



Network for Studies on Pensions, Aging and Retirement

Which work conditions can encourage older workers to work overtime?

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DESIGN PAPER 170

NETSPAR INDUSTRY SERIES

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Netspar Design Paper 170, March 2021

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Abstract

The pressure to work overtime is increasing worldwide and has led to substantial portions of the workforce in industrialized countries working long hours. These long work hours contribute to solving the labor shortages caused by early retirement and an aging work population. On the other hand, literature shows that there should be a balance between job demands and resources for workers to stay employable to a higher age, and that overtime performed on a voluntary basis is perceived as less stressful. Hence, it is of vital performance to observe to what extent specific working conditions can help employees to better deal with and feel less pressured by overtime work. The purpose of this Netspar design paper is to examine the relationship between working characteristics, age, health, and the willingness to work overtime of employees in the Dutch public sector. This paper shows that certain working characteristics are more effective in influencing the number of overtime hours that employees are willing to work than others. In particular, total freedom in the timing of overtime work, large involvement in the task, and high learning opportunities contribute to a higher motivation to work overtime, while task autonomy and cooperation with colleagues stimulate less. As overtime work has become much more common, it is important that employers in the coming years enhance these favorable working conditions in order to ensure the continuing employability of their staff. However, employers should be aware that older workers are less responsive to favorable working conditions, although the paper does show that the impact of favorable working conditions is strong enough to outweigh the negative age effect.

Samenvatting

De druk om overuren te maken neemt wereldwijd toe. De lange werktijden dragen bij aan het oplossen van tekorten aan arbeidskrachten als gevolg van vervroegde uittreding en een vergrijzende beroepsbevolking. Aan de andere kant laat de literatuur zien dat er een evenwicht moet zijn tussen werkvereisten en beloningen voor werknemers om tot een hogere leeftijd inzetbaar te blijven, en dat overuren die op vrijwillige basis worden verricht als minder stressvol worden ervaren. Het doel van dit Netspar-industriepaper is om de relatie te onderzoeken tussen werkkenmerken, leeftijd, gezondheid en de bereidheid om over te werken van personeel in de Nederlandse overheidssector. Dit artikel laat zien dat bepaalde werkkenmerken effectiever zijn in het beïnvloeden van de bereidheid dan andere. Met name volledige vrijheid in de timing van overwerk, grote betrokkenheid bij de taak en hoge leermogelijkheden dragen bij aan een hogere motivatie om overuren te maken, terwijl taakautonomie en samenwerking met collega's minder stimulerend werken. Werkgevers moeten zich er echter van bewust zijn dat oudere werknemers minder reageren op gunstige arbeidsomstandigheden, hoewel ons paper ook laat zien dat de impact van gunstige arbeidsomstandigheden sterk genoeg is om het negatieve leeftijdseffect te compenseren.

1. Introduction

Labor markets are becoming increasingly flexible and international competition is increasing at a fast pace, while at the same time labor supply growth has declined in most industrialized countries due to the ageing of the working population (Kodz et al., 2003). Moreover, contractual weekly workhours have been shortened in many countries. This increasingly leads to shortages in the labor market, so that organizations and companies cannot fully utilize their internal human capital. Therefore, they have great interest in motivating their employees to work overtime (Ko & Choi, 2018). The pressure to work overtime is increasing worldwide, leading to substantial portions of the workforce in industrialized countries working excessively long hours (more than 48 per week) (Messenger, 2018). In the Netherlands, contractual working hours have been stable since 2003, but four out of ten workers work outside office hours (Statistics Netherlands, 2017), and approximately half of all workers are also accessible outside office hours (Statistics Netherlands, 2019). The potential danger of these trends is that overtime work results in fatigue, stress, and lack of motivation. Multiple studies have indicated that the number of overtime hours are positively associated with worse psychological health (Kikychi et al., 2020; Kim et al., 2020), but also that favorable working conditions, consistent with the Job Demands-Resources model (Siegrist, 1996, 1998), can alleviate work pressure. Such working conditions include more flexibility in work hours and more self-control in performing tasks (Kim et al., 2020; Topcic et al., 2016). Moreover, Beckers, et al. (2008) show that whether overtime is performed on a voluntary or involuntary basis is crucial for the fatigue and stress that employees experience.

However, the working conditions that allow workers to perform overtime work are likely to differ between older and younger workers as the capability to work overtime also changes with age. The way people age physically and psychologically depends on their genetics, health, and their occupation (Naumanen, 2006). This affects workers' ability to perform their job tasks, meaning that they experience barriers to their maximum capacities, putting them at greater risk of chronic fatigue or musculoskeletal injuries (Kenny et al., 2008). The decrease in work capacity of the aging worker will therefore result in an increasing need for recovery, which is at odds with the increasing trend in overtime work (Mohren et al., 2010). However, when older workers feel less pushed to work overtime and feel that they perform these tasks on a voluntary basis, they are likely to stay employable longer. Hence, it is essential to have detailed information on those working conditions which enable younger but also older workers to perform overtime work and thus maintain their employability to higher ages.

In the end, this ensures that they remain motivated until retirement and that they do not retire early.

Even though the literature indicates the importance of working conditions and the fact that overtime work should take place on a voluntary basis, little research has been conducted on the differences by age in the relevance of working conditions that can help or motivate a person to work overtime. This industry paper will therefore look more closely into these differences for the relevance of working conditions. The main research questions of the paper are therefore: 1) to what extent can favorable working conditions motivate people to work overtime voluntarily, 2) which favorable work conditions are most effective, and 3) to what extent are there differences in the relevance of these work conditions by age.

To this end, we conduct causal analyses using a vignette experiment on Dutch public sector employees to determine the impact of work environment characteristics on the willingness to work overtime, and we investigate which particular work environment characteristics can especially help older workers. Moreover, we perform separate analyses to investigate to what extent a worker's health affects the relationship between work environment characteristics and the willingness of younger versus older workers to work overtime.

Our results indicate that certain working environment characteristics positively influence the number of overtime hours that employees are willing to work. In particular, full freedom in the timing of overtime work, personal involvement in job tasks, and learning opportunities contribute to a higher motivation of employees to work overtime, while task autonomy and cooperation with colleagues are less effective. However, our results also show that older employees are less responsive to favorable working conditions, although the impact of these conditions is strong enough to outweigh the negative age effect.

By showing that the effectiveness of work conditions differs in our stated preferences experiment by workers' age, we also contribute to the growing literature that studies the effectiveness of human resources measures that are specifically implemented for older workers. These measures, such as providing specific equipment to older employees, reduced work requirements, mixed-age work teams, training offers to older employees, and reduction of work hours with age, are based on the insight that older employees generally have different competencies and requirements than their younger colleagues when it comes to their employability (De Grip et al., 2020; Boockmann et al., 2018; Hermansen et al., 2015; Skirbekk, 2008). Our study adds to this literature by indirectly showing that, in situations where workers experience high

work pressure, the effectiveness of favorable working conditions to increase labor force participation decreases with age due to "stepping-stone" effects.

This design paper is organized as follows. Section 2 describes the data and methodology. Section 3 describes the results. Section 4 provides conclusions and policy recommendations.

2. Data and methodology

The data for this research were collected by the Research Centre for Education and the Labour Market (ROA) of Maastricht University in 2017. Emails with a link to a web-based survey, sent by APG (the Dutch public sector pension fund) were answered by roughly 22,200 employees in the Dutch public sector. These employees are predominantly highly educated. The data collection consisted of two parts: a survey questionnaire used for eliciting personal characteristics relevant to the research (age, health condition, and contractual working hours) and a stated preference experiment that uses vignettes to investigate the relative relevance of working conditions for overtime work. In this vignette experiment, employees were confronted with five hypothetical situations. In these, they were asked to work a maximum of 16 overtime hours in two weeks without compensation due to an unforeseen additional job task within the organization; after that, they were asked how much of their spare time they would be willing to devote to this task. The working conditions in which this task was performed are randomly varied over the vignettes. Since we have five vignette observations for each employee, we have approximately 111,000 usable observations.

2.1 The Vignette Study

The stated preference experiment in the survey consists of vignettes. Vignettes are concrete and detailed descriptions of fictitious scenarios framed from practice, knowledge, and previous research (Taylor, 2005). In our vignette experiment, employees were asked to work a maximum of 16 overtime hours (in their spare time) in two weeks without compensation because of an additional job task. The lack of compensation is justified by the fact that most overtime work in the Netherlands is unpaid. At the same time, they were also given hypothetical situations about the working characteristics in which the task had to be performed. These characteristics were randomly changed over the vignettes. Respondents were then asked six times to decide how many hours they would be willing to work overtime to complete the task. The working characteristics were carefully chosen based on effort-reward models and autonomy models. Each work characteristic (e.g., freedom, autonomy, personal involvement, co-workers, and the degree of learning) differed randomly in three levels (an example of the vignette can be found in figure 1):

Work characteristics:

1. The freedom to plan overtime over the working week (no freedom, limited freedom, full freedom).

2. The autonomy in execution of the task (limited autonomy, slightly limited autonomy, full autonomy).
3. The personal involvement in the task (very low involvement, limited involvement, very high involvement).
4. How many people are asked to perform the task (only yourself, you together with a small group of people, every employee).
5. The degree to which people can learn from the task (very low degree, limited degree, very high degree).

The freedom to plan the overtime work over the working week is included in the vignette experiment based on the results of several studies that used the Effort-Reward Imbalance (ERI) model (Siegrist, 1996, 1998). This model posits that an employee's effort displayed at work is part of a social exchange process in which the employee expects a fair reward for the effort invested (Becker et al., 2008). The freedom in planning overtime can be considered a reward, which in turn increases the likelihood that workers are willing to work overtime. Moreover, the freedom in planning may also lower the risk of health problems as workers are better able to avoid peak hours.

The ERI model also applies to task autonomy. In general, empirical studies find that providing task autonomy to employees results in higher motivation, job satisfaction, and work performance as employees interpret this autonomy as a reward (Argote & McGrath, 1993). Hence, we can expect such a relationship also with the willingness to work overtime.

Personal involvement is included in the vignette experiment as previous literature has shown that highly involved employees are more willing to provide extra effort in work, which implies that they may also be more willing to work overtime. Engaged employees are more willing to step outside the bounds of their formally defined jobs (Rich, Lepine & Crawford, 2010).

The number of peers involved in the task is included since cooperative work environments have been proven to motivate employees in their work. Employees in environments where tasks are shared experience their work environment as more pleasant (Lambooi et al., 2007). The sharing of tasks can lead to a reduction in work pressure for individual employees.

Finally, we included the degree to which people can learn from the task in the vignette experiment as several studies show that access to learning possibilities leads to higher job satisfaction and organizational commitment, in particular as employees

*Figure 1. Vignette example***Introduction text**

Imagine that your job requires a task to be performed unexpectedly, that requires additional work. Your employer asks you and a number of colleagues to work a number of overtime hours in your spare time (maximum 16 hours) in two weeks. Your employer cannot offer you any financial compensation for this. Your employer hereby declares that (s)he fully respects that you may not wish to work overtime and leaves the choice as to how much of your spare time you are willing to spend on the completion of the task entirely to you (without any repercussions). The work circumstances in which you are asked to perform the task differ according to five characteristics:

1. Your freedom to organize overtime
2. The autonomy in performing the task
3. Number of colleagues who have been asked to work overtime
4. Your personal involvement in the task
5. The extent to which you can learn something from the task

You will now be asked to choose 5 times how many hours you are willing to work overtime to complete the task (note that the work circumstances differ between these 5 scenarios).

People were asked the question below 5 times, in which the fields belonging to the circumstances were randomized.

How many hours of your spare time are you willing to work overtime to complete the task in this scenario?

Work circumstances:

Freedom to organize overtime:	{limited freedom}
Autonomy in performing the task:	{full autonomy}
Number of colleagues who were asked to work overtime:	{only yourself}
Your personal involvement in the task:	{very large}
The extent to which you can learn something from the task:	{very small}

consider the learning possibilities as a gift from their employer (Wright, 1997; De Grip et al., 2019).

The advantage of using vignettes is that it presents hypothetical descriptions of situations while it at the same time randomizes key work characteristics. The fact that people are forced to make choices implies that vignettes are less non-committal than simple surveys. Moreover, several studies have indicated that the hypothetical behavior reported in vignette studies strongly correlates with actual behavior (Kirwan et al., 1983; Langley et al., 1991; Peabody et al., 2000, 2004; Telser & Zweifel, 2007; Eggers, 2014). In fact, stated preference experiments may reduce or even close the gap between a survey and the real world because they reflect real decisions, while ordinary survey questions do not (Louvier et al., 2000). Therefore, vignette experiments are

widely used in social sciences, transportation, and environmental science (Hensher, 1997), and marketing research (Louviere et al., 2002), and they are also increasingly implemented in other disciplines such as economics (Barsky et al., 1997; Revelt & Train, 1998; Kantarci & Van Soest, 2008; Braga et al., 2009; Benjamin et al., 2014; Wiswall & Zafar, 2017; Elsayed et al., 2018).

2.2 Survey questions

Besides the vignettes, the survey also contained several items to gain information about the employee's personal characteristics, including age, health condition, contractual working hours and actual overtime hours. The employee's health condition was measured by the question, "How is your health in general"; this could be answered by choosing from very good to very bad based on a five-point scale. Contractual working hours were elicited by asking the question, "How many hours per week do you work according to your employment contract?".

2.3 Descriptive statistics

Table 1 presents descriptive information of the employees who responded to the survey. As we can see, the age of the employees in the survey is on average nearly 57 years. Furthermore, we see that the average health condition of employees is good, with a score of 2. Approximately 74% of the employees think believe that their health condition is good or even better. Employees have on average 33 contractual work hours. The mean and standard deviations of the working characteristics which are part of the vignette show indirectly that the randomization process was correct. In general, the data are evenly distributed over the three levels of each work characteristic.

Table 1. Descriptive statistics: environmental and personal characteristics of employees

Employee characteristics	Mean	SD	Min	Max
Personal characteristics				
Age	56.7	7.6	18	67
Poor health	2.1	.7	1	5
Contractual hours	33.3	6.8	0.3	60
Work characteristics which are part of the vignette				
Freedom	2.0	.8	1	3
Autonomy	2.0	.8	1	3
Personal involvement	2.0	.8	1	3
Number of colleagues	2.0	.8	1	3
The degree to which people can learn	2.0	.8	1	3

Figure 2. Overtime hours that employees are willing to work within the vignette experiment

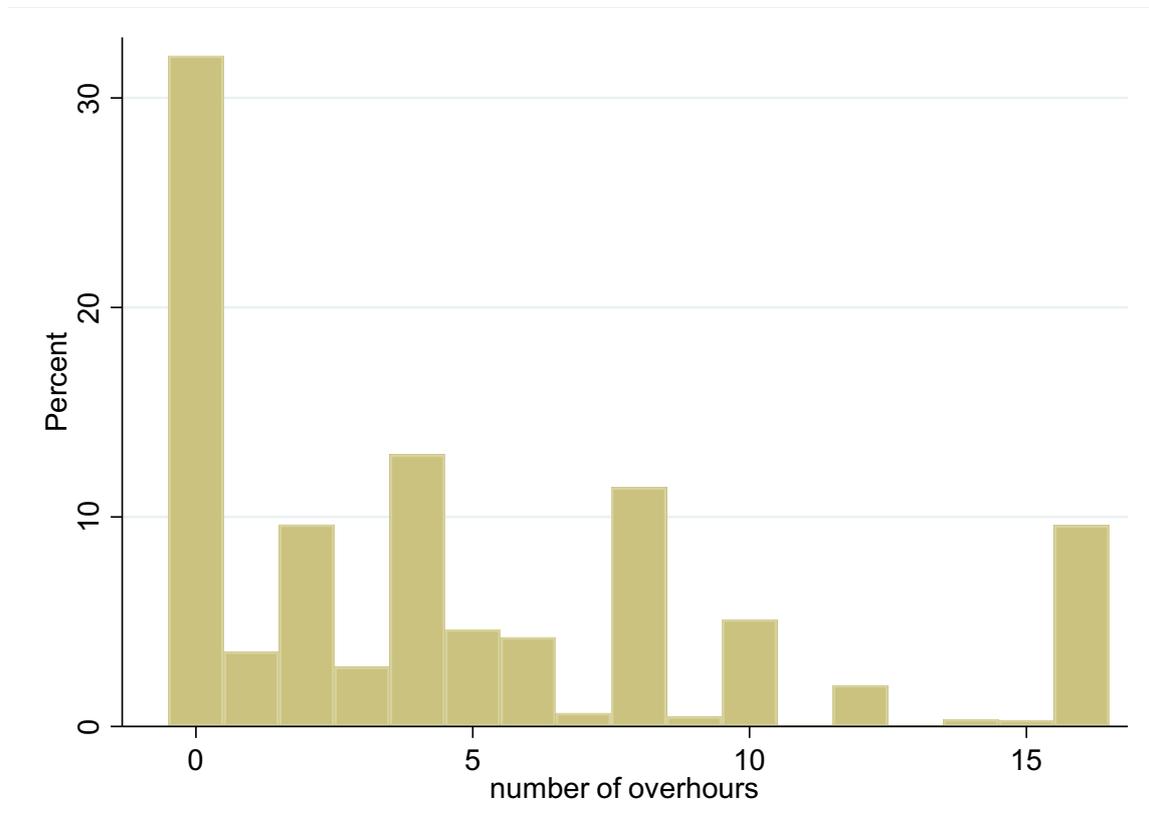


Figure 2 furthermore shows the distribution of the number of overtime hours that employees are willing to work. The distribution shows a considerable peak at zero hours: over 30% of the respondents are unwilling to work overtime. For the employees who are willing to work overtime, we observe peaks at 2, 4, and 16 hours of overtime. The distribution thus suggests that there may exist a considerable stepping stone for working overtime. This is also illustrated by the fact that 19% of all workers are unwilling to work overtime irrespective of the variation in the work characteristics over the five different vignettes.

2.4 Empirical strategy

Because of the potential stepping stone for working overtime, we estimate two different specifications. First, we estimate linear probability models, where we regress a dummy variable that indicates whether employees are willing to work overtime based on the work characteristics. Second, conditional on the willingness of employees to work overtime, we regress ordinary least squares models, in which we regress the number of overtime hours on the work characteristics. Thereafter, we estimate models in which we interact our basic estimation with age, health, and controlling

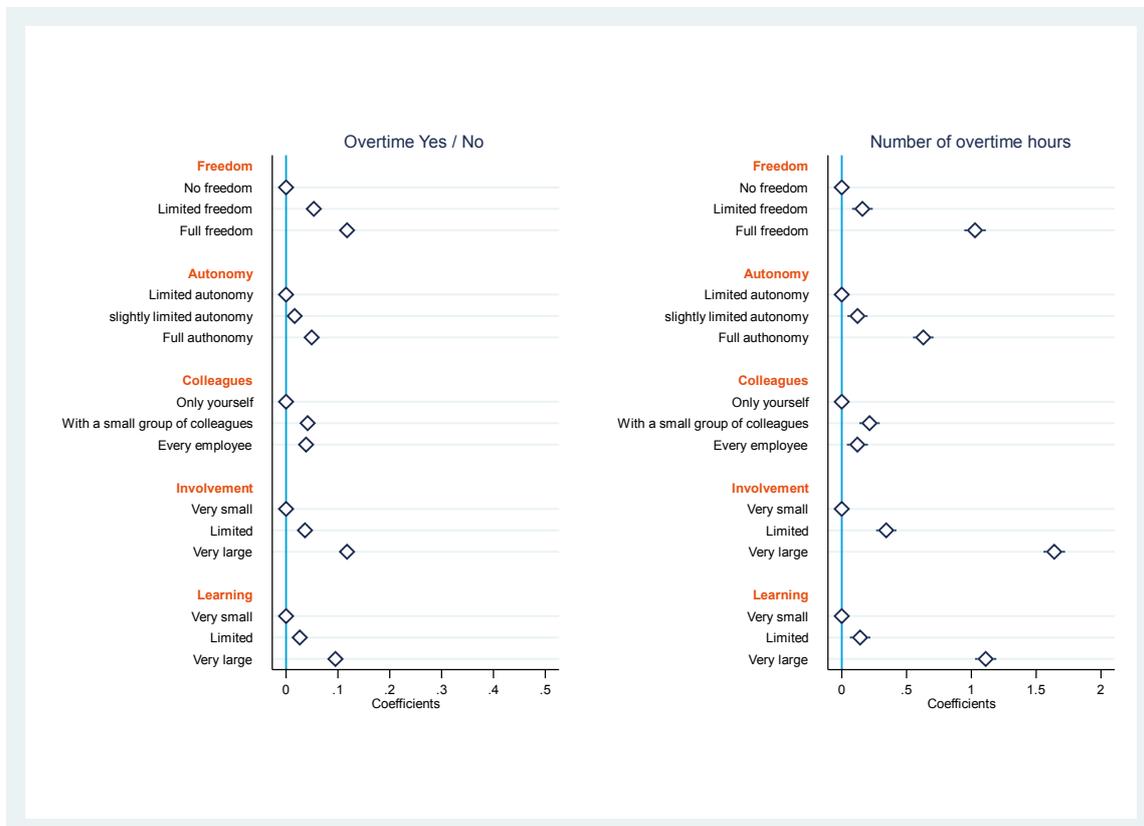
for contractual working hours, to elicit whether work characteristics have different effects on the willingness to work overtime for older and younger workers. Because each individual in the data set reported overtime hours in five different vignettes, we use a clustered sandwich estimator in all of our specifications to allow for intragroup correlation at the individual level (Rogers, 1993; Wooldridge, 2002).

3. Results

3.1 Basic results

Figure 3 presents the estimation results of the basic model; we regress the work characteristics as described in the vignette on the dummy indicating whether people are willing to work overtime and on the number of overtime hours. The table shows that the willingness to work overtime differs substantially by work characteristic. Moreover, we observe a similar pattern in the specification on whether employees are willing to work overtime and on the number of overtime hours. Total freedom as to the time when people perform the task and high involvement in the task increases the willingness of employees to work overtime most (in both cases approximately 12 percentage points more than in case of no freedom and low involvement). The degree to which employees can learn from the task is also an important factor in getting employees across the threshold to perform overtime work (the effect on overtime work is 9.5 percentage points higher when the degree to which employees can learn from the task is very high compared to when it is very low). Autonomy in how to perform the task and

Figure 3. Basic regression: the willingness of employees to work overtime



the number of colleagues with whom the employee should perform the task do also have a statistically significant effect, but the effect is not even half of the effects of full freedom and high involvement in the job task.

We observe a similar pattern in the number of overtime hours. High involvement with the task increases the number of overtime hours by 1.6 (equivalent to an increase of 35% in the standard deviation of the number of working hours) compared to low involvement, while full freedom and a very high degree of learning increases the number of working hours by 1 hour (equivalent to an increase of 25% in the standard deviation of the number of working hours) compared to the situation where employees have no freedom and only a very small degree of learning. These numbers are significant and thus indicate that working conditions indeed matter for the motivation of employees to work overtime. In light of the increasing pressure on the labor market to work overtime, these working conditions can be expected to indirectly help maintain the employability of workers over their career span.

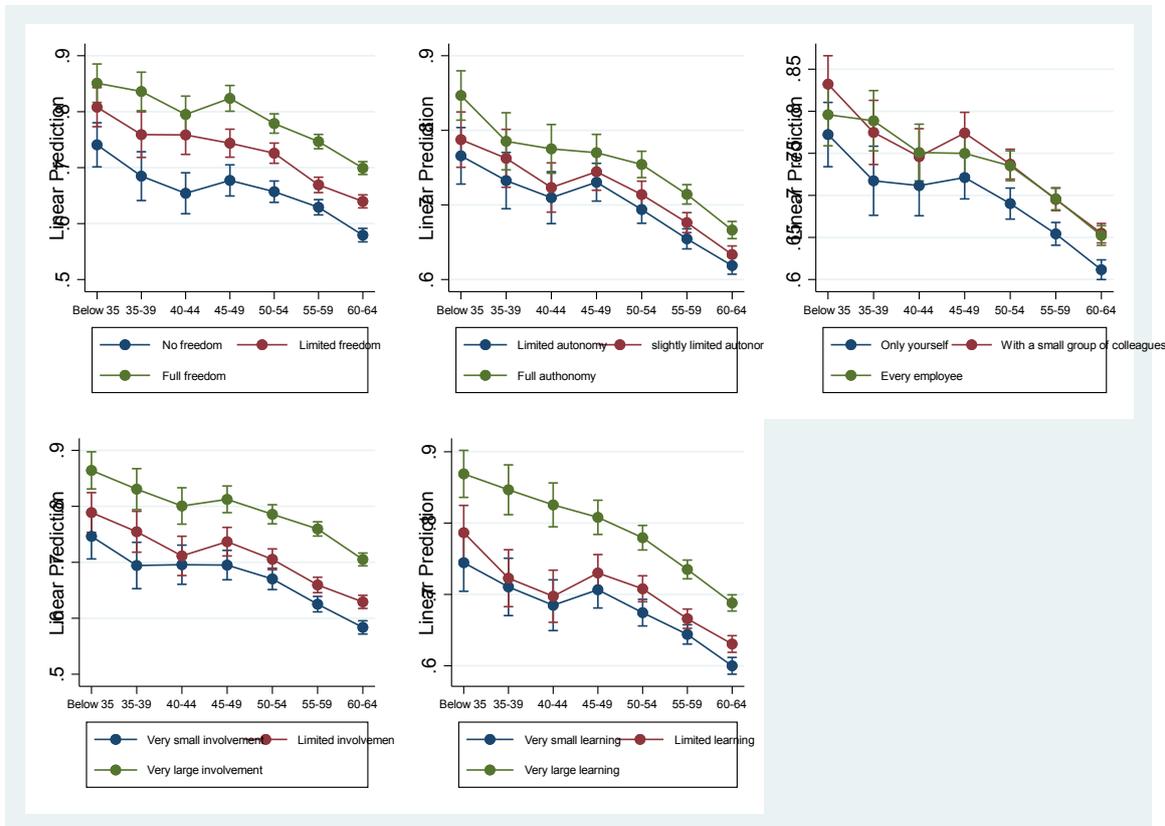
3.2 Overtime hours and work conditions: relation to age

The question, however, is whether these working conditions have a similar impact on older versus younger employees. To answer this, we have developed models in which we interact our basic estimation with age, health, and controlling for contractual working hours, to determine whether working characteristics might have different effects on the willingness to work overtime for older and younger workers.

Figures 4 and 5 show the plots of the marginal effects based on these estimations. The figures show significantly different age patterns for the willingness to work overtime and the number of overtime hours. Figure 4 clearly shows that the willingness to work overtime declines almost in a linear fashion with age. However, the figure also shows that more favorable working conditions lead to a higher willingness to work overtime irrespective of age (the interaction effects are statistically insignificant). This implies, for example, that an average employee who is 60–64 years old and has full freedom to perform the task whenever he/she wishes to do so within the given time period, is just as motivated as an employee aged under 35 who has no freedom. Hence, it is important to provide favorable working conditions to older workers.

Figure 5 shows the results for the number of overtime hours conditional on the willingness of people to perform overtime work. It shows, conditional to the choice whether one wishes to perform overtime work, that working conditions do significantly increase the number of overtime hours, irrespective of age. Workers with full freedom, very large involvement, and the experience of learning much from the job task are willing to work more overtime hours than workers who experience lower

Figure 4. Plots of marginal effects of an LPM estimation on working overtime (yes/no): interaction between work characteristics and age

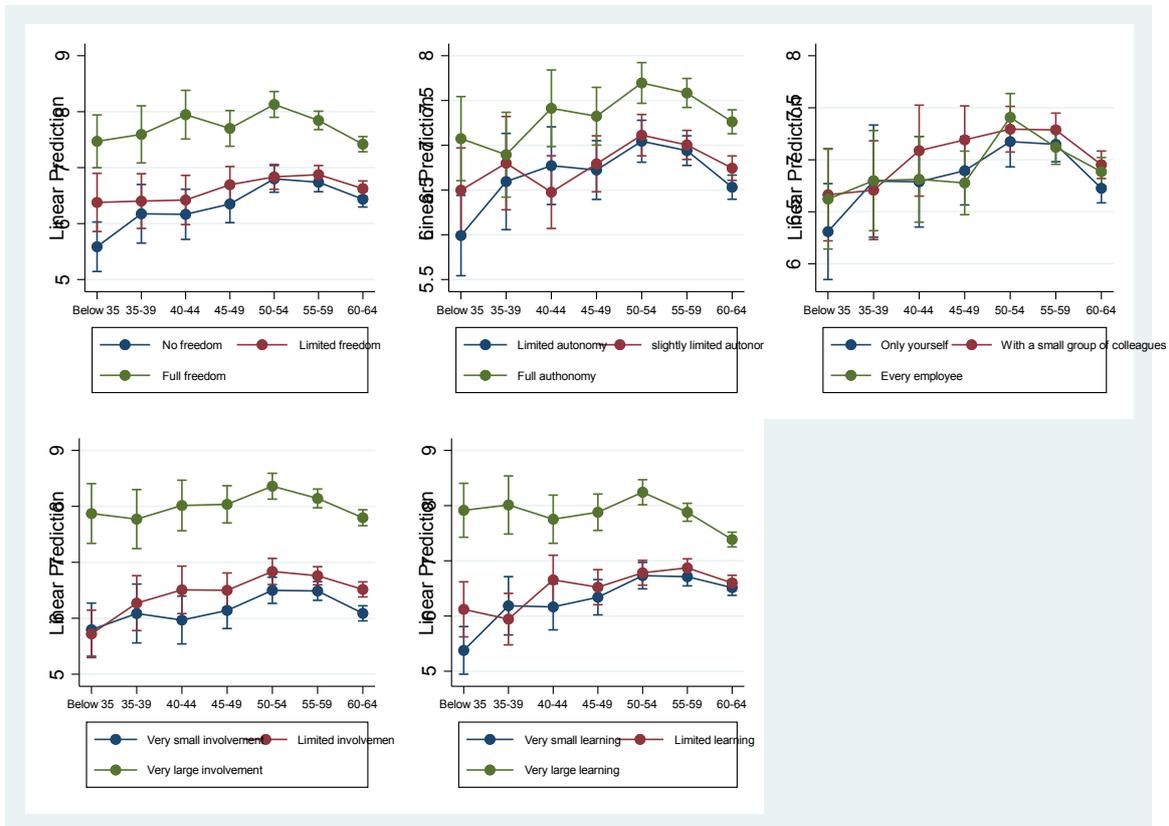


levels on these working conditions. Most interesting, however, is that we do not observe a negative relationship between age and the number of overtime hours, but instead an inverted U-shape. The number of overtime hours slightly increases with age (or remains constant) until age 50–54. After this age, we see a statistically significant decline in the effectiveness of full freedom, very large involvement, and the degree of learning to stimulate the number of overtime hours. Perhaps this reflects a decline in health and an increase in the need for recovery. Nevertheless, even in the older age category, favorable working conditions remain an important motivator for employees to work overtime.

3.3 Overtime hours and work conditions: relation to age and health

As remarked above, a decline in health may negatively affect workers' ability to perform overtime work. For a closer look at the role of health in the relationship between age and work conditions, we perform regression analyses in which we interact the working conditions with poor health. We then continue our analysis by performing separate analyses on the relationship between work environment characteristics and

Figure 5. Plots of marginal effects of an OLS estimation on the number of overtime hours: interaction between work characteristics and age



age with working overtime for employees in good health (score of 1 or 2 on the health scale) and in poor health (score of 3 and higher). Table 2 shows the results of the first analysis. The stepping stone function of poor health clearly shows from this table. Individuals in poor health decide significantly less often to work overtime. Working conditions do not change this decision, most likely because the health situation of these individuals does not allow them to work overtime at all. As to the number of overtime hours we observe a different pattern, which makes sense as it concerns people who are at least healthy enough to work overtime. We do not observe a significant level effect for poor health. This is due to the fact that most of the effects run through the interaction with poor health and work conditions. The table shows that favorable work conditions stimulate employees to work more overtime. However, poor health reduces this positive effect of working conditions (in particular for involvement and the degree to which people can learn from the task). In other words, poor health reduces the effectiveness of the favorable working conditions of those who are able to work overtime.

Table 2. Estimations on overtime (Yes/No) / number of overtime hours: the role of health

VARIABLES	(1) Overtime Yes/ No	(2) Number of overtime hours
Freedom		
Limited freedom (no freedom = ref.)	0.054*** (0.012)	0.257* (0.146)
Full freedom	0.134*** (0.012)	1.329*** (0.149)
Autonomy		
Slightly limited autonomy (limited autonomy = ref.)	0.034*** (0.011)	0.129 (0.141)
Full autonomy	0.072*** (0.011)	0.839*** (0.141)
Colleagues		
With a small group of colleagues (only yourself = ref.)	0.034*** (0.011)	-0.078 (0.143)
Every employee	0.044*** (0.012)	0.032 (0.149)
Involvement		
Limited (very small = ref.)	0.026** (0.012)	0.447*** (0.139)
Very high	0.124*** (0.012)	2.169*** (0.149)
Learning		
Limited (very small = ref.)	0.028** (0.012)	0.343** (0.144)
Very high	0.110*** (0.012)	1.731*** (0.146)
Poor health		
	-0.058*** (0.008)	-0.136 (0.103)
Limited freedom (no freedom = ref.) * poor health	0.002 (0.005)	-0.037 (0.065)
Full freedom * poor health	-0.006 (0.005)	-0.092 (0.067)
Slightly limited autonomy (limited autonomy = ref.) * poor health	-0.008 (0.005)	0.004 (0.064)
Full autonomy * poor health	-0.008 (0.005)	-0.078 (0.063)
With a small group of colleagues (only yourself = ref.) * poor health	0.005 (0.005)	0.122* (0.065)
Every employee * poor health	-0.000 (0.005)	0.025 (0.067)
Involvement limited (very small = ref.) * poor health	0.005 (0.005)	-0.054 (0.062)
Involvement very high * poor health	-0.002 (0.005)	-0.211*** (0.067)
Learning limited (very small = ref.) * poor health	-0.001 (0.005)	-0.100 (0.065)
Learning very high * poor health	-0.007 (0.005)	-0.252*** (0.066)
Constant	0.601*** (0.018)	5.252*** (0.230)
Observations	92,903	63,529
R-squared	0.046	0.057

OLS regression results, with clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Finally, Figures 6 and 7 show the marginal plots of the separate analyses of the relationship between working environment characteristics and age with working overtime for employees in good and in poor health. The figures in the left panel of the figure show large confidence intervals for younger age cohorts, which reflects the fact that these cohorts do not include many employees in poor health. Hence, we should focus only on the results for the older age cohorts. From these figures we can distill three main results. The first result is that, consistent with the stepping stone theory, older workers in poor health are significantly less willing to work overtime than workers in good health. Second, building on the previous result, while working conditions do have a significant impact on the willingness to work overtime for those in good health, there is no significant impact for older workers in poor health. Third, the number of overtime hours for workers who have decided to go beyond the stepping stone is approximately equivalent for those in good and poor health. We do, however, observe that working conditions are slightly more effective for those in good health.

Figure 6. Plots of marginal effects of an OLS estimation on working overtime (yes/no): interaction of work characteristics, age, and health (left panel = poor health, right panel = good health)

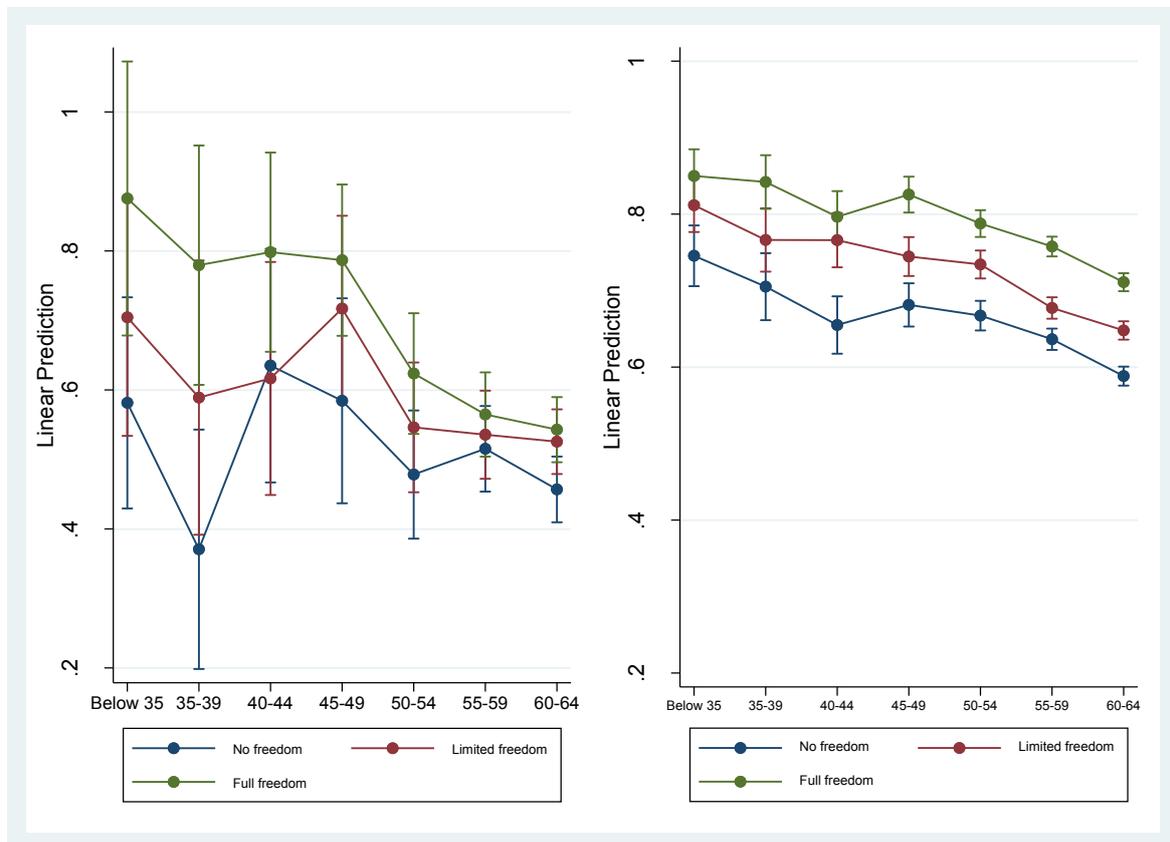
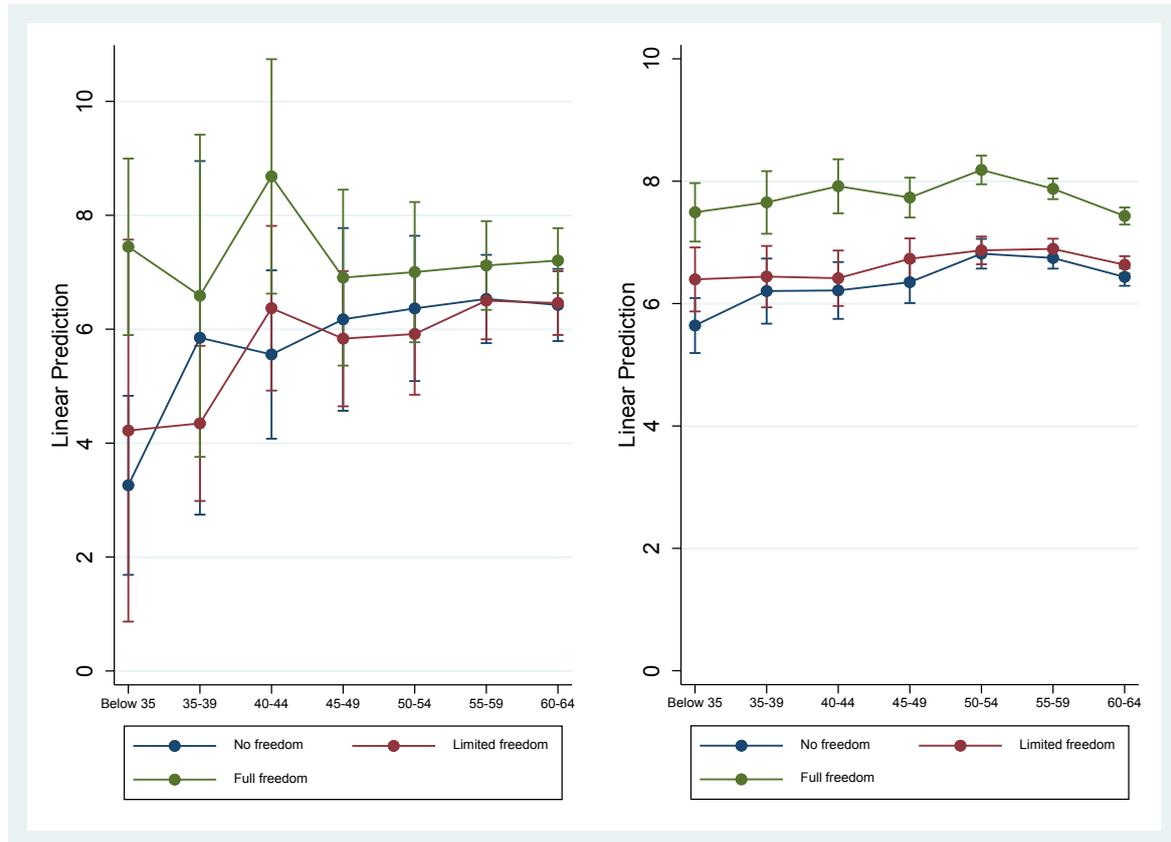


Figure 7. Plots of marginal effects of an OLS estimation on the number of overtime hours: interaction of work characteristics, age, and health (left panel = poor health, right panel = good health)



3.4 External validity of the stated preference experiment

A final question which we need to resolve is to what extent the behavior of the respondents in our stated preference experiment also reflects their behavior in daily life. Fortunately, we have self-reported information on the actual unpaid overtime that employees actually worked at their employer in the previous month. Table 3 shows the relationship between the overtime hours that employees actually worked and the number of overtime hours that they were willing to work in the stated preference experiment. We find a substantial correlation of 0.37, implying that the behavior of the respondents corresponds strongly with their behavior in real life. Hence, we can expect that our stated preference experiment results are indeed likely to mimic real life decisions.

We also have redone all analyses for the private sector (APG also some clients from the private sector in its portfolio). The results of these analyses (results available on request) show no significant difference with the results for the public and educational sectors.

Table 3. Unpaid overtime hours in practice versus unpaid overtime hours in experiment

VARIABLES	(1) Unpaid overtime hours in daily life
Overtime hours in stated preference experiment	0.365*** (0.009)
Constant	7.368*** (0.065)
Observations	108,934
R-squared	0.014

OLS regression results, with clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4. Conclusion and policy recommendations

The purpose of this Netspar industry paper was to examine the relationship between working characteristics, age, health, and the willingness of employees to work overtime. This paper shows that working environment characteristics could positively influence the number of overtime hours that employees are willing to work. In particular, full freedom in performing overtime work, large involvement in the job tasks, and high learning opportunities contribute to a higher motivation of employees to work overtime. At this time, as working overtime has become much more common, it is important for employers to enhance these working conditions.

However, employers should also be aware that older employees are less responsive to favorable working conditions. There is a stepping stone related to poor health which reduces the likelihood of employees to work overtime. More favorable working conditions will not stimulate older employees to work overtime in the same way that it stimulates younger workers. However, crossing the stepping stone, older employees are also willing to work considerably more overtime hours when they experience favorable working conditions, despite the fact that the effectiveness of their working conditions diminishes slightly with age. Still, the impact of favorable working conditions is strong enough to outweigh the negative age effect. Hence, it is of vital importance to create favorable working conditions so as to maintain the employability of younger as well as older workers.

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This is a publication of:
Netspar

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www.netspar.nl

March 2021