For example, older workers may face age discrimination more often and their decision can be affected more because of this variable while younger people may not notice it to the same extent.

Model 3 in table 6 shows the result of robustness checks to see the results of only working in industries regardless of other variables.

In the next two columns the dependent variable changed to Looking forward to retirement. Column 5 shows the result of equation (2) on the data set, while the last column presents the result of this equation for participant in the age group of over 55.

Personal variables

In this section, the result of different regression models on personal variables has been discussed.

Age is one of the most significant variables in most of the models. The older people in the sample are more likely to choose a higher DRA. Partly it can be a simple result of the fact that in some cases older people have to pick a higher age because it would be impossible for them to choose an age under their own ages while younger people are not limited in this way. On the other hand, we can say that older people are closer to the retirement age compared to younger ones, therefore they can predict their retirement age more accurately. Additionally, the coefficient of age in the model 5 is negative. It means that older people more looking forward to retirement.

As it was expected, there is a positive relation between the education and desired retirement age. As it has been mentioned in the theoretical section also, the relation between retirement timing and education can be explained in part because higher levels of education are also related to more attractive and higher income occupations and possibly better working conditions (Fisher et al, 2016). The coefficient for this variable in the first model is 0.47, it implies that by increasing one level of education, people tend to retire almost half of a year later. However, it does not affect the feelings of looking forward to or scaring of retirement significantly.

The next effective variable in retirement timing is marital status, the significant results show a negative relations between having a partner and desired retirement age. It has been mentioned that marital status had various effects in different studies. In this sample, married people preferred to be retired earlier than single participants.

In the sample, the health state is coded reversely, it means that number 1 shows a high health state and 4 represents a bad condition. As the coefficient in this regression result is negative, we can conclude that people in higher state of health prefer to retire later than other participants. Another measure for health status in this study is the number of days that participants were on sick leave during the last 12 months. The coefficient for this variable is a negative number. It means that people who were more days on sick leave prefer to retire earlier. It has a significant effect on feelings about the retirement and people with more sick leave days looking forward to being retired.

Table 5. Result of equation (1) & (2) for personal variables

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dependent variable		DRA			Looking	
Age	0.027*** (0.010)	0.382*** (0.034)		0.072*** (0.014)	-0.010*** (0.002)	0.015 (0.010)
Female	-0.311 (0.250)	-0.204 (0.347)		-0.148 (0.362)	-0.069 (0.048)	-0.028 (0.103)
Education	0.477*** (0.153)	0.376* (0.193)		0.630*** (0.220)	0.011 (0.029)	0.009 (0.057)
Married	-0.844*** (0.248)	0.470 (0.345)		-0.709** (0.356)	-0.051 (0.048)	-0.004 (0.102)
Health	-0.318*** (0.110)	-0.184 (0.148)		-0.357** (0.158)	-0.005 (0.021)	0.009 (0.044)
Sick leave	-0.387*** (0.131)	-0.330* (0.174)		-0.464** (0.189)	-0.054** (0.025)	-0.127** (0.052)
Work hour	-0.016 (0.012)	-0.022 (0.015)		-0.005 (0.017)	0.002 (0.002)	-0.0003 (0.005)
Old at	0.116*** (0.017)	0.006 (0.023)		0.179*** (0.025)	0.007** (0.003)	0.001 (0.007)
Exclusion	YES	YES		NO	YES	YES
Age limit over 55	NO	YES		NO	NO	YES
Control variables	YES	YES		YES	YES	YES
Observations	2,235	605		2,322	2,235	605
R^2	0.087	0.371		0.087	0.053	0.097

Table 5. Results from the regression models of the equations (1) and (2) with and without exclusion and the age limit of over 55 for personal variables

One of the questions in this survey asked about the opinions on the age that a person titled as old. The result from analysing this variable shows that the people who had a higher expectation prefer to be retired later. It does not affect the older age group in this data set significantly and the people with higher expectations are slightly more afraid of retirement.

In this survey, gender and weekly working hours did not have significant effects on desired retirement age. However, in statistical reports from NAV it has been stated that women had a notable higher retirement age in 2020.

Industries

The result of the equations (1) and (2) regarding different industries are reported in table 6.

Table 6. Result of equation (1) & (2) for different industries

	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
Dependent variables	DRA				Looking	
Industry and Craft	-0.484 (0.437)	-0.376 (0.584)	-0.934** (0.429)	-0.345 (0.630)	-0.014 (0.084)	-0.176 (0.174)
Construction	0.651 (0.454)	0.321 (0.636)	0.237 (0.448)	1.348** (0.650)	0.026 (0.087)	-0.048 (0.189)
Hotel, Restaurant and Catering	0.371 (0.845)	0.225 (1.626)	-0.057 (0.833)	-1.136 (1.178)	-0.154 (0.162)	-0.486 (0.484)
Merchandise and Shop	1.042** (0.525)	1.569* (0.929)	0.828 (0.510)	1.648** (0.756)	0.002 (0.101)	-0.274 (0.276)
Transport, Post and Telecom	0.173 (0.503)	-0.476 (0.661)	-0.369 (0.499)	-0.786 (0.719)	-0.028 (0.097)	-0.228 (0.197)
Agriculture and Forestry	1.678* (0.867)	2.212** (0.963)	1.697** (0.842)	2.461** (1.241)	0.217 (0.166)	0.127 (0.287)
Healthcare and Social care	0.181 (0.391)	0.457 (0.526)	-0.008 (0.371)	-0.059 (0.567)	0.075 (0.075)	0.099 (0.156)
Teaching and Research	0.237 (0.414)	-0.098 (0.551)	0.179 (0.394)	-0.349 (0.601)	-0.058 (0.080)	-0.134 (0.164)
Banking, Insurance and Finance	0.419 (0.568)	0.235 (0.721)	0.566 (0.569)	0.767 (0.813)	-0.047 (0.109)	-0.111 (0.214)
Business service provision	-0.748 (0.575)	0.469 (0.767)	-0.898 (0.580)	-1.199 (0.833)	-0.038 (0.110)	0.115 (0.228)
Public administration, Defense, Police and Judiciary	-0.070 (0.443)	0.113 (0.565)	-0.086 (0.438)	-0.683 (0.639)	0.062 (0.085)	0.085 (0.168)
Constant	57.546*** (1.615)	39.829*** (2.984)	65.443*** (0.247)	50.353*** (2.303)	2.518*** (0.310)	1.158 (0.888)
Exclusion	YES	YES	YES	NO	YES	YES
Age limit over 55	NO	YES	NO	NO	NO	YES
Control variables	YES	YES	NO	YES	YES	YES
Observations	2,235	605	2,336	2,322	2,235	605
R^2	0.087	0.371	0.009	0.087	0.053	0.097

Table 6. Results from the regression models of the equations (1) and (2) with and without exclusion and the age limit of over 55, and also robustness check for industries

It is showed that "Merchandise and Shop" and "Agriculture and Forestry" are the most effective industries regarding desired retirement age. They both show positive effects on desired retirement age, it means that in the sample, people working in these two industries preferred to retire later than others. Additionally, the coefficients for these variables are more than one which presents that people working in these industries prefer to step out of their career about one year later than others. The effects of these two industries are more notable for the participants who are over 55.

By looking at the result of robustness check (Model 3), we can find out a significant negative relation between working in "Industry and Craft" and desired retirement age. It means that people working in this industry prefer to retire almost one year earlier.

Job-related variables

In this part, the result equation (1) and (2) for job-related variables has been reported. As we can see in table 7, mastering working tasks has a significant effect on retirement decision for participants over 55. As mastering coded reversely, negative sign means by increasing the mastering level in working tasks older people prefer to retire later and they are more afraid of retirement.

Having leader roles caused feeling of scaring from retirement in both age groups but it does not affect the desired retirement age significantly.

The coefficient for having a stressful job in this investigation is positive but as the measurement for this variable in the data set is reversed, it presents that participants with stressful working condition prefer to have lower retirement age and they look more forward to retirement.

Having an occupation that requires more change adjustments significantly affects older workers in the survey. Having this feature in working life for older workers caused a lower desirable retirement age and looking forward to being retired.

As we expected from the theoretical section, having a physically demanding occupation influences the retirement decisions. The result from the regression model confirms this effect and the participants with physically demanding jobs preferred to retire earlier and looking forward to it. However, this feature does not affect the older participants significantly.

Table 7. Result of equation (1) & (2) for job-related variables

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dependent variable	DRA				Looking	
Income	-0.070	0.163		-0.189	-0.013	-0.004
	(0.085)	(0.112)		(0.121)	(0.016)	(0.033)
Master	-0.173	-0.528*		0.015	-0.056	-0.201**
	(0.203)	(0.271)		(0.290)	(0.039)	(0.081)
Leader	0.355	0.461		0.464	0.140***	0.170*
	(0.249)	(0.328)		(0.359)	(0.048)	(0.097)
Stressful	0.718***	0.473**		0.958***	0.085***	0.040
	(0.140)	(0.188)		(0.201)	(0.027)	(0.056)
Same tasks	0.059	0.136		0.415**	0.011	0.069
	(0.126)	(0.168)		(0.181)	(0.024)	(0.050)
Computer	0.196	0.230		0.095	0.014	-0.019
	(0.125)	(0.160)		(0.180)	(0.024)	(0.048)
Change adjustment	0.026	0.312*		-0.062	0.061***	0.118**
	(0.123)	(0.170)		(0.177)	(0.024)	(0.051)
Physical	0.231**	0.122		-0.036	0.050**	0.077
	(0.117)	(0.158)		(0.168)	(0.022)	(0.047)
Customer	0.042	-0.003		-0.057	-0.050*	-0.002
	(0.137)	(0.181)		(0.197)	(0.026)	(0.054)
Advice	0.153	0.515**		0.316	0.021	-0.045
	(0.167)	(0.217)		(0.241)	(0.032)	(0.065)
Learn	-0.408**	-0.165		-0.475**	-0.051	0.051
	(0.162)	(0.210)		(0.232)	(0.031)	(0.062)
Self-determination	-0.041	-0.752***		-0.279	-0.029	-0.069
	(0.172)	(0.217)		(0.245)	(0.033)	(0.064)
Insecurity	0.021	0.019		0.189	-0.033	-0.052
	(0.129)	(0.169)		(0.185)	(0.025)	(0.050)
Discrimination	-0.371***	-0.083		-0.297*	-0.013	0.048
	(0.119)	(0.153)		(0.171)	(0.023)	(0.046)
Exclusion	YES	YES		NO	YES	YES
Age limit over 55	NO	YES		NO	NO	YES
Control variables	YES	YES		YES	YES	YES
Observations	2,235	605		2,322	2,235	605
R²	0.087	0.371		0.087	0.053	0.097

Table 7. Results from the regression models of the equations (1) and (2) with and without exclusion and the age limit of over 55 for job-related variables

Having an occupation which has a direct connection with customers made the participants to fear retirement, but it does not have any significant impact on desired retirement age.

Having the opportunity to share advice in the workplace affects more significantly the older workers and having this opportunity encouraged them to pick a lower desired retirement age.

Learning new skills during the working life was another factor considered in this model. The result from this measurement showed a significant influence and people with a high level of educational working characteristics chose a higher age for retirement.

Self-determination was an important factor for participants over 55. The result of regression showed a direct relation between having this feature and desired retirement age for older workers and people with a higher self-determination in workplace preferred to stay longer in their career.

The last variable investigated in this section is experiencing age discrimination at workplace, the results showed that people facing this experience chose a higher retirement age. The reason can be that usually the people having this experience more often are older people and in table 5 we saw that older age group preferred a higher retirement age because of their limited choice or their accuracy. Therefore, this co-relation caused a higher desirable retirement age for older workers who experience age discrimination more often. The results of the model 2 shows that participants over 55 are not affected significantly by age discrimination. It can be because of other factors like age, education, and other characteristics which play much more important role to make decision about retirement timing in this age group.

5.2. Post-retirement employment

In this part the results from the regression model of the equation (3) have been reported to measure the importance of each motivation to stay longer in the labor market. These factors can be interesting for policymakers to see what they should focus on when trying to get more people into post-retirement employment.

Having an interesting job can be an encouraging factor for the person to continue working after being titled as retired. The results from the regression model shows that the people who gave a better rate to this motivation are more likely to continue working after retirement. This motivation also affects the older workers more notably to choose post-retirement employment.

Participants who gave a good rate to receiving a feeling of being useful in the society have a higher probability to work after retirement. Moreover, having new challenges in workplace is shown with statistical significance to increase the likelihood of working longer than retirement age and it can be one of the good reasons which should be improved to encourage seniors to stay longer.

Table 8: Results of equation (3)

Dependent variables	Model 1	Model 2
	Post retirement	
Interesting	-0.070*** (0.014)	-0.104*** (0.026)
Income	0.088*** (0.012)	0.116*** (0.022)
Environment	0.026 (0.026)	0.040 (0.048)
Colleague	0.022 (0.025)	0.053 (0.048)
Manager	-0.021 (0.013)	-0.033 (0.025)
Life quality	-0.020 (0.018)	-0.021 (0.033)
Useful	-0.043*** (0.015)	-0.057* (0.031)
Reduce	0.049*** (0.012)	0.033*** (0.022)
Arranged	0.032*** (0.012)	0.057*** (0.021)
Challenges	-0.055*** (0.012)	-0.048** (0.023)
Self-determination	0.004 (0.015)	-0.047 (0.030)
Constant	0.349*** (0.044)	0.317*** (0.075)
Age limit over 55	NO	YES
Observations	2,424	633
R^2	0.065	0.136

Table 8: Results from the regression model of the equation (3) on the whole data set and the age group of over 55

However, based on the result of this sample there is a reversed relation between some motivations and the probability of post-retirement employment these motivations are well-paid jobs, reduced working hours and having arranged tasks. It means that participants who gave a good rate to these motivations are less likely to work after the age of 67.

The result from the regression implies that surprisingly, a good working environment, colleagues, manager's requirement, and higher life quality do not seem to affect the decision of the participants significantly regarding working after retirement age. This might indicate that there are other factors more important to seniors to make this decision.

We can see that in most of the significant motivations, the coefficient for the older worker is higher which shows the importance of them are more remarkable specifically for this age group.

6. Conclusion

Based on the finding from this study, older people chose a higher desired retirement age which shows their accuracy in their decision or their limited choices regarding to their own age. As it was expected, health status plays a significant role on retirement timing as well as marital status. In this study, marital status had a negative relation with the preferred retirement age. However, it has been mentioned in the theoretical section that marital status can have more complicated effects based on relationships and the family's condition.

People working in "merchandise and shop" and "agriculture and forestry" preferred to work longer than others and these two industries had the most significant effects regarding retirement aging.

In terms of work characteristics stressful and physical demanding jobs were discouraging factors for staying longer in labor market. On the other hand, having the opportunity to learn new things or educational occupations motivates seniors to pick a later time for stepping out of their career.

Having an interesting job titled as the most effective factor among the incentives that investigated in this study regarding working after retirement age. Moreover, experiencing new challenges in the workplace and feeling useful for the society had a significant influence on the

likelihood of post-retirement employment. Having knowledge about these factors can signal the policymakers to find the path to motivate seniors to stay longer in the labor market.

Although in this survey male and female participants picked almost the same desired retirement age, statistics from 2020 shows that women tend to have a higher average for retirement age compare to men and the proportion of women retiring at 67 or more were noticeably higher their male counterparts.

7. References

Angrisani, M., Hurd, M. D., Meijer, E., Parker, A. M., & Rohwedder, S. (2013). Labor force transitions at older ages: The roles of work environment and personality, *Michigan Retirement Research Center Research Paper*, 295.

Armstrong-Stassen, M., & Staats, S. (2012) Gender Differences in How Retirees Perceive Factors Influencing Unretirement. *The International Journal of Aging and Human Development, 75(1),* 45-69. doi:10.2190/AG.75.1.e

August, R.A. (2011). Women's Later Life Career Development: Looking Through the Lens of the Kaleidoscope Career Model. *Journal of Career Development, 38(3*), 208-236. doi: 10.1177/0894845310362221.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191–215. doi:10.1037/0033-295x.84.2.191

Beehr, T. A. (1986). The process of retirement: A review and recommendations for future investigation. *Personnel Psychology, 39*, 31– 55. doi:10.1111/j.1744-6570.1986.tb00573.x

Beehr, T. A., Glazer, S., Nielson, N. L., & Farmer, S. J. (2000). Work and nonwork predictors of employees' retirement ages. *Journal of Vocational Behavior*, 57, 206–225. doi:10.1006/jvbe.1999.1736

Christensen, T., & Lægreid, P. (2020). Balancing Governance Capacity and Legitimacy: How the Norwegian Government Handled the COVID-19Crisis as a High Performer, *Public Administration Review, 80 (5),* 774–779. doi:10.1111/puar.13241.

De Preter, H., Van Looy, D., Mortelmans, D., & Denaeghel, K. (2013). Retirement timing in Europe: The influence of individual work and life factors. *The Social Science Journal, 50*, 145–151. doi:10.1016/j. soscij.2013.03.006

De Preter, H., Van Looy, D., & Mortelmans, D. (2014). Retirement timing of dual-earner couples in 11 European countries? A comparison of Cox and Shared Frailty models. *Journal of Family and Economic Issues, 36*, 396–407. doi:10.1007/s10834-014-9403-6

Dentinger, E., & Clarkberg, M. (2002). Informal caregiving and retirement timing among men and women gender and caregiving relationships in late midlife. *Journal of Family Issues, 23*, 857–879. doi:10.1177/019251302236598

Denton, F, Spencer, B. (2009). What is retirement? A review and assessment of alternative concepts and measures. *Canadian Journal on Aging, 28 (1),* 63–76. doi:10.1017/S0714980809090047

Desmette, D., & Gaillard, M. (2008). When a "worker" becomes an "older worker": The effects of age-related social identity on attitudes towards retirement and work. *Career Development International, 13 (2*), 168–185. doi:10.1108/13620430810860567

Dworschak, B., Buck, H., & Schletz, A. (2006). Building workplaces in line with the ageing process, In T. Tikkanen, & B. Nyhan (Eds.), *Promoting lifelong learning for older workers: An international overview*. (pp. 208-223). Luxembourg: Office for Official Publications of the European Communities.

Engelhardt, H. (2012). Late careers in Europe: Effects of individual and institutional factors. *European Sociological Review*, 28, 550– 563. doi:10.1093/esr/jcr024

EU-OSHA. (2017) Towards age-friendly work in Europe: a life-course perspective on work and ageing from EU Agencies. Luxembourg: Publications Office of the European Union. doi:10.2802/130548.

Fisher, G.G. , Chaffee1, D.S., & Sonnega, A. (2016). Retirement Timing: A Review and Recommendations for Future Research, *Work, Aging and Retirement*, 2 (2), 230–261. doi:10.1093/workar/waw001

Furunes, T., Mykletun, R. J., Solem, P. E., de Lange, A. H., Syse, A., Schaufeli, W. B., & Ilmarinen, J. (2015). Late career decisionmaking: A qualitative panel study. *Work, Aging and Retirement, 1*, 284–295. doi:10.1093/workar/wav011

Griffin, B., & Hesketh, B. (2008). Post-retirement work: The individual determinants of paid and volunteer work, *Journal of Occupational and Organizational Psychology, 81,* 101–121. doi:10.1348/096317907X202518

Gustman, A. L., & Steinmeier, T. L. (2000). Retirement in dual-career families: A structural model. *Journal of Labor Economics, 18*, 503– 545. doi:10.1086/209968

Gustman, A. L., & Steinmeier, T. L. (2005). The social security early entitlement age in a structural model of retirement and wealth. *Journal of Public Economics, 89,* 441–463. doi:10.1016/j. jpubeco.2004.03.007

Halvorsen, E., & Pedersen, A,W. (2018). Closing the gender gap in pensions: A microsimulation analysis of the Norwegian NDC pension system. *Journal of European Social Policy*,29(1), 130–143

Hayward, M.D., Hardy, M.A., & Liu, M.C. (1994). Work After Retirement: the Experiences of Older Men in the United States, *Social Science Research, 23 (1),* 82-107.

Hellevik, T., & Herlofson, K. (2020). 67+ and still working: The importance of earlier job situation and retirement plans for extended careers, *Nordic Welfare Research*, 5(2), 95–108.

Hernæs, E., Markussen, S., Piggott, J. & Røed, K. (2016). Pension reform and labor supply. *Journal of Public Economics*, 142, 39–55. https://doi.org/10.1016/j.jpubeco.2016.08.009

Herrera, M. Work and Aging: A Review from the Employer's Perspective. (2018) In R. J. Gatchel et al. (Eds.), *Handbook of Rehabilitation in Older Adults, Handbooks in Health, Work, and Disability,* (pp. 299-326). Switzerland: Springer, https://doi.org/10.1007/978-3-030-03916-5

Hovbrandt, P., Håkansson, C., Albin, M., Carlsson, G., & Nilsson, K. (2019). Prerequisites and driving forces behind anextended working life among older workers*, Scandinavian Journal of Occupational Therapy, 26 (3),* 171-183, doi: 10.1080/11038128.2017.1409800.

Hult, C., & Edlund, J. (2008). Age and labour market commitment in Germany, Denmark, Norway and Sweden. *Work, Employment & Society, 22(1),* 109-128.

Hurd, M. D., Smith, J. P., & Zissimopoulos, J. M. (2004). The effects of subjective survival on retirement and social security claiming, *Journal of applied econometrics*, 19 (6), 761-775

Karazman, R., Kloimüller, I., & Arato, P. (2003) Productive ageing – Balancing generations and managing human sustainability at work. In H. Buck, B. Dworschak (Eds*.) Ageing and work in Europe. Strategies at company level and public policies in selected European countries*. (pp. 89-98). Stuttgart: IRB.

Kim, S., Feldman, D.C., (2017). Working In Retirement: The Antecedents Of Bridge Employment And Its Consequences For Quality Of Life In Retirement. *Academy of Management Journal, 43(6)*

Kooij, D.T., de Lange, A.H., Jansen, P.G., & Dikkers, J.S. (2013). Beyond chronological age. Examining perceived future time and subjective health as age-related mediators in relation to work-related motivations and well-being. *Work & Stress, 27,* 88–105. doi:10.1080/02678373.2013.769328

Kunze, F., Raes, A. M. L., & Bruch, H. (2015). It matters how old you feel: Antecedents and performance consequences of average relative subjective age in organizations. *Journal of Applied Psychology, 100*(5), 1511–1526.

Li, Q., Guan, X., Wu, P., Wang, X., Zhou, L., Tong, Y., … Feng, Z. (2020). Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *The New England Journal of Medicine, 382(13),* 1199–1207. https://doi.org/10.1056/NEJMoa2001316

Lu, L. (2012). Attitudes towards aging and older people's intentions to continue working: A Taiwanese study. *Career Development International, 17 (1),* 83–98. doi:10.1108/13620431211201346

Madero-Cabib, I., Gauthier, J. A., & Le Goff, J. M. (2016). The influence of interlocked employment—Family trajectories on retirement timing. *Work, Aging and Retirement, 2*, 38–53. doi:10.1093/ workar/wav023

McGarry, K. (2004). Health and retirement: Do changes in health affect retirement expectations? *Journal of Human Resources*, 39, 624–648. doi:10.3368/jhr.XXXIX.3.624.

Mermin, G. B. T., Johnson, R. W., & Murphy, D. P. (2007). Why do boomers plan to work longer? *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences,* 62, S286–S294. doi:10.1093/geronb/62.5.s286

Metlife Mature Market Institute. (2006). Living longer, working longer: The changing landscape of the aging workforce—*A Metlife study.* Westport, CT: Metlife Mature Market Institute. Retrieved April 16, 2022 from https://www.smartworkforcestrategies.com/wp-content/uploads/2018/03/DeLong_MetLife_LivingLongerWorkingLongerStudy.pdf

Midtsundstad, T., Mehlum, I.S. & Hilsen, A.I. (2017). The impact of the working environment on work retention of older workers. *National report – Norway*. Fafo-paper 2017:09. Oslo: Fafo.

Mitchell, O.S., Levine,P.B, & Pozzebon, S. (1988). Retirement Differences by Industry and Occupation, *The Cerontological Society of America, 28 (4),* 545– 551.

Moen, P. (1996). A life course perspective on retirement, gender, and well-being. *Journal of Occupational Health Psychology*, 1, 131–144. doi:10.1037/1076-8998.1.2.131

Moen, P., & Flood, S. (2013). Limited engagements? Women's and men's work/volunteer time in the encore life course stage. *Social Problems*, 60, 206-233.

Mäcken, J. (2019). Work stress among older employees in Germany: Effects on health and retirement age. *PLoS ONE, 14(2),* e0211487. https://doi.org/10.1371/journal.pone.0211487

NAV. (2020). Utviklingen i alderspensjon per 31. desember 2020 by Bjørn Halse.

Nilsson, K. (2016). Conceptualisation of ageing in relation to factors of importance for extending working life – a review, *Scandinavian Journal of Public Health, 44*, 490–505. doi:10.1177/1403494816636265.

Nilsson, K., Ostergren, P.O., Kadeford, R., & Albin, M. (2016) Has the participants of older employees in the workforce increased? Study of the total Swedish population regarding exit from working life. *Scandinavian Journal of Public Health, 44*,506-516. doi: 10.1177/1403494816637262.

Nobahar, M., Ahmadi, F., Alhani, F., & Khoshknab, M. F. (2015). Work or retirement: Exploration of the experiences of Iranian retired nurses. *Work (Reading, Mass.), 51*(4), 807–816. https://doi.org/10.3233/WOR-141943

Norsk seniorpolitisk barometer report. (2020), Utarbeidet av Ipsos for Senter for seniorpolitikk (SSP)

NOVA report 6/2012, "Ny kunnskap om aldring og arbeid" by Per Erik Solem

Oakman, J., & Howie, L. (2013). How can organisations influence their older employees' decision of when to retire? *Work, 45(3),* 389– 397. doi:10.3233/WOR-2012-1403.

Peiró, J. M., Tordera, N., & Potocnik, K. (2012). Retirement practices in different countries. In M. Wang (Ed.), *The Oxford handbook of retirement* (pp. 510–542). New York:Oxford University Press.

Pleau, R. L. (2010). Gender differences in postretirement employment. *Research on Aging, 32*, 267-303. doi:10.1177/0164027509357706.

Schlosser, F., Zinni, D., & Armstrong-Stassen, M. (2012). Intention to unretire HR and the boomerang effect. *Career Development International, 17 (2),* 149-167. dio: 10.1108/13620431211225331.

Schmidt, J. A., & Lee, K. (2008). Voluntary retirement and organizational turnover intentions: The differential associations with work and non-work commitment constructs. *Journal of Business and Psychology, 22*, 297–309. doi:10.1007/s10869-008-9068-y

Schuetze, H.J. (2015). Self-Employment and Retirement in Canada: The Labour Force Dynamics of Older Workers. *Canadian Public Policy, 41 (1),* 65-85. doi: 10.3138/cpp.2013-070

Shultz, K. S., Morton, K. R., & Weckerle, J. R. (1998). The influence of push and pull factors on voluntary and involuntary early retirees' retirement decision and adjustment. *Journal of Vocational Behavior, 53*, 45–57. doi:10.1006/jvbe.1997.1610

Siegrist, J., Wahrendorf, M., von dem Knesebeck, O., Jurges, H., & Borsch-Supan, A. (2007). Quality of work, well-being, and intended early retirement of older employees—Baseline results from the SHARE Study. *The European Journal of Public Health, 17*, 62–68. doi:10.1093/eurpub/ckl084

Simpson, M., Richardson, M., & Zorn, T. E. (2012). A job, a dream or a trap? Multiple meanings for encore careers. *Work, Employment and Society, 26(3),* 429–446. https://doi.org/10.1177/0950017012438581

Steger, M. F., & Dik, B. J. (2009). If one is looking for meaning in life, does it help to find meaning in work? *Applied Psychology: Health and Well-Being, 1*, 303–320. doi:10.1111/j.1758-0854.2009.01018.x

Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring meaningful work: The work and meaning inventory. *Journal of Career Assessment, 20*, 322–337. doi:10.1177/1069072711436160

Sullivan, S.E., & Ariss, A.A. (2019). Employment After Retirement: A Review and Framework for Future Research, *Journal of Management,* 45 (1), 262–284. doi:10.1177/0149206318810411

Templer, A., Armstrong-Stassen, M., & Cattaneo, J. (2010). Antecedents of older workers' motives for continuing to work. *Career Development International, 15*, 479–500. doi:10.1108/13620431011075349

Topa, G., & Alcover, C-M. (2015). Psychosocial factors in retirement intentions and adjustment: a multi-sample study. *Career Development International, 20 (4),* 384-408. doi:10.1108/CDI-09-2014-0129.

van Dam, K., van der Vorst, J. D. M., & van der Heijden, B. I. J. M. (2009). Employees' intentions to retire early a case of planned behavior and anticipated work conditions. *Journal of Career Development, 35*, 265–289. doi: 10.1177/0894845308327274

van Solinge, H., & Henkens, K. (2014). Work-related factors as predictors in the retirement decision-making process of older workers in the Netherlands. *Ageing and Society, 34*, 1551–1574. doi:10.1017/ s0144686x13000330

Virtanen, M., Oksanen, T., Pentti, J., Ervasti, J., Head, J., Stenholm, S., Vahtera, J., Kivimaki, M. (2017). Occupational class and working beyond the retirement age: a cohort study. *Scandinavian Journal of Work, Environment & Health, 43(5),* 426-435.

Wang, M., & Shi, J. (2014). Psychological research on retirement. *Annual Review of Psychology*, 65, 209–233. doi:10.1146/annurev-psych-010213-115131

Wang, M., & Shultz, K. S. (2010). Employee retirement: A review and recommendations for future investigation. *Journal of Management, 36*, 172–206. doi:10.1177/0149206309347957

Wöhrmann, A. M., Deller, J., & Wang, M. (2014). Postretirement career planning: Testing a model based on social cognitive career theory. *Journal of Career Development, 41*, 363-381. doi:10.1177/0894845313507749.

Wöhrmann, A. M., Deller, J., & Wang, M. (2013). Outcome expectations and work design characteristics in post-retirement work planning. *Journal of Vocational Behavior, 83*, 219–228. doi:10.1016/j.jvb.2013.05.003.

Østerud, K. (2019). How can we make more people want to work longer? Is there a blueprint for achieving this? SSP MEMORANDUM 3/2019.

8. Appendix

Survey questions in Norwegian:

Hva er din alder? INTERVIEWER INSTRUCTIONS NOTER ANTALL ÅR ___ [NUMERIC]

Qkjonn [PROG: SA, ANSWER REQUIRED] Så vil jeg gjerne registrere noen bakgrunnsopplysninger for den statistiske analysen vi skal gjøre. Kjønn INTERVIEWER INSTRUCTIONS REGISTRER 1. Mann 2. Kvinne

QREGION [PROG: SA, ANSWER REQUIRED] Fylkesfordeling Hvilket fylke bor du i? 1. Oslo (3) 2. Viken (30) 3. Innlandet (34) 4. Vestfold og Telemark (38) 5. Agder (42) 6. Rogaland (11) 7. Vestland (46) 8. Møre og Romsdal (15) 9. Trøndelag (50) 10. Nordland (18) 11. Troms og Finnmark (54) Qpost [PROG: NUMERIC, (AUTOCODE POSTAL CODE), ANSWER REQUIRED] Stemmer det at ditt postnummer er … Noter postnr. ____ [NUMERIC]

q2 [PROG: SA, ANSWER REQUIRED] Først noen spørsmål om din yrkesaktivitet. Innen hvilken bransje arbeider du? 1. Industri/ Håndverk 2. Bygg/ Anlegg 3. Hotell/ Restaurant/ Servering 4. Varehandel/ Butikk 5. Samferdsel/ Transport/ Post/ Tele 6. Jordbruk/ Skogbruk 7. Helsevesen/ Sosialomsorg 8. Undervisning/ Forskning 9. Bank/ Forsikring/ Finans 10. Forretningsmessig tjenesteyting 11. Offentlig administrasjon/ Forsvar/ Politi/ Rettsvesen 12. Annet yrke qyrke_helse

[PROG: SA, ONLY ASK IF q2= 7, ANSWER REQUIRED] Hvilket yrke har du? 1. Sykepleier 2. Helsefagarbeider 3. Hjelpepleier 4. Annet yrke

qyrke_undervisning [PROG: SA, ONLY ASK IF q2= 8, ANSWER REQUIRED] Hvilket yrke har du? 1. Lærer i grunnskolen 2. Lærer i videregående skole 3. Lærer annet sted enn grunnskole eller videregående skole 4. Annet yrke

q3 [PROG: SA, ANSWER REQUIRED] Arbeider du i statlig sektor, kommune/fylkeskommune eller i privat sektor? 1. Statlig sektor 2. Kommune/Fylkeskommune 3. Privat sektor 4. Andre svar

qpermittert_i dag [PROG: SA, ANSWER REQUIRED] Er du helt eller delvis permittert fra jobben din pr. i dag? 1. Ja, helt permittert 2. Ja, delvis permittert 3. Nei

q8 [PROG: NUMERIC RANGE: 1-99, ANSWER REQUIRED] Hvor mange timer pr. uke arbeider du vanligvis? Dvs. i gjennomsnitt siste fire arbeidsuker. Dersom du er permittert fra jobben din svarer du for jobbsituasjonen før permittering, altså de siste fire arbeidsuker før permittering. INTERVIEWER INSTRUCTIONS NOTER ANTALL TIMER, PRØV Å FÅ I.O. TIL Å OPPGI ANTALL TIMER INTERVIEWER INSTRUCTIONS IKKE LES OPP VET IKKE/VIL IKKE OPPGI NOTER ANTALL TIMER: ___[NUMERIC] -99.VET IKKE/VIL IKKE OPPGI [EXCLUSIVE]

qleder [PROG: SA, ANSWER REQUIRED] Har du lederoppgaver i jobben din? 1. Ja 2. Nei

qleder_antall [PROG NUMERIC: RANGE 0-1000, ONLY ASK IF qleder=1, ANSWER REQUIRED] Omtrent hvor mange ansatte, på ett eller flere nivåer under deg, er du overordnet for? NOTER ANTALL ANSATTE_ [NUMERIC] -99. VET IKKE/VIL IKKE OPPGI [EXCLUSIVE]

q9 Så noen spørsmål om arbeidslivet ditt. [PROG: SA, ANSWER REQUIRED] Gleder du deg til å gå på jobben? 1. Ja, alltid 2. Ja, av og til 3. Sjelden 4. Nei, aldri 5. Vet ikke

q9_1 [PROG: SA, ANSWER REQUIRED] Hender det at du blir sliten av jobben? 1. Ja, alltid 2. Ja, av og til 3. Sjelden 4. Nei, aldri 5. Vet ikke

q10 [PROG: SA, ANSWER REQUIRED] Hvor godt føler du at du mestrer de arbeidsoppgavene du har? Mestrer du dem...? INTERVIEWER INSTRUCTIONS LES OPP, MED UNNTAK AV VET IKKE 1. Meget godt 2. Ganske godt 3. Hverken godt eller dårlig 4. Litt dårlig 5. Meget dårlig 6. Vet ikke INTERVIEWER INSTRUCTIONS IKKE LES OPP

q11 [PROG: SA, ANSWER REQUIRED] Gleder eller gruer du deg til å gå av med pensjon, dvs. tre helt ut av arbeidslivet? 1. Gleder meg mye 2. Gleder meg litt 3. Verken gleder eller gruer meg 4. Gruer meg litt 5. Gruer meg mye 6. Har ikke tenkt på det ennå

Q11_1 [PROG: SA, ANSWER REQUIRED] Hvor viktig vil du si at ditt arbeid er for deg nå for tiden? Er det… INTERVIEWER INSTRUCTIONS LES OPP, MED UNNTAK AV VET IKKE 1. Meget viktig 2. Ganske viktig 3. Mindre viktig 4. Ikke viktig 5. Vet ikke/Ikke aktuelt INTERVIEWER INSTRUCTIONS IKKE LES OPP

q12 [PROG: MATRIX, SA PER ROW, ANSWER REQUIRED] I hvor stor grad er arbeidet ditt preget av følgende? Er det i stor grad, i noen grad, i liten grad eller slett ikke INTERVIEWER INSTRUCTIONS LES OPP STATEMENTS/ROW 1. En oppjaget og masete arbeidssituasjon 2. Lite varierte arbeidsoppgaver 3. Datasystemer som er vanskelig å lære 4. Endringer og omstillinger 5. Nye krav til kompetanse 6. Fysisk krevende arbeid 7. Stillesittende arbeid 8. Arbeid med mennesker (som kunder, klienter, brukere mv.) 9. Hjemmekontor SCALE 1. I stor grad 2. I noen grad 3. I liten grad 4. Slett ikke

q13 [PROG: MATRIX, SA PER ROW, ANSWER REQUIRED] I hvor stor grad opplever du følgende i ditt arbeid? Er det i stor grad, i noen grad, i liten grad eller slett ikke? INTERVIEWER INSTRUCTIONS LES OPP STATEMENTS/ROW 1. Kollegaer spør deg om råd 2. Du får mulighet til å lære nye ting 3. Du har selvbestemmelse i jobben 4. Mulighet til å få nye arbeidsoppgaver hvis du ønsker det 5. Usikkerhet om å beholde jobben SCALE 1. I stor grad 2. I noen grad 3. I liten grad 4. Slett ikke

Q13_1 [PROG: SA, ANSWER REQUIRED] Har du deltatt i kurs, opplæring eller utdanning gjennom jobben din i løpet av de siste 12 måneder? 1. Ja 2. Nei 3. Husker ikke

q15 [PROG: MATRIX, SA PER ROW, ONLY ASK IF q1= 16-61, ANSWER REQUIRED] INTERVIEWER INSTRUCTIONS TIL PERSONER UNDER 62 ÅR: Hvor viktige er følgende grunner for deg for at du skal fortsette i arbeid etter at du får rett til pensjon? Er de........ INTERVIEWER INSTRUCTIONS LES OPP SKALAEN, MED UNNTAK AV VET IKKE STATEMENTS/ROW 1. At arbeidet er interessant 2. At jobben er godt betalt 3. At arbeidsmiljøet er godt 4. At man har gode arbeidskamerater / kolleger 5. At nærmeste leder ønsker at du skal fortsette 6. At arbeidet gir økt livskvalitet 7. At jobben bidrar til at jeg føler meg nyttig i samfunnet 8. At jeg har mulighet til redusert arbeidstid 9. At jeg har tilrettelagte arbeidsoppgaver 10. At jeg får nye utfordringer 11. At jeg har selvbestemmelse i jobben SCALE 1. Meget viktig 2. Ganske viktig 3. Mindre viktig 4. Ikke viktig 5. Vet ikke/Ikke aktuelt INTERVIEWER INSTRUCTIONS IKKE LES OPP

q16 [PROG: MATRIX, SA PER ROW, ONLY ASK IF q1=62-99, ANSWER REQUIRED] INTERVIEWER INSTRUCTIONS TIL PERSONER OVER 62 ÅR: Hvor viktige er følgende grunner for deg for at du har fortsatt i arbeid etter at du fikk rett til pensjon? Er de........ INTERVIEWER INSTRUCTIONS LES OPP SKALAEN, MED UNNTAK AV VET IKKE STATEMENTS/ROW 1. At arbeidet er interessant 2. At jobben er godt betalt 3. At arbeidsmiljøet er godt 4. At man har gode arbeidskamerater / kolleger 5. At nærmeste leder ønsker at du skal fortsette 6. At arbeidet gir økt livskvalitet 7. At jobben bidrar til at jeg føler meg nyttig i samfunnet 8. At jeg har mulighet til redusert arbeidstid 9. At jeg har tilrettelagte arbeidsoppgaver 10. At jeg har fått nye utfordringer 11. At jeg

har selvbestemmelse i jobben SCALE 1. Meget viktig 2. Ganske viktig 3. Mindre viktig 4. Ikke viktig 5. Vet ikke/Ikke aktuelt INTERVIEWER INSTRUCTIONS IKKE LES OPP

q17 [PROG NUMERIC: RANGE 16-99, ANSWER REQUIRED] Ved hvilken alder kunne du tenke deg å tre helt ut av arbeidslivet hvis du selv kunne velge helt fritt? INTERVIEWER INSTRUCTIONS NOTER ALDER, PRØV Å FÅ I.O. TIL Å OPPGI ALDER INTERVIEWER INSTRUCTIONS IKKE LES OPP VET IKKE/VIL IKKE OPPGI NOTER ALDER. __ [NUMERIC] -99. VET IKKE/VIL IKKE OPPGI [EXCLUSIVE]

q21 [PROG NUMERIC RANGE: 15-99, ANSWER REQUIRED] Så noen spørsmål om det å bli eldre i arbeidslivet Ved hvilken alder vil du anslå at folk begynner å bli regnet som "eldre" i arbeidslivet? INTERVIEWER INSTRUCTION IKKE LES OPP VET IKKE/VIL IKKE OPPGI INTERVIEWER INSTRUCTIONS NOTER ANTALL ÅR. __ [NUMERIC] -99. VET IKKE/VIL IKKE OPPGI [EXCLUSIVE]

q22 [PROG: SA, ANSWER REQUIRED] Oppfatter du deg selv som ¨eldre¨ i arbeidslivet? 1. Ja 2. Nei 3. Tvil/ Vet ikke

q23 [PROG: SA, ANSWER REQUIRED] Tror du at din arbeidsgiver oppfatter deg som ¨eldre¨ i arbeidslivet? 1. Ja 2. Nei 3. Tvil/ Vet ikke

q23_1 [PROG: SA, ANSWER REQUIRED] Dersom du kunne velge å jobbe i et arbeidslag (team) med mange under 30 år eller et med mange over 60 år, hva ville du like best? 1. Mange under 30 år 2. Mange over 60 år 3. Vet ikke

q24 [PROG: SA, ANSWER REQUIRED] Så noen spørsmål om diskriminering i arbeidslivet. Hvor ofte har du opplevd at det foregår diskriminering i arbeidslivet på grunn av alder? Er det svært ofte, ofte, av og til, sjelden eller aldri? 1. Svært ofte 2. Ofte 3. Av og til 4. Sjelden 5. Aldri 6. Ingen formening

q25 [PROG: SA, ANSWER REQUIRED] Har du selv opplevd å bli diskriminert i arbeidslivet på grunn av for høy alder i løpet av de siste 2 årene? 1. Ja 2. Nei 3. Tvil/ Vet ikke

q26 [PROG: MATRIX, SA PER ROW, ANSWER REQUIRED] Hvor ofte har du opplevd at de forholdene jeg nå skal lese opp skjer i arbeidslivet? Er det svært ofte, ofte, av og til, sjelden eller aldri? INTERVIEWER INSTRUCTIONS LES OPP STATEMENTS/ROW 1. Eldre forbigås ved forfremmelser og intern rekruttering 2. Eldre får sjeldnere være med på kurs og opplæring i arbeidstiden 3. Yngre arbeidstagere blir foretrukket når ny teknologi eller nye arbeidsmåter skal innføres 4. Eldre får mindre lønnsøkninger enn yngre SCALE 1. Svært ofte 2. Ofte 3. Av og til 4. Sjelden 5. Aldri 6. Ingen formening

q27 [PROG: MATRIX, SA PER ROW, ANSWER REQUIRED] Jeg skal nå lese opp noen påstander og vil at du for hver av dem skal si om du er helt enig, delvis enig, hverken enig eller uenig, delvis uenig eller helt uenig. INTERVIEWER INSTRUCTIONS LES OPP STATEMENTS/ROW 1. Når en bedrift må nedbemanne, bør eldre arbeidstakere kunne sies opp før yngre 2. Arbeidstakere over 60 år har minst like gode arbeidsprestasjoner som de under 60 år 3. Arbeidstakere over 60 år er minst like interessert i å lære noe nytt som de under 60 år 4. Mange 70-åringer kan yte like mye i jobb som folk som er 10-15 år yngre 5. Eldre arbeidstakere som kan ta ut pensjon bør trekke seg for å frigjøre jobber til unge arbeidssøkere 6. Det er rimelig at folk må jobbe lenger når forventet levealder øker SCALE 1. Helt enig 2. Delvis enig 3. Hverken enig eller uenig 4. Delvis uenig 5. Helt uenig 6. Vet ikke/Kan ikke svare

q28 [PROG: SA, ANSWER REQUIRED] Har du inntrykk av at arbeidstakere i 50-årsalderen er meget eller ganske ettertraktet på dagens arbeidsmarked, eller er de lite ettertraktet? 1. Meget ettertraktet 2. Ganske ettertraktet 3. Lite ettertraktet 4. Vet ikke

q34 [PROG: SA, ONLY ASK IF q1=50-72, ANSWER REQUIRED] INTERVIEWER INSTRUCTIONS TIL PERSONER OVER 50 ÅR: Hvor sannsynlig er det at du vil fortsette i arbeid frem til fylte 72 år? 1. Meget sannsynlig 2. Ganske sannsynlig 3. Lite sannsynlig 4. Ikke sannsynlig i det hele tatt 5. Vet ikke

Qinnt [PROG: SA, ANSWER REQUIRED] Hva vil du anslå din personlige brutto samlede inntekt til pr. år? Altså all samlet inntekt før skatt og fradrag. 1. Inntil kr. 100.000 2. Kr. 100.-199.000 3. Kr. 200.-299.000 4. Kr. 300.-399.000 5. Kr. 400.-499.000 6. Kr. 500.-599.000 7. Kr. 600.-799.000 8. Kr. 800.- til under 1 mill. 9. Kr. 1 mill. eller mer 10. Ville ikke svare 11. Visste ikke

Qstatus [PROG: SA, ANSWER REQUIRED] Er du .... INTERVIEWER INSTRUCTIONS LES OPP 1. Ugift 2. Gift/Partner/Samboer 3. Enke/Enkemann 4. Skilt/Separert

QUtd [PROG: SA, ANSWER REQUIRED] Hva er din høyeste utdannelse? INTERVIEWER INSTRUCTIONS ETT SVAR 1. Grunnskole-/ Realskolenivå 2. Videregående skole/ Gymnasnivå 3. Universitet/ Høyskole, lavere grad (Bachelor, Cand.mag, Høyskoleutdanning uten sivil…grad, f.eks. Sykepleier, Lærer, Politi etc.) 4. Universitet/ Høyskole, høyere grad (Master, Hovedfag, høyskoleutdanning med sivil…grad, f.eks. Sivilingeniør, Siviløkonom etc.)

Qhelse [PROG: SA, ANSWER REQUIRED] Vil du si at din helse stort sett er…… INTERVIEWER INSTRUCTIONS LES OPP, MED UNNTAK AV VIL IKKE SVARE 1. Utmerket 2. Meget god 3. God 4. Nokså god 5. Dårlig 6. Vil ikke svare INTERVIEWER INSTRUCTION Ikke les opp

Qsykdom [PROG: SA, ANSWER REQUIRED] Omtrent hvor mange dager har du vært borte på grunn av egen sykdom de siste 12 måneder? INTERVIEWER INSTRUCTIONS LES OPP, MED UNNTAK AV HUSKER IKKE/VIL IKKE SVARE 1. 1-9 dager 2. 10-20 dager 3. Mer enn 20 dager 4. Ingen dager 5. Husker ikke/Vil ikke svare INTERVIEWER INSTRUCTION Ikke les opp