

# The effects of population aging, external shocks, and job uncertainty on job performance of older workers in the Netherlands

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# Summary



Humans are living to a vastly older age than ever before. In the preceding two centuries, the average life expectancy in high-income countries has increased significantly, and it is estimated that this increase continues in the forthcoming years.

Despite this positive development, an aging population also presents an enormous challenge to sustain social security arrangements in welfare states, such as the public pension system. This is because workers pay taxes and pension premiums to provide an income for retired persons and to support the dependent population. Population aging, in combination with other demographic developments such as decreasing fertility, results in an increasing old-age-dependency ratio, where fewer workers financially support the older population.

One approach to pay for the increasing public expenditure is to generate more economic growth. Among others, economic growth results in more jobs and higher incomes, and, therefore, it results in higher taxes and revenues from premiums that can accommodate higher pension and healthcare spending. Since economic growth is currently relatively low, public policy is required to stimulate economic growth.

Labor productivity is an important source of economic growth. When more workers perform better in their work, thus when individual job performance increases, the overall labor productivity of a society is also expected to increase. To stimulate economic growth, an increase in individual job performance and overall labor productivity is essential.

As explained in **Chapter 1**, this dissertation investigates the effects of the demographic trend of population aging, two external shocks, namely a pension reform that increased the retirement age and a recent recession, and a trend toward more flexible types of employment that lead to more job uncertainty, on the job performance of older workers in the Netherlands. This dissertation focusses on two aspects of job performance, namely job satisfaction and self-assessed job performance. It is relevant to study these effects on job performance because job performance determines labor productivity, and labor productivity is an important source of economic growth that can pay for the costs of sustaining the public pension system.

Chapter 2, Chapter 3, and Chapter 4 report on the external shock of changes in legislation on pension entitlements. Subsequently, Chapter 5 investigates the external shock of a recession, and Chapter 6 addresses the trend of increasing job insecurity.

The objective of **Chapter 2** is to investigate the empirical evidence on the effects of increasing the retirement age on the health, well-being, and labor force participation of older workers.

Many governments have reformed their public pension system to address the challenge of rapid population aging and to decrease the financial burden of the public Pay-As-You-Go (hereafter PAYG) pension system. Overall, these pension reforms limit the workers' options to early retirement and delay their entitlement to pension benefits.

Despite that there remains an ongoing discussion and discontent about the potential effects of such policy reforms in society, in the literature, the effects of increasing the statutory retirement age on the health, well-being, and labor force participation remain unknown. Also, no systematic literature review has yet been performed on the effects of increasing the retirement age on the health and well-being of older workers. Because chronic diseases and other health problems become more prevalent at a higher age, it is relevant to investigate how older workers can be facilitated and engaged to continue working healthily and productively. Also, it is relevant to know whether these pension reforms that increase the retirement age have unintended adverse effects on the cognitive and physical functioning of older workers, which may limit their ability to work productively. Therefore, Chapter 2 reports on a qualitative systematic literature review that investigated the empirical evidence on the effects of increasing the retirement age on the health, well-being, and labor force participation of older workers.

In May 2019, a broad multi-disciplinary literature search, which involved the databases EconLit, PsycINFO, PubMed, and SocINDEX, was performed. In addition, snowballing using the reference list of the included studies was performed to identify additional publications that were not indexed by the databases mentioned above. Studies were assessed on reporting the effects on health, well-being, labor force participation, and the perception of the retirement age, among older workers. Both causal and non-causal empirical studies were included.

This yielded 19 publications that were included in the analysis. Twelve studies estimated the effect of an increase of the statutory retirement age, and seven studies examined working beyond the retirement age. Fourteen distinct outcomes were reported that were within the scope of this systematic literature review. These were classified into health-related outcomes, well-being, and the effects on labor force participation and the perception of the retirement age. A vast majority of the publications involved participants from a country in the European Union (hereafter EU).

The findings in Chapter 2 show that the pension reform that increased the retirement age has increased the labor force participation among older workers, and that this pension reform has increased their preferred and expected retirement age in the direction of the public pension reform. There is, however, inconsistent evidence on the effects of an increase of the retirement age on the health and well-being of older workers, and this evidence is also scarce. This may be explained by inconsistent operationalizations of health. Also, results on well-being may suffer from selection bias, where less satisfied workers may decide to retire earlier or receive income replacement from other social security schemes such as sickness benefits, while predominantly satisfied workers continue labor force participation beyond retirement.

The objective of **Chapter 3** is to estimate the causal effect of the recently increased statutory retirement age on job satisfaction among older workers in the Netherlands.

The 2012 pension reform in the Netherlands has increased the statutory retirement age and delayed the eligibility to pension benefits. In addition, workers were obliged to continue paying social contributions and premiums for voluntary pension schemes, while the size of these contributions was also increased. Pension benefits were not increased accordingly but were later decreased. This pension reform has met with fierce public opposition and resistance in the Netherlands.

It remains unclear how the 2012 pension reform that increased the retirement age has affected the job satisfaction of older workers in the Netherlands. In Chapter 3, job satisfaction was operationalized as overall job satisfaction and satisfaction with the organization's personnel policy. The investigation of the effect on job satisfaction is important, because job satisfaction is associated with many positive labor market outcomes and retirement decisions, which are instrumental in increasing job performance and labor productivity. Also, satisfied workers are more likely to voluntarily continue labor force participation beyond retirement.

Observational data from the 2012 wave of the Arbeidsaanbodpanel (Labor Supply Panel, hereafter AAP) Werkenden was matched with administrative data. A regression discontinuity design was used to analyze the effect of the increase in retirement age on the two operationalizations of job satisfaction. Date of birth regulated to what extent the pension reform applied to the worker. The date of birth was, therefore, used as a sharp cutoff to assign workers to the intervention or comparison group. The intervention was prolonged labor participation. This resulted in five subsequent analysis groups. Among others, we controlled for the distance between the date of birth and the date of cutoff using multiple order polynomials.

The sample size of each analysis group ranged from 50 to 95 participants. In all analysis groups, the participants in the intervention and comparison group had comparable characteristics. Overall, participants had moderate to high job satisfaction. Also, a clear discontinuity was observed for both operationalizations of job satisfaction in each analysis group.

Chapter 3 finds no evidence that the increase in retirement age, and the delayed right to claim the accrued pension benefits, have significantly affected overall job satisfaction or satisfaction with the organization's personnel policy of older workers. Therefore, the findings do not provide support for the societal opinion that the policy reform did negatively impact job satisfaction. This finding is remarkable because the regression discontinuity plots clearly indicate a discontinuity for both operationalizations of job satisfaction in each analysis group. The findings may be explained by the relatively small samples, low statistical power, not including the differences in preferences for retirement age, and not considering an extensive set of control variables that may determine job satisfaction.

The objective of **Chapter 4** is to identify the personal and work-related determinants of the preference toward earlier or later retirement, and how these determinants and preferences toward retirement have changed over time.

Many countries have already increased the statutory retirement age and some other governments are still planning such pension reforms. However, there is a lack of evidence on the preferences for the desired retirement age of workers. This is also supported by the strong ongoing resistance in society against compulsory later retirement. Studying the difference between the preferred and expected retirement age of workers allows the identification of earlier or later retirement preferences. Also, it remains unknown whether and how pension reforms that increase the statutory retirement age influence the desired retirement age.

Therefore, it is relevant to investigate the personal and work-related characteristics that determine the preference for earlier or later retirement. This may also provide more insight into how subgroups of older workers can be facilitated, persuaded, and incentivized to continue working to an older age. In addition, because these preferences may not be static but may change over time, for example, due to an external shock, we used the external shock of the 2013 pension reform in the Netherlands to investigate how these determinants and preferences toward retirement have changed over time after a pension reform.

Data from the 2010, 2012, and 2014 wave of the AAP Werkenden were used. The effect of 14 predictors on the ordinal preference toward retirement was evaluated cross-sectionally using ordered logit regression. These analyses were performed for two groups, namely for the entire sample and for a subsample of workers who are of age 50 or older.

Chapter 4 finds that the preference toward retirement is primarily explained by personal characteristics, job satisfaction, and net income. Workers with a university diploma, a high level of job satisfaction, and a higher net income are more likely to prefer later retirement. However, earlier retirement is preferred by women and workers living with a partner. Furthermore, the preference toward the earlier retirement age has increased over time, which suggests that the Dutch 2013 pension reform may have had adverse effects by influencing the perception of retirement by workers toward earlier retirement.

The objective of **Chapter 5** is to investigate the effect of the 2008-2013 recession on job satisfaction in the Netherlands, and to assess how job satisfaction changed over time.

Between 2008 and 2013, the Netherlands was confronted by a severe recession. Recessions have a negative effect on many areas of life, including human health. However, since only few studies have been performed and these studies have also reported inconsistent results, it remains unknown whether recessions have a negative effect on job satisfaction. Job satisfaction has consistently been associated with a multitude of labor market outcomes, such as the job performance of workers.

In addition, because both the external shock of a recession and low job satisfaction determine labor productivity, it is relevant and important to investigate how recessions impact job satisfaction. The understanding of the effect of a recession on job satisfaction is essential

to develop effective policies that help governments and organizations to anticipate or even prevent negative effects that future financial crises have on the job satisfaction of workers.

Furthermore, little is known about how the job satisfaction of workers changes throughout a recession. Such understanding is important because it may support policies to protect subgroups of workers at the moment when they are most vulnerable.

Because the recession in the Netherlands occurred from 2008 to 2013, data from six waves from the AAP Werkenden were used to perform the analyses before (2004, 2006), during (2008, 2010, 2012), and after (2014) the recession. The Blinder-Oaxaca decomposition technique was used to decompose the ordinal variable job satisfaction into the part of the differential in means of the outcome that can be explained by the differences in observed characteristics of the two groups, and a part that can be explained by the impact of the predictors on the outcome variable. Nine variables were included in the analysis to explain the differences in job satisfaction. Analyses were performed cross-sectionally by including all participants of each wave, and longitudinally by matching participants that participated in two subsequent waves. For both, five analyses were performed to decompose the difference in job satisfaction between pairs of consecutive data waves.

We find that the average job level and average level of education of workers increased over time. Also, workers more often became precarious workers who have a temporary contract. In addition, the share of civil servants decreased. In all data waves, most workers were either satisfied or very satisfied with their job, and the share of very satisfied workers increased as time progressed.

Chapter 5 finds that the recession had a positive effect on job satisfaction in the Netherlands, and that job satisfaction increased during this recession. However, once the recession ended, job satisfaction decreased again. Also, the composition of workers changed with respect to job level, where job level increased during the recession, which may explain the change in job satisfaction. No individual predictors had a robust effect on the difference in job satisfaction. This suggests that, at the start of a recession, the least motivated workers and those with a low job level became redundant first, such that most motivated and satisfied workers, as well as workers with a higher job level, remained employed.

The objective of **Chapter 6** is to investigate the importance of time in explaining the ambiguous views on the relationship between job insecurity and job performance.

There is a trend toward more flexible types of employment, which increases job insecurity. This is problematic, because there is an abundance of evidence that the external shock of job insecurity is a major work stressor that has negative consequences on, among others, the health, well-being, and job satisfaction of workers. However, there exists a paucity of evidence on the effects of job insecurity on job performance, and the few studies that investigated this relationship reported inconsistent findings. Also, a majority of studies used cross-sectional designs that cannot account for longitudinal effects.

There are two views on the relationship between job insecurity and job performance. The “short-term managerial view”, where managers apply job insecurity to motivate workers, assumes that job insecurity has positive effects on job performance. On the other hand, scholars often view job insecurity as a stressor that triggers emotional and mental processes that drain one’s energy and deflect the worker’s attention to regaining certainty, and it thus decreases job performance.

These two views may, however, be reconciled by the factor time. Therefore, Chapter 6 hypothesizes that impression management may indeed result in higher job performance in the short-term, but that job performance decreases once available coping resources are exhausted in the long-term.

Data for the 2012 and 2014 wave from the ongoing prospective Maastricht Cohort Study (hereafter MCS) were used to investigate this. To address a common limitation of studies, job performance was operationalized as core task performance and as productivity loss compared to the previous year. Linear and logistic regressions were used to analyze the relationships. In addition, duration analyses were performed to investigate the effect of chronic job insecurity during two years on job performance.

A majority of participants were older and male. Relatively few people reported job insecurity or chronic job insecurity. More than 80 percent of the participants were not job insecure for two years. Core task performance was very high, while the majority of participants reported no productivity loss.

Chapter 6 finds that cross-sectionally and longitudinally, job insecurity was only related to a more than doubled risk for productivity loss. There was no relation to core task performance. The two-year duration of job insecurity, chronic job insecurity, did not predict job performance. This suggests that the short-term managerial view is incorrect, and that job insecurity has both immediate and long-term negative effects on productivity loss. While workers decrease their productivity, they maintain the least performance required to continue their employment. Therefore, the factor time, operationalized as the time of follow-up and as the duration of exposure to job insecurity, did not provide more clarity concerning the conflicting views.

To conclude, as discussed in **Chapter 7**, this dissertation finds that the demographic trend of population aging, two external shocks, namely changes in legislation on pension entitlement and recessions, and a trend toward more flexible types of employment that lead to more job uncertainty, indeed have an effect on the job performance of older workers in the Netherlands. First, the external shock of changes in legislation on pension entitlement increases job performance by compelling older workers to prolong labor force participation. However, some subgroups of older workers are more likely to have early retirement preferences. No evidence was found that this shock impacted job satisfaction. The hypothesized effect of a pension reform on the health and well-being of older workers remains ambiguous. Second, the external shock of a recession increased job satisfaction,

but this effect was instead explained by selection bias. Because the employment of less satisfied workers, and workers with a lower job level, is more likely to be terminated first, the remaining workforce has a higher average level of job satisfaction. It is assumed that the remaining satisfied workers are more productive. Third, a trend toward more flexible types of employment that lead to more job uncertainty results in productivity loss, which decreases job performance and labor productivity. Despite this effect, workers tend to maintain the least productivity that is required to continue their employment.