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THE WORK FIRST INITIATIVE 'WERKLOONT': NET EFFECTS AND COST-EFFECTIVENESS AFTER THREE YEARS

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THE WORK FIRST INITIATIVE 'WERKLOONT': NET EFFECTS AND COST-BENEFIT RATIO AFTER THREE YEARS

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SUMMARY

This paper evaluates the 'WerkLoont' measure, which has two objectives: reducing the inflow into social assistance and stimulating the outflow from social assistance to work. The measure is applied as soon as a person enters a social assistance benefit. It consists of job search assistance and training as well as unpaid work, and can be seen as a work first programme. As soon as a person applies for a benefit he is informed about the measure. The programme is expected to have a reducing effect on the inflow into social assistance and, for people who do enter social assistance, to stimulate the outflow from it.

A randomised experiment has been carried out to measure the effects of the programme. The randomisation is applied as soon as people apply for a benefit. Because there was a waiting period of four weeks before the benefit was actually granted, applicants could in the end decide to refrain from claiming a benefit. The results show that among people assigned to participate in WerkLoont the percentage refraining from a benefit is significantly higher than among the control group. Furthermore, for people who decide to hold on to a benefit WerkLoont has a positive effect on the probability to leave social assistance and find a job.

The participants in the experiment have been monitored for three years since their start in the experiment. As they may have had several job and benefit periods during this three-year period, we looked in more detail to the effect of WerkLoont on the total time in employment and the total time in a benefit during the three-year period. The results show that WerkLoont leads to more time in employment and less time in a benefit. However, the effects are relatively small. This is particularly true for the effect on employment. The effects differ considerably between men and women. For women the effects are considerably higher and last longer than for men.

The paper shows that it is crucial to take more than one year into consideration when measures like WerkLoont are evaluated. After one year the benefits associated with this measure are not large enough to cover its costs. But owing to the fact that the measure is still effective after one year the benefits become higher than the costs. The effects gradually extinguish: in the third year they are already quite low.

The results indicate that WerkLoont is cost-effective, which justifies its continuation. However, the effects are only small and do not make a major difference for the groups concerned. Therefore, there is every reason to look for improvements. Possible improvements might be to reinforce the components aimed at helping participants to find a job or to adjust the unpaid work component in such a way that it provides more relevant work experience.

1 INTRODUCTION

This paper measures the medium term effects of a Work First initiative in Rotterdam on the basis of a randomised experiment. The measure is called 'WerkLoont' or, in English, 'Work Pays Off'. As soon as an unemployed person obtains a social assistance benefit and is considered able to work he is obliged to take part in the WerkLoont measure for a period of 15 weeks. Refusal to participate leads to a benefit cut. During this period, he has to spend 20 hours per week on the programme, which consists of job search assistance and training (8 hours), homework (4 hours) and unpaid work (8 hours). The municipality sees the latter component as a compensation for receiving a benefit and a way to keep work rhythm. It consists of low skilled work, mostly for the Municipal Cleaning Service, which most people dislike.

At the time of the experiment people claiming a benefit were directly randomly assigned either to the experimental group or to the control group. The benefit was not provided directly, but only after a waiting period of four weeks during which both groups were supposed to look for work. The experimental group was informed that if they were still unemployed after the waiting period and wanting to claim a benefit, participation in the WerkLoont measure would be obligatory. The control group was informed that they were entitled to a benefit if they were still unemployed after four weeks. During their benefit, people in the control group were only entitled to basic services, which consisted of access to vacancy information. On beforehand the municipality's department for work and income that was responsible for WerkLoont, expected that the obligations implied by the programme would refrain at least some people in the experimental group from entering the benefit. Furthermore, they expected that these obligations would also stimulate those entering a benefit to get out of it. Finally, the municipality expected that these incentives, as well as the training and the job search assistance, would increase re-employment chances. Hence, the measure was supposed to lead to a decreasing use of benefits and increasing employment for the target group.

In a previous paper, both the experimental group and the control group were followed during one year (De Hek and De Koning, 2015). Comparison between the two groups showed that there is indeed both a preventive effect and an effect on the outflow from a benefit. As people often find jobs of short duration and have multiple periods in employment and in a benefit during the year, we also looked at the effects on the fraction in employment and in a benefit during the year. The results show that the experimental group spent more time in (formal) employment and less time in a benefit compared to the control group.

As time has progressed we are now able to follow the two groups for a period of three years. The key question of this paper is what happens to the effect as time goes on: does it increase, does it stay the same or does it decrease? If positive effects are still found, we also want to know whether the effects on the fraction of the three-year period spent in a benefit created enough savings to outweigh the costs of the measure. Is the measure cost-effective?

The paper is organised as follows. The next section gives a short review of the literature. Then we give a description of the experiment, followed by a presentation of the outcomes on the basis of descriptive statistics. In a separate section results of econometric analyses are presented dealing with possible selection bias owing to non-compliance. The final section summarises and discusses the main findings.

2 EXISTING LITERATURE

WerkLoont is an example of a work first initiative. Distinctive features of this type of measure are that people claiming a benefit are targeted right from the start and that interventions are aimed at getting people to work as soon as possible. Greenberg, Deitch and Hamilton (2009) present synthesis findings of 28 cost-benefit studies of North-American welfare-to-work programmes based on random assignment evaluation designs. It is important to note that WerkLoont does not fit exactly in the typology of programmes they use in their paper. However, some of their conclusions seem to apply more or less to programmes like WerkLoont. This is particularly true for the conclusion that mandatory "job search first" programmes are

worthy of consideration when governments want to reduce their expenditures, but are unlikely to increase the incomes of those required to participate in them. Another important conclusion is that programmes that require individuals to participate in general education do little to either increase the incomes of participants or save the government money. Mandatory programmes that require individuals to participate initially either in an education or training activity or in a job search activity (depending on their needs) and involve both short-term and long-term welfare recipients can be both cost-beneficial for the government and for the participants. This evidence suggests that WerkLoont may be beneficial for the Rotterdam municipality but not so much for the participants.

Card, Kluve and Weber (2017) provide a more general meta-evaluation of employment programmes for unemployed people. Their general conclusion is that the longer-term effects of training and private sector employment programmes seem to be larger than the short-term effects,[1] but also that job search programmes emphasizing 'work first' tend to have similar effects in the short and long run. In that sense, 'work first' is less effective. However, the latter type of programme appears to be relatively effective for the disadvantaged. Although educational level is not included in our data with respect to the WerkLoont programme, we know from other sources that most of the participants in this programme have a low education (only basic education or preparatory vocational education). Furthermore, many of them face problems with respect to their health and their financial position. Finally, Card, Kluve and Weber conclude that active labour market programmes tend to be more effective for women than for men.

Incentives play an important role in the implementation of the WerkLoont programme. If a person applying for a welfare benefit is not willing to participate in WerkLoont the benefit will not be granted. If a person participating in WerkLoont is not active enough in job search or refuses to do unpaid work, his benefit might be cut. There is evidence that incentives may have a positive effect on re-integration. This applies, for example, to the threat effect re-integration measures may have. The preventive effect that the WerkLoont scheme tries to bring about is comparable with this "threat effect". A number of studies find that the prospect (or threat) of compulsory participation in a re-integration program leads to an additional effort by unemployed individuals (who are already in a benefit) to find a job. Black et al. (2003) ascertain a strong increase in the off-flow from people claiming a benefit when the latter are informed that they have to participate in a training program. Richardson (2002), Geerdsen (2006) and Vikström, Rosholm and Svarer (2011) find similar effects.

3 THE EXPERIMENT

Originally, the experiment was supposed to run between May 2012 and the end of 2012. During this period every person applying for a benefit was supposed to be either assigned to the experimental group or to the control group. This was done on the basis of the last digit of their social security number.

Initially, most job coaches kept on doing what they did before: referring every client to WerkLoont. After a while management interfered and the assignment process improved. In December 2012 a similar problem emerged when many job coaches already thought that the experiment was over while it should have lasted to the end of the year. As a result, the data from the month of May and a number of weeks at the end of the year were not used in the analyses. To cope with this loss of data the experiment was extended in 2013, covering January and February. Again, it took a few weeks before the assignment was done satisfactory.

Table 1 gives information about the outcomes of the assignment process in the various sub periods. Most mistakes in the assignment process imply that a person who was supposed to be assigned to the control group was actually sent to the experimental group. The other type of mistake, a person who should be included in the experimental group being sent to the control group, happened less often.

[1] This pattern was also found in one of the few Dutch studies investigating the long-term effects of reintegration measures.

Table 1 Percentage of wrongly assigned persons in various sub periods

Period (weeks)	18-21 (2012)	50 (2012) and 1-3 (2013)	22-49 and 51-52 (2012)	4-13 (2013)	Weeks included in the analysis: total period excluding 18-21, 50 (2012) and 1-3 (2013)
Wrongly assigned to experimental group	70,5%	64,9%	14,0%	8,5%	12,2%
Wrongly assigned to control group	0,0%	0,6%	2,2%	2,7%	2,4%
Wrongly assigned: total	31,2%	34,9%	7,8%	5,8%	7,2%
Actual number in experimental group	187	306	1322	475	1799
Number in experimental group if assignment was done correctly	120	176	1201	444	1647
Actual number in control group	28	72	934	476	1410
Number in control group if assignment was done correctly	95	202	1055	507	1562

The mistakes made in the assignment process may not have been entirely random. Job coaches may have deliberately ignored the randomisation in some cases. They may have believed that the programme would be ineffective for some of the people officially assigned to the experimental group because of their characteristics or because of a lack of motivation. Furthermore, they may have found it difficult to deny access to WerkLoont to persons officially assigned to the control group but highly motivated to participate in this measure. It is important to note that at the start of the program the Department of Work and Income decided that clients who would reject the outcome of the randomisation and insist on this rejection, would be enabled to choose the alternative option.

A comparison between the treatment and the non-treatment group confirms that the deviations from the randomisation are indeed not entirely random (table 2). Women and people with children (two characteristics that are interrelated) are under-represented in the experimental group, while older persons are over-represented. We can easily correct for this by comparing subgroups or by using OLS. However, in this way we may not sufficiently account for differences in unobserved factors like motivation. We particularly suspect that people officially assigned to the experimental group who did not receive treatment in practice, have a relatively low motivation. As a low motivation may also leads to lower job entry chances, it could lead to biased estimates of the effects. An instrumental variables approach is used to correct for this bias.

Table 2 Composition of the treatment group and the non-treatment group

	Treatment group	Non-treatment group
Total number	1799	1410
Women		
Number	646	592
Percentage	36%	42%**
40 years or older		
Number	596	439
Percentage	29%	26%**
Single		
Number	1534	1177
Percentage	85%	83%
Non-Dutch nationality		
Number	192	164
Percentage	11%	12%
Non-Dutch of birth		
Number	867	712
Percentage	48%	51%
One or more children		
Number	357	344
Percentage	20%	24%**

*** Difference between groups is significant at 5% level*

4 DATA

The Rotterdam Department for Work and Income has a registration of its welfare recipients. It contains the dates of entry into and exit out of social assistance as well as a number of characteristics of welfare recipients: age, gender, ethnic origin and household situation (partner and number of children). The social security number included in the registration which makes it possible to identify recurrent entry in social assistance.

Although the municipal registration provides crucial data for the evaluation, not all aspects relevant to the evaluation are included in it. Most importantly, it hardly contains information about employment. The system contains a variable 'reason for leaving social assistance'. Job entry is one of the possible reasons considered. The information about employment is obtained from the person leaving the system. However, a person is not obliged to provide this information and does not have an incentive to do so. Therefore, this information is not reliable. Information about job duration is not gathered by the municipality. The same is true with respect to the use of other social benefits by former welfare recipients. When people have worked for some time and become unemployed they are entitled to an unemployment insurance benefit. Unlike social assistance benefits the level of an unemployment insurance benefit is related to the wage level in the last job and has a maximum duration (which depends on the time worked). In case of disability workers are entitled to a disability benefit. It is possible that measures like WerkLoont not only affect the time in social assistance, but also in unemployment insurance and disability benefits. Therefore, the latter must be taken into consideration in a cost-benefit analysis.

In the Netherlands, the national statistical office ('Statistics Netherlands') disposes of microdata about every job and the person holding this job. Each firm has to deliver this information digitally from its personnel administration. The office also has microdata about social assistance, unemployment insurance and disability benefits, which can be linked to the data about jobs. For our research we could make use of these data. This means that the data used do not suffer from partial non-response and the selectivity associated with it.

5 RESULTS: DESCRIPTIVE STATISTICS

PREVENTION OF INFLOW INTO A BENEFIT

The number of people entering the experiment in a week is not large enough to guarantee that an equal number of people is assigned to WerkLoont and the non-treatment group. Although this variation is random, it may affect the outcomes. Therefore, the numbers are re-weighted in such a way that if *x* percent of the participants entered the programme in week *y*, the same is true for the weighted non-treatment group.[2]

In the presentation of the results we compare the treatment group with the non-treatment group. As was explained earlier in the paper, this distinction does not entirely coincide with the distinction between the experimental group and the non-experimental group. Some people in the latter groups were assigned to the wrong group. We will deal with the question to what extent this may have affected the results later in this paper.

We first look at the preventive effect of WerkLoont. Some of the people initially claiming a benefit refrain from it before the waiting period is over. They may find a job or they may dislike the requirements of the benefit. WerkLoont participants have more obligations than the non-treatment group. One of these is to do low skilled work, such as cleaning the streets for one day each week without extra pay. Therefore, one might expect that before the waiting period expires people assigned to the treatment group will have refrained more often from a benefit than the non-treatment group. It should be noted that the assignment for the experiment is done before the waiting period and that the ones who are supposed to join the treatment group are directly informed about WerkLoont.

The results confirm our expectation. Of the initial claimants assigned to the non-treatment group 15,9 percent refrains from claiming a benefit, compared to almost 28 percent for the treatment group (table 3). The results are similar for men and women. However, this preventive effect appears to be largely a temporary effect. Within the treatment group 16 percent was initially discouraged to claim a benefit, but entered the benefit later during the three-year period of the experiment (see table 3). For the non-treatment group this is 5,9 percent. This means that (27,8 – 16,0 =) 11,9 percent of the treatment group and (15,9 – 5,9 =) 10,1 percent of the non-treatment group did not enter a benefit at all during the experiment. This difference is not significant, implying that the catch-up effect is almost complete. Most of the catch-up effect already takes place during the first year of the experiment. This is particularly the case for men. However, the catch-up effect after three years is higher for women than for men.

[2] In our earlier paper we also followed a different approach in which we regressed the outcome indicators on the treatment variable, personal characteristics of the individuals involved in the experiment and a variable indicating the labour market situation during the monitoring period. This period differs among the participants depending on the time of entry into the experiment. However, the results differed only slightly between the three approaches (no weighting of observations, weighting of observations and the regression approach).

Table 3 Persons initially discouraged to claim a benefit entering a benefit later during the experiment

	Initially discouraged to enter a benefit [a]		Initially discouraged persons entering a benefit within … [a]					
			1 year		2 years		3 years	
	N	%	N	%	N	%	N	%
Total								
Treatment group	501	27,8%	222	12,3%	258	14,3%	287	16,0%
Non-treatment group	224	15,9%	51	3,5%	63	4,4%	82	5,9%
Net effect		**11,9%****		**8,8%****		**9.9%****		**10,1%****
Men								
Treatment group	330	28,6%	151	13,1%	172	14,9%	189	16,4%
Non-treatment group	135	16,4%	31	3,8%	40	5,0%	52	6,6%
Net effect		**12,2%****		**9,3%****		**9,9%****		**9,8%****
Women								
Treatment group	171	26,5%	71	11,0%	86	13,3%	98	15,2%
Non-treatment group	89	15,1%	20	3,0%	22	3,5%	30	4,9%
Net effect		**11,4%****		**8,0%****		**9,8%****		**10.3%****

*** Significant at 5% level*

a) Percentages are taken of the total number of persons in the treatment group and non-treatment group, respectively

OUTFLOW FROM THE BENEFIT

Most people were not discouraged from claiming a benefit. For those people participation in WerkLoont improves the chance to leave the benefit situation and the chance to find a job. But this effect too appears to be temporary. Table 4 gives the results for the total outflow from a benefit. In this table we only take persons into account who received a benefit at the start of the experiment; the ones who were initially discouraged from claiming a benefit are excluded. During the first year of the experiment we observe a difference of 7,2 percent points between the outflow rates of the treatment group and the non-treatment group. After two years and after three years the difference reduces to 1,6 and 2 percent points, respectively. The latter effects are not significant anymore. However, there are important differences between the results for men and women. The effects are higher for women than for men. For men the effect on the outflow from a benefit is only positive and significant during the first year of the experiment. Measured over three years the effect is practically zero. For women the effect remains positive after two and three years, although it is not significant anymore after three years.[3] For women the effect seems to diminish gradually.

[3] The number of women is not big enough to measure effects of a magnitude of 4 to 5 percent.

Table 4 Outflow from the benefit, total group and men and women separately

	Outflow from the benefit within …					
	1 year		2 years		3 years	
	N	%	N	%	N	%
Total						
Treatment group	622	47,9%	821	63,2%	950	73,2%
Non-treatment group	482	40,7%	730	61,6%	845	71,2%
Net effect		**7,2%****		**1,6%**		**2,0%**
Men						
Treatment group	394	47,9%	523	63,5%	611	74,2%
Non-treatment group	294	42,9%	448	65,3%	510	74,3%
Net effect		**5,0%****		**-1,8%**		**-0,1%**
Women						
Treatment group	228	48,0%	298	62,7%	339	71,4%
Non-treatment group	189	37,7%	283	56,5%	335	67,1%
Net effect		**10,3%****		**6,2%****		**4,3%**

*** Significant at 5% level*

Figures 1 and 2 show the development of the outflow from a benefit during the three-year period. In figure 1 the cumulative outflow chance is displayed, while figure 2 shows the monthly outflow rate. The blue line in figure 1 shows the proportion of the treatment group that has flown out of the benefit before the end of month t.[4] The red line shows the same variable for the non-treatment group. During the first ten months the chance of leaving the benefit is increasing faster for the treatment group than for the non-treatment group, implying that the proportion of the treatment group flowing out of the benefit increases faster than the corresponding measure for the non-treatment group. But after month 10 there is a catch-up effect for the non-treatment group and the difference between the two is declining. By the 22nd month the difference has become close to zero and remains small. From this month on the difference in outflow rate between the two groups is small.

[4] If a person has had a benefit period more than once during the observation period, the figure reflects the first time that the person leaves a benefit.

Figure 1 **Cumulative outflow probability from the benefit on a monthly basis**

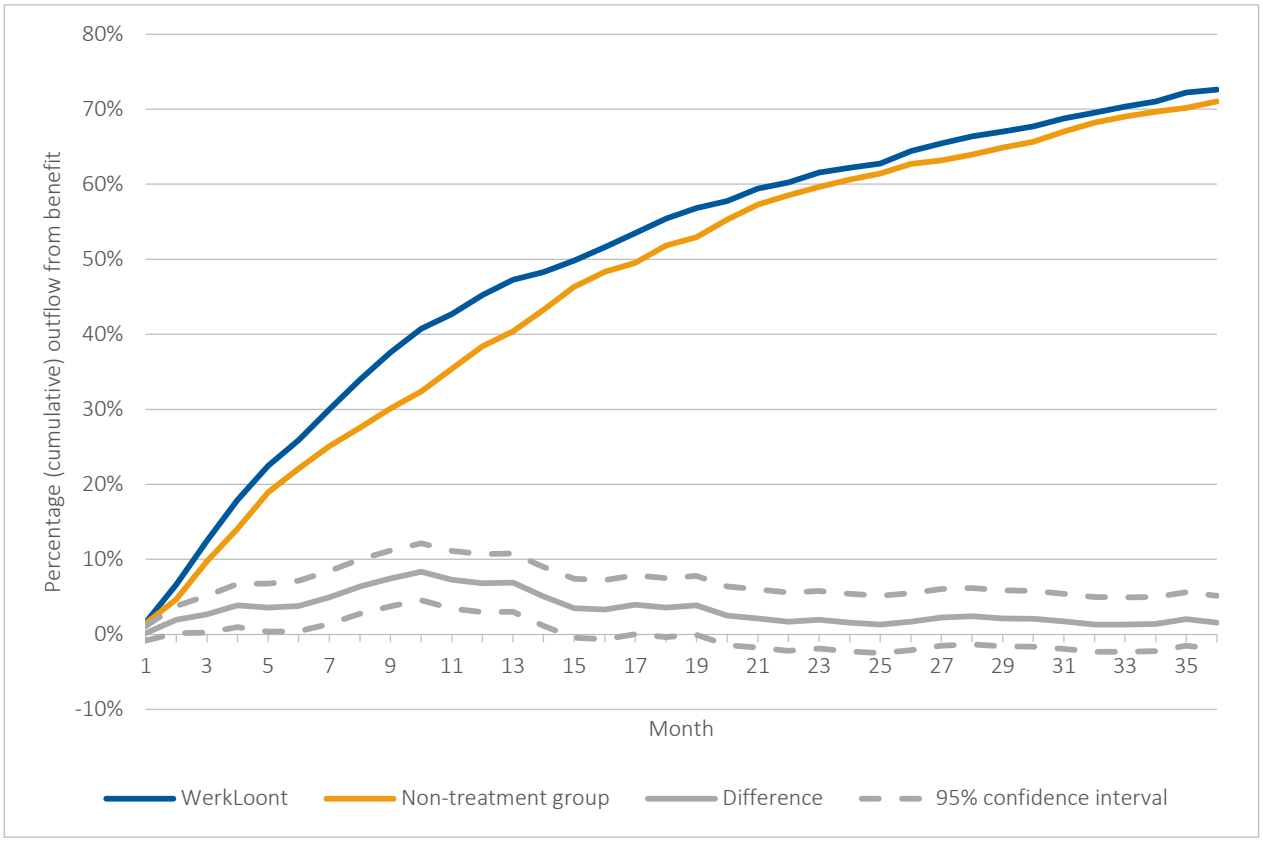
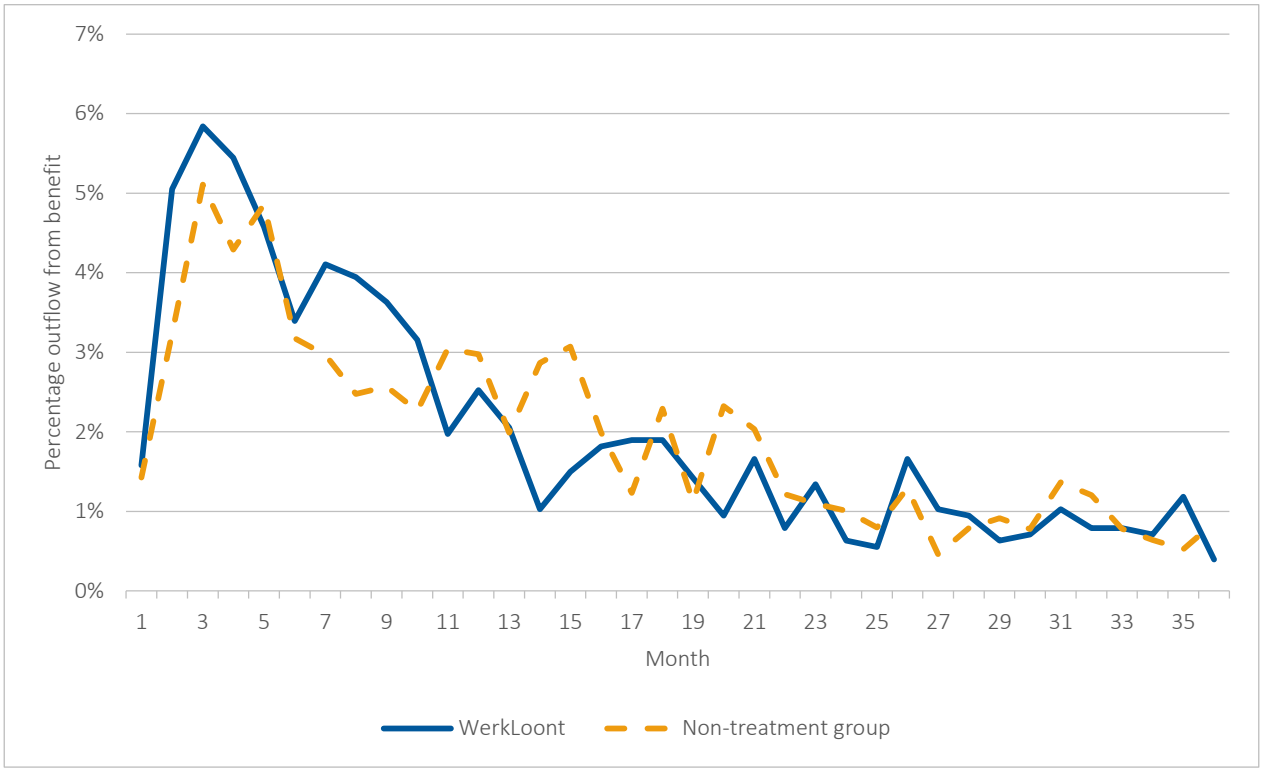


Figure 2 **Outflow rate from the benefit on a monthly basis**



For the Rotterdam municipality, outflow from a benefit as such is not the only objective of WerkLoont. The municipality wants their clients to find a job. To what extent does WerkLoont indeed stimulate clients to find employment? Table 5 gives the answer. After one year the outflow rate to employment for the treatment group is 5,8 percent higher than for the non-treatment group. This is a significant positive net effect. After two years the effect diminishes to 3,8 percent, but after three years it increases to 4,6 percent. These effects are also significant.

Table 5 Outflow to a job, total group and men and women separately

	Outflow to a job within …					
	1 year		2 years		3 years	
	N	%	N	%	N	%
Total						
Treatment group	472	36,4%	657	50,6%	775	59,7%
Non-treatment group	363	30,6%	555	46,8%	653	55,1%
Net effect		**5,8%****		**3,8%***		**4,6%****
Men						
Treatment group	293	35,6%	407	49,5%	487	59,2%
Non-treatment group	221	32,2%	346	50,4%	403	58,8%
Net effect		**3,4%**		**-0,9%**		**0,4%**
Women						
Treatment group	179	37,7%	250	52,6%	288	60,6%
Non-treatment group	142	28,5%	209	41,9%	251	50,1%
Net effect		**9,2%****		**10,7%****		**10,5%****

** Significant at 10% level; ** Significant at 5% level*

The positive net effect is almost completely due to women. Only during the first year there might be a reasonable positive effect for men, but the effect found (3,4%) is not significant. After two or three years the effect found for men is practically zero. For women the effect is much higher. After three years it is 10,5 percent and significant.

Employers have become more and more reluctant to provide permanent contracts to workers. This holds particularly for the low skilled segment of the labour market to which most social assistance beneficiaries belong. As a result, the latter are vulnerable for repeated unemployment. If we look at the persons who have flown out of the benefit, we find that more than 30 percent re-enters a benefit within the period of three years (table 6). For the treatment group this percentage is higher than for the non-treatment group, suggesting that the initial positive effect of WerkLoont on the chance of flowing out of the benefit is partly compensated by a higher chance of re-entering a benefit again later during the observation period. The chance of re-entering a benefit does not only include social assistance benefits, but also social insurance and disability benefits.

Table 6 **Re-entry in a (social assistance, social insurance or disability) benefit, total group and men and women separately**

	Re-entry in a benefit by persons who flowed out of a benefit within …					
	1 year		2 years		3 years	
	N	%	N	%	N	%
Total						
Treatment group	328	25,3%	408	31,4%	434	33,4%
Non-treatment group	241	20,3%	342	28,8%	364	30,7%
Net effect		**5,0%****		**2,6%**		**2,7%**
Men						
Treatment group	219	26,6%	279	33,9%	295	35,8%
Non-treatment group	156	22,7%	224	32,6%	235	34,2%
Net effect		**3,9%***		**1,3%**		**1,6%**
Women						
Treatment group	109	22,9%	129	27,2%	139	29,3%
Non-treatment group	85	17,0%	118	23,6%	129	25,9%
Net effect		**5,9%****		**3,6%**		**3,4%**

** Significant at 10% level; ** Significant at 5% level*

SHARES OF THE TOTAL TIME SPENT IN A BENEFIT OR JOB

In the previous sections we have seen that most people who were initially discouraged to claim a benefit often do so later during the observation period. Furthermore, more than 30 percent of the people who leave social assistance during the observation period, re-enter a benefit later during this period. In fact, people may have several transitions between a benefit situation, employment and inactivity without a benefit. Therefore, in this section we will look at the shares of the observation period spent in unemployment, employment and inactivity during a period of three years. These shares are then compared between the treatment group and the non-treatment group. In this way we do not only take the initial effects into account, but also the effects on subsequent transitions. Part-time benefits and part-time jobs have a weight smaller than 1, depending on the size of the benefit or the job.

Table 7 contains the shares of total time spent in a benefit, in a job and in the situation with neither a job nor a benefit. The results are given for the first year, for the first and second year together and for the whole period. In the first year the share spent in a benefit by the treatment group is 7,1 percent points smaller than the corresponding share of the non-treatment group, which is significant. The treatment group spends significantly more time in jobs, but in absolute terms this effect is smaller compared to the effect on the time share of benefits: 2,9 percent points. For the treatment group also the time spent in the situation with neither a job nor a benefit is significantly bigger: 4,2 percent points. The effects become smaller the longer the observation period. Over a period of three years the effect on the share spent in a benefit is 4,1 percent points.

Table 7 Shares of total time spent in benefit, a job or neither in a benefit nor in a job

	Period	Benefit	Job	Other
Treatment group	1 year	0,584	0,188	0,228
Non-treatment group		0,655	0,159	0,186
Net effect		**-0,071****	**0,029****	**0,042****
Treatment group	2 years	0,530	0,212	0,258
Non-treatment group		0,587	0,189	0,224
Net effect		**-0,057****	**0,023****	**0,034****
Treatment group	3 years	0,499	0,228	0,273
Non-treatment group		0,540	0,210	0,250
Net effect		**-0,041****	**0,018***	**0,023****

** Significant at 10% level; ** Significant at 5% level*

Included in the share of total time spent in a benefit are social assistance benefits, social insurance benefits and disability benefits. With respect to social assistance benefits we only have information about the benefits provided by the Rotterdam municipality. So, if a person belonging to the treatment group or the non-treatment group moves from Rotterdam to a different town and obtains a social benefit in his new town, this benefit is not included in the measure for the benefit share. Social insurance benefits are all included, independent of the place of residency. Furthermore, all jobs are included in the employment share.

Table 8 contains the shares of the three different types of benefits. The treatment group spent significantly less time in social assistance than the non-treatment group. However, the difference is relatively small: 4,5 percent points. Total time spent in the other types of benefits is small. For the latter the difference between both groups is not only small but also insignificant. It should be noted that according to Dutch regulations people are only entitled to social insurance benefits if they have had a job for a sufficiently long period of time before they become unemployed or disabled. For instance a person must have had employment during at least 26 weeks in the 36 weeks preceding unemployment to obtain an unemployment insurance benefit. This explains why relatively few participants in the experiment end up in a social insurance benefit. If during the experiment a person finds a job and becomes unemployed again, the job is often simply too short for it.

Table 8 Shares of total time of the three-year period spent in different types of benefits

	Social assistance	Unemployment insurance	Disability	Total
Treatment group	0,453	0,045	0,003	0,499
Non-treatment group	0,498	0,041	0,004	0,540
Net effect	**-0,045****	**0,004**	**-0,001**	**-0,041****

*** Significant at 5% level*

6 RESULTS: CORRECTION FOR SELECTION BIAS

Earlier in this paper we have seen that the composition of the treatment group deviates somewhat from the control group with respect to gender, age and having a child or not. The differences are not big but may still give rise to biased estimates of the effects. We can easily correct for this bias by running OLS regressions. Furthermore, we showed that slightly more than 12 percent of the clients who were originally assigned to the control group were actually sent to WerkLoont. It also happened that clients who were supposed to participate in WerkLoont did not do so in practice. The latter group is relatively small: almost 2,5 percent of the clients who were supposed to be part of the treatment group. If the outcomes for the non-compliers in the experimental group were the same as for compliers with similar observed characteristics in this group and the same would hold for the control group, OLS regressions would also provide a solution for this problem.

However, we cannot exclude the possibility that the non-compliers in the experimental group are relatively unmotivated and that the non-compliers in the control group, on the contrary, are relatively motivated. Motivation is likely to be correlated with labour market outcomes. Therefore, non-compliance might lead to biased estimates of the effects. For that reason, we also apply instrumental variables (IV) regressions, in which the randomisation is used as an instrument for the treatment variable. IV involves two steps. In the first step the treatment variable (a dummy variable with a value of 1 in case of treatment and 0 in case of non-treatment) is regressed on the randomisation (a dummy variable with a value of 1 for the experimental group and 0 for the control group) and on individual characteristics. In the second step the outcome variable (for example the fraction of time spent in employment) is regressed on the predicted treatment variable resulting from step 1 and on individual characteristics.

IV only provides consistent estimates if the monoticity requirement holds. A sufficient condition for this requirement to hold is that there are no defiers (Angrist, Imbens and Rubin, 1996). A defier is a person who is consistently doing the wrong thing. When he is assigned to the experimental group he moves to the non-treatment group, but when he is assigned to the control group he opts for treatment. We cannot observe defiers because we only observe people in the randomisation that took place. A person might have behaved differently if he were assigned to the other group. However, we think that this behaviour is likely to be exceptional. When the randomisation puts a person in the control group but he opts for treatment, we would expect him to stay in the treatment group if he were assigned to treatment in the first place. This is even more likely in case of job coaches changing the outcome of the randomisation. A job coach who insists on treatment for a person assigned to the control group, would not be inclined to change the result of the randomisation if the client was assigned to treatment in the first place. The same reasoning applies to clients who were assigned to the experimental group by the randomisation, but join the non-treatment group in practice. If we assume that there are no defiers, we can calculate the outcomes for the following groups: nevertakers among the non-treatment group (people who would also opt for non-treatment when assigned to the experimental group), alwaystakers among the treatment group (who would also opt for treatment when assigned to the control group) and compliers among both groups. In our previous paper mentioned earlier we find plausible results: compliers and alwaystakers have a relatively high fraction in employment (with a comparable size), while nevertakers have a low fraction in employment. Both on the basis of the arguments given and the results found, we concluded in a recent paper (De Hek and De Koning, 2018)[5] elaborating on our previous paper (De Hek and De Koning, 2015), that the number of defiers is likely to be small. Therefore, we think that IV is appropriate in our case. It is important to note that the IV estimates only apply to compliers.

The results of IV regressions are given in table 9. The fractions take into account part-time jobs and benefits. The effect of WerkLoont over a period of three years on the fraction of the time people spend in a benefit is estimated significantly at approximately 4,4 percent. This is similar to the effect found in the descriptive analysis. The effect on the fraction of time in employment is small and insignificant.

We also carried out IV regressions for subgroups. These results are also presented in table 9. Table 9 furthermore shows that the effect of WerkLoont may differ widely over time and between groups. The effect on both the fraction in a benefit and the fraction in employment decreases over time and is larger for women than for men. There is also a difference between people with and without children: the net effect of WerkLoont on the fraction in a benefit is higher for those without children, while the effect on the fraction in employment appears to be higher for those with children (but because the number of people with children is small it is more difficult to find small, significant effects). The effectiveness of the programme also differs for different age groups, with the effect on the fraction of time in a benefit being higher for people younger than 40.

[5] In this paper, which is based on the data used in De Hek and De Koning (2015) we also estimate models in which effects on employment and wages are modeled simultaneously.

Table 9 IV estimates of the effect of WerkLoont on the fraction in benefit and employment

	Fraction in benefit			Fraction in employment		
	1 year	2 years	3 years	1 year	2 years	3 years
Total	-6,9%**	-5,8%**	-4,4%**	2,8%**	2,0%*	1,1%
Men	-4,8%**	-3,5%**	-2,4%	1,5%	0,1%	-0,7%
Women	-9,9%**	-9,5%**	-7,4%**	4,4%**	4,6%**	3,7%**
Child(ren)	-5,2%**	-3,0%	-1,4%	3,0%	2,7%	2,9%
No child(ren)	-7,2%**	-6,5%**	-5,1%**	2,6%**	1,6%	0,5%
< 40 years old	-7,7%**	-6,5%**	-5,0%**	2,9%**	2,1%	1,0%
≥ 40 years old	-4,8%**	-4,3%	-2,8%	2,3%	1,7%	1,4%

** Significant at 10% level; ** Significant at 5% level*

7 COSTS AND BENEFITS

Given the effects found on the fractions of the time spent in a benefit and the time spent in employment, we can compute the savings on benefits obtained as a result of WerkLoont.

The yearly costs of the WerkLoont programme per year for the period 2012-2015 are given in table 10. The costs include not only the personnel costs of the job coaches but also an overhead component for other costs (such as housing costs). There is also information about the number of participants in the 2012-2015 period enabling us to compute the costs per participant. The resulting costs per participant for 2012 and 2013 overestimate the true costs, because the experiment led to a lower number of participants, while the number of job coaches, office space, etc. did not change. The cost figures for 2014 and 2015 are therefore more reliable. From this information we conclude that the costs per participant are between € 1.100 and € 1.200. In our calculations we will assume that the costs per participant are € 1.150.

Table 10 Total costs, number of participants and costs per participant (2012-2015)

Year	Total costs	Number of participants	Costs per participant
2012	€ 4.941.000	4.019	€ 1.229
2013	€ 5.117.012	3.400	€ 1.505
2014	€ 5.270.083	4.702	€ 1.121
2015	€ 5.341.945	4.642	€ 1.151

Source: Rotterdam Department of Work and Income

Social assistance benefits vary with age and household composition. Table 11 contains information about the level of the benefits for people older than 21 years of age until pension age. Starting from 2015 the benefits have increased for single persons, but the supplement has disappeared. Furthermore, the co-resident rule (*kostendelersnorm*) was implemented. This rule implies that one's benefits decrease with the number of persons above the age of 21 residing in the same house. The last row contains the average value of the benefits, which is calculated using data on benefit payments by the municipality. In our computations we assume that a monthly social assistance benefit is equal to € 1.000.

Table 11 Level of social assistance benefits per month (between the age of 21 and the pension age)

	2012	2013	2014	2015	2016
Single person	€ 668,21	€ 660,98	€ 677,27	€ 960,83	€ 972,70
Lone parent	€ 935,49	€ 925,37	€ 948,18	€ 960,83	€ 972,70
Couple	€ 1.336,42	€ 1.321,96	€ 1.354,54	€ 1.372,62	€ 1.389,57
Supplement (maximum)	€ 267,28	€ 264,39	€ 270,91		
Average	€ 968,90	€ 958,42	€ 982,04	€ 995,15	€ 1.007,45

During the three-year period participants in the experiment can also have other types of benefits. If a person has worked for at least six months and becomes unemployed he is entitled to an unemployment benefit within the framework of social insurance. This unemployment benefit is higher than a social assistance benefit. In 2015 it was on average € 1.352 per month for the Netherlands as a whole. If a worker becomes disabled, he is entitled to a disability benefit. In 2015 the average disability amounted to € 1.165 per month. However, the experimental group and the control group do not differ significantly in their use of social insurance-based benefits. Therefore, these benefits are not taken into account in the cost-benefit analysis.

Table 12 contains costs and benefits of WerkLoont per participant for a three-year period starting from the participant's entry into the program. The figures under 'year 2', and 'year 3' and 'total' are present values. The interest rate used is 4 percent. Given the short period the interest factor only has a small impact on the results

Based on descriptive statistics the effect on the fraction of the time spent in a benefit is equal to 4,1 percent points. This is an average effect over the three-year period. In the first year it is higher and in the second and third year lower. Given these effects, the present value of the benefits equals slightly more than € 1.450 per participant, which is approximately € 300 higher than the costs. If we use the effects found in the IV-analysis, the present value of the benefits and the difference between the benefits and costs is approximately € 400.

Table 12 Costs and benefits of WerkLoont

	Year 1	Year 2	Year 3	**Total**
Costs	€ 1.150	€ 0	€ 0	**€ 1.150**
Benefits based on descriptive statistics [a]	€ 852	€ 506	€ 104	**€ 1.462**
Benefits based on IV-analysis [b]	€ 828	€ 519	€ 200	**€ 1.547**

a) The benefits are calculated using the effects on the (part-time) fraction in a benefit of 7,1 percent points after one year, 5,7 percent points after two years and 4,1 percent points after three years (see table 7).
b) The benefits are calculated using the effects on the (part-time) fraction in a benefit of 6,9 percent points after one year, 5,8 percent points after two years and 4,4 percent points after three years (see table 9).

These calculations do not take displacement into account. It is likely that the higher job chances of the participants in WerkLoont lead to some displacement among other job seekers. Probably, this leads to higher unemployment and increased use of benefits among the latter. However, we have seen that the effect of WerkLoont on the fraction of time spent in employment is quite small compared to the effect of fraction of the time spent in a benefit. This means that the effect of displacement on the benefits is very limited. If we use the effects found in the IV-analysis, the break-even point (the point which makes costs and benefits equal to each other) is even found at a displacement rate of 100 percent. Given the effects found on the basis of descriptive statistics the break-even point is reached when the displacement rate is 47 percent.

8 CONCLUDING REMARKS

In this paper we have evaluated a Dutch work first programme called 'WerkLoont' on the basis of a random assignment evaluation design. The effects of the programme on benefit dependency and employment have been measured over a three-year period. Although the programme not only generates effects during the first year, but also during the second and third year, the effects become smaller through time. Nonetheless it is important to take a period longer than one year into account. The savings on benefits generated during the first year are not enough to cover the costs of the programme. However, when we also take the second year into account the savings exceed the costs. In the third year the savings are much smaller.

On average the net effects found are relatively small. Over a period of three years we find a reduction in the use of social benefits of 4,4 percent points. The positive effect on employment over the three-year period is even smaller in absolute terms: 1,1 percent. For women the two effects are higher (7,4 and 3,7 percent points respectively). But even the latter effects are far from earth-shaking.

The results seem to be in line with the conclusion from North-American work first programmes that mandatory job search programmes are more beneficial for the government than for participants. The effect on benefit savings is much higher than the effect on employment, particularly. In our earlier papers we also found that for men WerkLoont has a negative effect on the wage level of the first job found.[6] Furthermore, they are consistent with the general pattern found that women benefit more from reintegration measures than men.

Our analysis did not take displacement into account. However, it is certainly possible that due to the fact that WerkLoont leads to higher job entry chances for its participants, the chances of other jobseekers to find a job are reduced. As a result, the macro effects of WerkLoont may be less favourable in terms of social benefits and employment than the direct net effects found in our paper suggest. There is no information about the level of displacement. However, it is still possible to say something about the sensitivity of our results for displacement. First of all then, it is important to note that in our results the effects on the use of social benefits are much higher than the employment effects. Therefore, displacement must be quite high to reach the break-even point between savings and costs. When we use the IV estimates of the effects, a displacement rate of almost 100 percent is needed for it. The estimates based on descriptive statistics lead to a break-even point of almost 50 percent for the displacement rate.

When we include the displacement effect other, possibly positive side effects should also be taken into consideration. There is evidence that the transition from unemployment to a job has positive health effects, which lead to a reduction in the use of health care services Assuming that the displacement effect is considerably less than 100 percent, these other side effects may be relevant and increase the benefits of WerkLoont for society as a whole. Estimating the effect of employment on health is almost as difficult as estimating the displacement effect. The problem is that although a positive effect of employment on health is likely, the reverse (positive) effect of health on employment is much stronger. Studies taking the simultaneous relationship between employment and health into account typically find a weaker effect of employment on health than studies that do no correct for it. However, the available evidence seems to point to a negative effect of long-term unemployment on mental health (see for example Diette et al, 2012). Hence, as far as WerkLoont reduces long-term unemployment it probably improves mental health and reduces costs associated with mental health.

Although WerkLoont is cost-effective, the Rotterdam Department for Work and Income cannot be satisfied with the results in view of the small employment effects. For men these effects are even very small. In a qualitative study accompanying the quantitative study, in which a number of clients and job coaches have been interviewed, we tried to obtain information that could throw more light on the background of the

[6] This effect remains intact when we correct for selection bias, taking into account that the job finders in the treatment group may have different observed **and** unobserved characteristics than the job finders in the non-treatment group.

relatively small effects. Furthermore, we hoped that this information could provide suggestions for improving WerkLoont. Before we get to the results of this qualitative information, it is important to note that in the international literature the net effects of re-integration are generally found to be small. From this perspective it may not be realistic to expect much higher effects. Still we think that there is room for improvement. The impression obtained from the interviews is first and for all that many participants in WerkLoont face several problems at the same time. Problems mentioned are: a lack of professional competencies, a lack of job search competencies, debts and difficulties to make use of daycare for children. WerkLoont only provides limited or even no help for these problems. We also have the impression that the women belonging to the target group for WerkLoont are on average better equipped for the labour market than the men. Job search assistance and training may be just the help many female beneficiaries need to make the transition to a job. Possibly, many male participants have an employment history in professions and sectors in which employment opportunities have strongly diminished. This would mean that vocational training is also needed to enhance their re-employment chances. On the basis of our findings we think that WerkLoont could be made more effective by adding the following components: opportunities for professional training and help to solve financial problems. Furthermore, the work component may become more effective if it would provide more relevant work experience.

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ANNEX: RESULTS OF IV-ESTIMATIONS

Table A1 Results IV-estimations on the fraction of time in a benefit (over a period of three years)

Variable	Total	Sex		Children		Age	
		Men	Women	Child(ren)	No child(ren)	< 40 years	≥ 40 years
WerkLoont	-0,044**	-0,024	-0,074**	-0,014	-0,051**	-0,050**	-0.028
	(0,015)	(0,018)	(0,024)	(0,031)	(0,016)	(0,017)	(0,029)
Female	-0,036**			0,052	-0,049**	-0,035**	-0.030
	(0,014)			(0,042)	(0,015)	(0,016)	(0,027)
Non-Dutch nationality	0,021	0,043*	-0,027	-0,005	0,031	0.027	0.008
	(0,021)	(0,024)	(0,039)	(0,047)	(0,023)	(0,023)	(0,043)
Non-Dutch of birth	0,015	0,019	0,008	0,023	0,013	0.003	0.043
	(0,014)	(0,017)	(0,022)	(0,030)	(0,015)	(0,016)	(0,027)
Partner	-0,119**	-0,096**	-0,108**	-0,047	-0,120**	-0,134**	-0,081**
	(0,018)	(0,026)	(0,030)	(0,041)	(0,023)	(0,022)	(0,033)
Age	0,009**	0,009**	0,009**	0,006**	0,009**	0,012**	0,011**
	(0,001)	(0,001)	(0,001)	(0,002)	(0,001)	(0,002)	(0,002)
One or more child(ren)	0,134**	0,077**	0,158**			0,138**	0,111**
	(0,017)	(0,031)	(0,021)			(0,020)	(0,032)
Participated (again) after the experiment	0,027*	0,039**	0,002	-0,026	0,039**	0,045**	-0.037
	(0,016)	(0,019)	(0,027)	(0,036)	(0,017)	(0,018)	(0,033)
Constant	0,231**	0,204**	0,219**	0,359**	0,217**	0,158**	0.100
	(0,026)	(0,033)	(0,040)	(0,079)	(0,028)	(0,047)	(0,122)
R^2	0,083	0,066	0,116	0,033	0,082	0,062	0,033
N	3.207	1.971	1.236	700	2.507	2.338	869

** Significant at 10% level; ** significant at 5% level*

Table A2 Results IV-estimations on the fraction of time in employment (over a period of three years)

Variable	Total	Sex		Children		Age	
		Men	Women	Child(ren)	No child(ren)	< 40 years	≥ 40 years
WerkLoont	0,011	-0,007	0,037**	0,029	0,005	0.010	0.014
	(0,011)	(0,014)	(0,017)	(0,022)	(0,013)	(0,013)	(0,019)
Female	0,000			-0,068**	0,014	0.006	-0.003
	(0,010)			(0,029)	(0,012)	(0,013)	(0,018)
Non-Dutch nationality	-0,033**	-0,026	-0,052*	0,013	-0,044**	-0,040**	-0.008
	(0,016)	(0,019)	(0,028)	(0,033)	(0,018)	(0,019)	(0,029)
Non-Dutch of birth	-0,050**	-0,061**	-0,026	-0,031	-0,057**	-0,044**	-0,079**
	(0,010)	(0,013)	(0,016)	(0,021)	(0,012)	(0,013)	(0,018)
Partner	0,005	0,049**	-0,100**	-0,055*	0,000	0.016	-0.032
	(0,014)	(0,020)	(0,022)	(0,029)	(0,018)	(0,017)	(0,022)
Age	-0,004**	-0,004**	-0,003**	0,000	-0,004**	-0,002*	-0,003*
	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,002)
One or more child(ren)	-0,042**	-0,028	-0,080**			-0,073**	0,027
	(0,013)	(0,024)	(0,015)			(0,016)	(0,022)
Participated (again) after the experiment	-0,024**	-0,029**	-0,008	0,002	-0,029**	-0,045**	0,039*
	(0,012)	(0,015)	(0,020)	(0,025)	(0,014)	(0,014)	(0,023)
Constant	0,378**	0,411**	0,360**	0,229**	0,413**	0,342**	0,344**
	(0,020)	(0,026)	(0,029)	(0,055)	(0,022)	(0,038)	(0,083)
R^2	0,041	0,045	0,069	0,017	0,051	0,029	0,025
N	3.207	1.971	1.236	700	2.507	2.338	869

** Significant at 10% level; ** significant at 5% level*

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