

From Social Assistance to Self-Sufficiency: Low Income Work as a Stepping Stone

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Abstract

Welfare reforms often focus on stimulating employment among benefit recipients, based on the theoretical mechanism that the performance of low income work will serve as a stepping stone towards financial self-sufficiency. Alternative theories, however, argue that the acceptance of low income work will reduce job search intensity and can signal low productivity, and therefore will not enable people to support themselves. Using longitudinal administrative data and discrete time linear probability models, we follow all social assistance recipients in the Netherlands from 2010 to 2015, and analyse whether, and for whom, low income work functions as a stepping stone towards sustainable self-sufficiency. We find that social assistance recipients are more likely to become self-sufficient when they are active in low income work. This stepping stone effect applies in particular to benefit recipients with limited work experience, a higher educational level, a shorter duration of welfare receipt and to those who belong to the native Dutch majority. The type of employment also matters: low income work through temporary employment agencies is found to be the most effective stepping stone towards self-sufficiency.

Introduction

Recent welfare reforms, both in the United States and in European countries, often focus on stimulating employment among benefit recipients (Cancian, 2001; Van Oorschot, 2002). An underlying premise of these labour market activation policies is that people will eventually be better off if they take up some kind of paid employment (Brown, 1997). From this perspective, jobs that do not offer a living wage are regarded as stepping stones

towards employment providing higher wages or more hours and thereby financial self-sufficiency (Pavetti and Acs, 2001; Johnson and Corcoran, 2003). In this line of reasoning, jobs provide work experience, labour market contacts, and a means to signal one's productivity and willingness to work. However, low income work could also be a trap. Some researchers argue that most welfare recipients can only obtain jobs with few opportunities for training and promotion (Burtless, 1995; Andress and

Lohmann, 2008). In addition, (low income) work reduces job search intensity (Böheim and Weber, 2011; Voßemer and Schuck, 2016) and can be a signal of low productivity (McCormick, 1990).

This article focuses on social assistance recipients in the Netherlands and the role of low income work as a stepping stone towards self-sufficiency. If a working person earns less than the applicable Dutch statutory social minimum, due to a combination of a low hourly wage and not working fulltime, and other household members do not raise the total household income above the minimum threshold, this income is supplemented with social assistance. In this article, we define low income work as receiving both an income from work and from social assistance. Self-sufficiency is defined as earning an income on the labour market and receiving no income from social assistance. Low income jobs in the Netherlands mostly consists of on-call jobs, small part-time positions and temporary agency jobs. In this type of employment, people typically have low hourly earnings and are unable to obtain enough (stable) work hours (Vrooman *et al.*, 2018). These are almost by definition jobs in the lower segment of the labour market. People with more human capital or social capital tend to have higher hourly earnings and better chances to end up in jobs providing more hours and continuity (Vrooman *et al.*, 2018).¹

Earlier research on the effects of low income jobs among benefit recipients finds mixed results. Most studies indicate, in line with the stepping stone notion, that earnings of former benefit recipients who start in a low income job increase as they gain work experience (Loeb and Corcoran, 2001) and that accepting low income work improves the chances of unemployed people to obtain higher income work (Grün, Mahringer and Rhein, 2011; Knabe and Plum, 2013). Other research, however, suggests that (certain types of) low income jobs are detrimental to the subsequent labour market outcomes of welfare recipients (Böheim and Weber, 2011; Autor and Houseman, 2017). In addition, a number of studies indicate that low income work is a stepping stone towards regular employment for some benefit recipients but not for others [e.g. only for people who have been unemployed for a longer period (Caliendo, Künn and Uhlendorff, 2016; Lietzmann, Schmelzer and Wiemers, 2017), for men but not for women (Kyyrä, 2010) or only for young and highly skilled people (Grün, Mahringer and Rhein, 2011)]; or that certain jobs (e.g. higher status jobs) are more effective stepping stones than others (Grün, Mahringer and Rhein, 2011; Knabe and Plum, 2013). Some of these studies on differential effects of low income work, however, rely on interaction

effects specified in logistic models, which might be problematic (Mood, 2010).

The mixed results of previous research may be due to the fact that it is difficult to determine whether low income work actually promotes exits from social assistance, or that people who obtain low income work are inherently different from other (inactive) benefit recipients. Diverging outcomes might reflect disparities in research design and methodology (Ichino, Mealli and Nannicini, 2008). While most studies provide support for the stepping stone mechanism, studies that use more advanced controls for heterogeneity (which include the *timing* of work and unemployment spells) such as dynamic matching (Voßemer and Schuck, 2016; Lietzmann *et al.*, 2017) or the timing of events approach (Kyyrä, 2010; Kyyrä, Parrotta and Rosholm, 2013) generally find more negative or mixed effects. The *experimental* study by Autor and Houseman (2010) also finds mixed effects; placing welfare recipients in temporary agency work reduces later employment and earnings, while direct hire jobs improve later labour market outcomes.

In many Western European countries, the combination of a generous welfare state and employment protection used to prevent the emergence of low quality jobs and in-work poverty (Peña-Casas and Latta, 2004). This, however, has changed over the past decades; and the Netherlands provides a pertinent example of this shift in a European context (Eichhorst *et al.*, 2008; Snel, De Boom and Engbersen, 2008). Vulnerable groups have been stimulated to participate on the labour market, and recent years have witnessed a remarkable increase in both the numbers of low-paid, part-time and precarious jobs, and in involuntary self-employment (Eurofound, 2015; OECD, 2015). The Netherlands can thus offer important insights in the role of low income work as a stepping stone. In a European context, it also is an interesting case due to its hybrid institutional regime, which combines a comparatively high degree of social solidarity with substantial labour market deregulation and the stimulation of part-time employment (Visser, 2013; Thelen, 2014; Powell, Yörük and Bargu, 2020). About 9 per cent of social assistance recipients in the Netherlands combine welfare and work; they work but their household income is below the statutory social minimum, and therefore they still remain dependent on benefits (Kraaijeveld-de Gelder, Redeman and Weidum, 2016).

The Netherlands is also relevant from a data availability point of view. This article uses administrative data on the entire population of the Netherlands. The very large dataset with longitudinal information on

welfare and low income work allows us to study in detail for whom low income work may be especially effective, and which types of employment provide the most promising stepping stones towards self-sufficiency. We apply discrete time linear probability modelling to estimate the probability of exit from social assistance towards sustainable self-sufficiency and which low income jobs promote sustainable self-sufficiency for whom. Thereby, we perform a number of sensitivity analyses to test if and how the outcomes are dependent on research design and methodology.

Low Income Work as a Stepping Stone

Low income work can function as a stepping stone towards higher income work and thus self-sufficiency because it contributes to an individual's earning capacity and employability. Theoretically, this may occur through three channels. Firstly, earning capacity depends on an individual's human capital (Becker, 1964). Through work people acquire additional skills. In periods of joblessness, on the other hand, human capital deteriorates (Pissarides, 1992) and therefore earning capacity decreases (Mincer and Ofek, 1982).

Secondly, social capital affects employability. Social relations can produce gains through the information or influence that they provide (Lin, 2002). Social assistance recipients have limited contacts with the labour market and therefore little access to labour market information. Once they start working, they are likely to acquire valuable information, such as how and where to apply for a (better) job (Harris, 1993; Aguilera, 2008). Low income work can thus be used as an employability strategy to build connections in a network of employers (Smith, 2010).

Thirdly, employers depend on signals in their decision whom to hire, as they have limited information about skills, productivity, or work ethic of potential employees (Knabe and Plum, 2013). Employers might be reluctant to hire welfare recipients (Loeb and Corcoran, 2001) as benefit receipt signals a lack of work ethic, unfavourable habits, or instability (Hershey and Pavetti, 1997). However, if welfare recipients manage to find and keep a job, this may signal to employers that they are reliable people and possess basic work skills. This makes them more attractive than welfare recipients without a job. Holding a job, even if it does not earn a living wage, can therefore be an effective employability strategy (Smith, 2010). Employers might also use low wage, low quality jobs as a way to screen newly hired workers. If workers prove themselves, they can be promoted to better jobs (Grün, Mahringer and Rhein,

2011). Based on human capital, social capital, and signalling theory, we thus expect that low income work increases employability. Our first hypothesis is therefore that low income work will increase the probability of exit from social assistance to self-sufficiency (*hypothesis 1a*).

Low Income Work as a Trap

On the other hand, low income work can also be a trap, reducing rather than improving the opportunities of social assistance recipients to find higher income work and achieve self-sufficiency. Firstly, not all jobs might (equally) lead to an increase in human capital (Newman, 1999). If people accept jobs with low requirements the skills they originally possessed could become outdated (Pissarides, 1992; Voßemer and Schuck, 2016). While they might acquire new job specific skills, these might not be useful in higher income work (Baert, Cockx and Verhaest, 2013; Pissarides, 1992). Furthermore, the social capital (connections to employers) they gain might not be transferable from low income sectors to higher income work. Secondly, although a period of unemployment could signal a low productivity, performing a low income job might be a similar token (McCormick, 1990; Layard, Nickell and Jackman, 1991; Grün, Mahringer and Rhein, 2011; Knabe and Plum, 2013). Finally, compared to people who are unemployed, people who have a job will have less time to search for a better job. A lower search intensity could lower their probability to find higher income work (Böheim and Weber, 2011; Baert *et al.*, 2013; Voßemer and Schuck, 2016). Therefore, we can also expect that low income work is a trap; it will not increase the probability of exits from social assistance to self-sufficiency (*hypothesis 1b*).

Individual Differences in the Effect of Low Income Work

Whether and to what extent low income work increases the probability to exit from social assistance to self-sufficiency is likely to differ between individuals. Firstly, an individual's work experience might influence the effect of low income work on subsequent self-sufficiency. Individuals with little work experience might benefit more from the work experience and human capital they gain from low income work. The marginal effects of increasing work experience and human capital are smaller for those who already possess them in large quantities. In addition, unexperienced individuals will have had least access to labour market information, such as how to apply for a job or where attractive and

suitable jobs are available (Aguilera, 2008; Moerbeek and Flap, 2008). Therefore, people with least work experience might benefit most from the information that they gain from working. Finally, performing low income work allows people to show employers that they are reliable and productive employees (Smith, 2010), which is especially important for those who have not proven themselves on the labour market before. Therefore, we expect that the effect of low income work on self-sufficiency is larger if people have less work experience (*hypothesis 2*).

In a similar vein, low educated people might benefit most from the work experience they gain from (low income) work, as they possess little human capital. Furthermore, connections to employers can be especially effective for low educated people, as they are more likely to depend on finding work through informal channels than people with higher educational credentials (Ioannides and Loury, 2004). Finally, work experience can be an especially effective signal for low educated people, as they have few other means (educational credentials) to signal their productivity; whereas for the higher educated, performing low income work may be a negative signal to future employers (Caliendo *et al.*, 2016). This might indicate that their true productivity is lower than their level of education would suggest (Knabe and Plum, 2013). Therefore, we expect that especially lower educated people benefit from low income work (*hypothesis 3a*).

However, according to Feldstein (1973), employers can only afford to provide on the job training if the productivity of the employee during training at least equals his wage. Employers are not allowed to pay less than the minimum wage, and low skilled employees consequently will not receive on the job training. Higher skilled, more productive people permit employers to both pay the minimum wage and provide training. As a consequence, the lowest skilled employees will accumulate less human capital on the job and have less opportunities to improve their labour market position any further. Based on the human capital perspective, it can therefore also be expected that low educated people benefit less from low income employment than higher educated people (*hypothesis 3b*).

Furthermore, the duration of benefit receipt might affect the impact of low income work on subsequent self-sufficiency. If people do not work for a longer period of time, they lose contact to people with valuable labour market information (Mood, 2013). In addition, human capital deteriorates if not used (Pissarides, 1992) and long-term inactivity can be interpreted as a signal of low productivity (Mood, 2013). Therefore, especially long-

term benefit recipients might benefit from (low income) work (*hypothesis 4*) as it helps them to regain their human and social capital (Smith, 2010) and to signal their productivity and willingness to work. Earlier research indicates that low income work increases the exit rate from unemployment especially if people have been without a job over a longer period of time (Caliendo *et al.*, 2016; Lietzmann *et al.*, 2017).

The effect of low income work might also differ between ethnic groups. Contact with the labour market, and the access to labour market information it provides, could be especially important for ethnic minority groups, as they generally have lower access to social capital that is useful in the labour market in their family and friendship networks (Lin, 2000; Völker, Pinkster and Flap, 2008; Van Tubergen and Volker, 2015). Consequently, from the social capital perspective, we expect that the effect of low income work on self-sufficiency is especially large for non-native social assistance recipients (*hypothesis 5a*).

However, Doeringer and Piore (1971) argue that due to discriminatory recruitment practices, black workers are less likely than whites holding similar low income jobs to gain access to internal labour markets and to the corresponding opportunities for training and promotion. In the Netherlands, upward mobility within organizations is also found to be lower for ethnic minorities than for natives (Dagevos, 2001). In addition, ethnic minorities more often find low income work in enclave labour markets, in organizations run by co-ethnics. The small size of the enclave labour market constrains their opportunities for mobility towards higher income jobs *within* the enclave. The opportunities for upwards mobility *outside* the enclave labour market will also be limited, because skills, work experience (Bailey and Waldinger, 1991), labour market information, and connections to employers may not be transferable to the mainstream labour market. Therefore, based on both the human capital and the social capital perspective it can also be expected that the effect of low income work on self-sufficiency is *smaller* for non-native social assistance recipients (*hypothesis 5b*). We have no reason to expect the strength of the signalling mechanism to differ between ethnic groups (see also Birkelund, Heggebo and Rogstad, 2016).

Social Assistance in the Netherlands

In the Netherlands, social assistance guarantees a minimum income for all Dutch citizens. Social assistance benefits are means tested, thus people only qualify if their household does not have sufficient earnings from

work, self-employment, or other benefits and if assets remain below a threshold amount (Snel *et al.*, 2008). Once a household is awarded social assistance, all of its adult members are registered as recipients. Since people only qualify if they are not or no longer entitled to unemployment benefits, they tend to lack recent work experience, which makes them vulnerable on the labour market (Van Berkel, 2017). Municipalities in the Netherlands assess individual social assistance recipients with regard to their fitness for the labour market in terms of their skills, qualifications, and sociomedical handicaps. A majority of social assistance recipients are deemed to be at a considerable distance from the labour market: they need training and sometimes medical and social care before they are able to take up paid employment (Divosa, 2011).

Between 2004 and 2015, social assistance was organized in the Work and Social Assistance Act (WWB), which made municipalities financially responsible for social assistance and strengthened their role in social and labour market activation (Van Berkel, Van der Aa and Van Gestel, 2010). Because municipalities have a financial incentive in the WWB to reduce the number of social assistance recipients, activation programs tend to target clients closest to the labour market. Between 2010 and 2015 the level of social assistance remained more or less the same. While eligibility criteria have slightly changed in January 2015, it seems unlikely this has affected our analyses.² Social assistance recipients have to search for work and to participate in activation programs if offered by the municipality. People can get a temporary exemption of this obligation if they have care obligations for children or relatives. Municipalities have discretion in their application of this exemption, in how (strict) they control and sanction non-compliance (Eleveld, 2014), and in what activation programs they offer to whom (Broersma, Edzes and Van Dijk, 2011). Only a minority of social assistance recipients (29 per cent) has an exemption of the obligation to search for work (Divosa, 2011).

Social assistance is set at 70 per cent of the net minimum fulltime wage for single persons, 90 per cent of this amount for one-parent families, and 100 per cent for couples with or without children.³ A fulltime job thus implies that people do not qualify for social assistance; for single persons and one-parent families this also occurs when they are employed in a large part-time job. However, not everybody who works is self-sufficient. People with precarious, flexible, or part-time jobs who are unable to obtain sufficient (stable) working hours may end up below the social minimum, thus becoming eligible for social assistance (Peña-Casas and Latta,

2004). Some people cannot or do not want to work a high number of hours due to, for instance, (child)care responsibilities (Snel *et al.*, 2008; Hoff, 2010). Finally, the Netherlands has a rapidly growing group of sole traders; and the minimum wage does not apply to them.

If people earn less than the social minimum, their income will be supplemented up to social assistance level. The benefit is typically reduced by the full amount of the income from work, resulting in limited financial incentives to take up employment or extend working hours. However, municipalities in the Netherlands can apply earnings disregards, implying that recipients who earn less than the social minimum may keep a small part of their income from work. In doing so they are constrained by national rules: earnings disregards are maximized to 6 months (30 months for single parents) and 25 per cent of the additional income and may not exceed about 200 euros a month.⁴ Municipalities use earnings disregards to promote part-time work, assuming it will decrease their social assistance expenditure and promote long-term employability among recipients. Although a majority of municipalities allow earnings disregards for most or all social assistance recipients, certain municipalities only target specific groups, and others do not apply earnings disregards at all (Dodeweerd, Van der Harg and Van Klaveren, 2015).

Data and Methodology

Data, Selections and Events

For this article, we use administrative data on the entire population of the Netherlands⁵. We select all people who received any income from social assistance in January 2010 and follow these people over time from 2010 until 2015. We limit our selection to people born in or after 1951, because older people will receive state pensions by 2015 and therefore no longer depend on social assistance. People born after 1982 are also left out, as they might be ineligible for social assistance in 2010 due to the scheme's lower age limit. In total 270,920 people born between 1951 and 1982 received social assistance in January 2010. If two people within this selection form a household together their observations are not independent. Therefore, we selected one random person per household if two or more people lived together in January 2010. As a result, we deleted 34,386 individuals. This implies that our data are not representative for all social assistance recipients (as individuals who are living together with a partner are underrepresented), but for households with both adult members aged between 28 and 55 who receive social assistance in

2010.⁶ Two individuals are excluded because we have no data on their (lagged) activity. All analyses are done on the remaining 236,532 individuals.

On this selection of people who all receive social assistance in January 2010, we estimate if and when in the period between January 2010 and 2015 they exit from social assistance to self-sufficiency. Exit from social assistance is defined as not receiving any income from social assistance in a given month. Since we are interested in sustainable exits from social assistance, we focus on individuals who become independent from social assistance and remain so for at least six consecutive months⁷. Since our hypotheses focus on people who ‘work themselves off welfare’, we only focus on social assistance recipients who become active on the labour market and exclude people whose benefit ends because they start living with a partner who has an income, their partner’s income increases, or they become eligible for a different benefit, such as disability insurance. We define the experience of an event as follows: (i) receiving no income from social assistance starting that month for six consecutive months and (ii) having labour market activity as main source of income in the first month without social assistance. We can, however, not be sure that their *personal* income is above the social minimum. Possibly (some of) these people have a personal income below the social minimum but stopped claiming social assistance due to (the combination of their own and) their partners income.

For all individuals, we have monthly information on their income sources from 2010 until 2015. Because we can only follow people up to the end of 2015, the latest moment of sustainable exit is July 2015. We created a person-month file, in which individuals who remain on social assistance for the entire period until July 2015 contribute 67 observations (one for each month from January 2010 until July 2015). Other individuals contribute one observation for each month until they experience the event for the first time or are right-censored. There are 37,850 individuals who experience an event (Table 1). 53,122 individuals exit from social assistance at some point but their main source of income

is not derived from labour market activity. They are no longer at risk of working themselves off welfare and are therefore censored in the first month without social assistance receipt. There are 139,815 individuals who receive social assistance for the entire period from January 2010 until July 2015 or until they leave the data due to their death or emigration. These people are censored in July 2015 or in the last month they are present in the data. A final group of 5,755 individuals (2 per cent) left social assistance towards labour market activity, but returned to social assistance within 6 months. We chose to censor these people when they first leave social assistance, and to not inspect subsequent entries and exits. As this is only a small group, this does not have a strong effect on the results.

Independent Variables

Our main independent variable is whether people perform low income work. Using information on income sources, this is defined as receiving income from work as well as from social assistance in a certain month. We lag this variable two months; that is, we estimate the probability of experiencing an event in March from having low income work in January as compared to not being active on the labour market in January.⁸ Individuals who find a job and become independent of social assistance in March might already have started their job (with an income above the social minimum) somewhere in February, while also receiving social assistance for the first part of that month. As we are interested in the effect of low income work, that is, working with an income below the social minimum and thus at the same time also receiving social assistance, we lag the (low income) work variable by 2 months⁹. People are active in low income work in 8 per cent of the (lagged) person-months

Table 2. Descriptive statistics of time-varying independent variables ($N = 11,452,106$).

| | Min | Max | Mean | SD |
|-----------------------------|-----|-----|--------|------|
| Low-income work ($t - 2$) | 0 | 1 | 0.0756 | 0.26 |
| Self-employed ($t - 2$) | 0 | 1 | 0.0096 | 0.10 |

Table 1. Events and censoring.

| | N | Per cent | No. of months in data |
|-------------------------------------|---------|----------|-----------------------|
| Event | 37,850 | 16 | 20 |
| Exit towards inactivity | 53,112 | 22 | 26 |
| Remain entire period on SA | 139,815 | 59 | 66 |
| Short term exit towards LM activity | 5,755 | 2 | 22 |
| Total | 236,532 | 100 | 48 |

(Table 2). In less than 0.1 per cent of the person-months there are no data on an individual's lagged activity ($t - 2$). These person-months are excluded from the analyses, therefore all models are estimated on 11,452,106 person-months.

Secondly, we include the personal characteristics gender, age, ethnicity, household type, and educational level (Table 3). Fifty-nine per cent of the included individuals are female, and the average age is 44. In the models, we include the variable 'age minus 28', which represents the number of years an individual is older than the youngest people in our data. Ethnicity is based on the Statistics Netherlands definition of ethnic groups,¹⁰ and we distinguish between non-western minorities, western minorities, and native Dutch people (reference category). Educational level is defined as the highest completed level of education¹¹. High educated people finished university (of applied sciences), middle educated people finished vocational training or higher secondary education. Only 20 per cent of the individuals are living together with a partner in January 2010, while 44 per cent have children living at home.

Thirdly, we include information on individual labour market histories based on monthly information on income sources. Work experience is defined as the total number of years a person was active on the labour market before January 2010. Social assistance duration is the total consecutive period a person received social assistance before the start of our observation period in January 2010. These variables are measured in months over the period 1999–2010, because there are no earlier data available, and therefore number a maximum of 11 years.

Table 3. Descriptive statistics of time-invariant independent variables ($N = 236,532$).

| | Min | Max | Mean | SD |
|----------------------------|-----|-----|-------|------|
| Female | 0 | 1 | 0.59 | |
| Non-western minority | 0 | 1 | 0.43 | |
| Western minority | 0 | 1 | 0.11 | |
| Age | 28 | 59 | 44.20 | 8.87 |
| Age-28 | 0 | 31 | 16.20 | 8.87 |
| Low educated | 0 | 1 | 0.38 | |
| Middle educated | 0 | 1 | 0.18 | |
| High educated | 0 | 1 | 0.04 | |
| Education unknown | 0 | 1 | 0.40 | |
| Partner | 0 | 1 | 0.20 | |
| Children | 0 | 1 | 0.44 | |
| Work experience | 0 | 11 | 2.41 | 2.97 |
| Social assistance duration | 0 | 11 | 4.96 | 4.11 |

Table 4. Job characteristics of person-months in which people work ($t - 2$) ($N = 866,047$).

| | N | Per cent |
|-----------------------------|---------|----------|
| Job type | | |
| Intern | 12,786 | 1 |
| Sheltered employment | 114,012 | 13 |
| Temporary agency worker | 71,214 | 8 |
| On call worker | 101,221 | 12 |
| Regular employment contract | 565,734 | 65 |
| Unknown | 1,080 | 0.12 |

For the people who have a low income job in a given month, we include the type of employment contract (Table 4). We know whether people are interns, work in sheltered employment,¹² are on-call workers, temporary agency workers or have a regular employment contract (reference category). Within the group of people who are active in low income work, we compare people with other employment contracts to people with regular employment contracts.

Methodology

We estimate the probability that an individual exits from social assistance to self-sufficiency in a discrete time linear probability model with robust Huber-White standard errors.¹³ A discrete time model estimates the probability that an individual experiences an event in a month, under the condition that this event has not happened in the months since they could experience the event (i.e. the risk period). We follow people over time from January 2010, although most people have also received social assistance in the preceding months and therefore their theoretical risk period already started earlier. To take account of the latter, we control for the duration of social assistance before our observation period started. As we have only data from 1999 onwards, we underestimate the duration of social assistance receipt for the people who have been consecutively on social assistance since 1999. However, it is unlikely that after such a long period in social assistance an additional year will make much of a difference for the likelihood of leaving social assistance. We do not distinguish between people who experience the event for the first time and who have experienced it before. Instead, we control for peoples' work and social assistance history to take into account the possible influence of previous experiences of entering and leaving social assistance. We prefer a linear probability over a logit model because in linear probability models regression and interaction coefficients are directly interpretable¹⁴.

Social assistance recipients with low income work are much more likely to become self-sufficient. However, it is unclear whether this is a causal effect of work, or whether working social assistance recipients are inherently different from their inactive counterparts and only therefore more likely to become self-sufficient. Therefore, research outcomes might depend on methodology; studies that do not accurately control for this heterogeneity might overestimate the true effects, while studies that do are likely to find smaller or insignificant effects. We step by step include controls for this heterogeneity and perform various sensitivity analysis to test whether the outcomes are robust or depend on methodology.

We start with estimating the effect of low income work on exits from social assistance without any control variables. The next step is to include control variables such as age, educational level and household situation that might affect both the probability that social assistance recipients do low income work and the probability that they subsequently become self-sufficient. Since the amount of social assistance depends on household type, partnered people and single parents need to earn a higher income to become self-sufficient than singles without children. We include the presence of a partner and or children as control variables in the analyses also to take this possible influence of household composition into account.

Unobserved personal characteristics such as abilities and motivation can affect both low income work and self-sufficiency. Other researchers (Grün, Mahringer and Rhein, 2011; Mood, 2013) use information on an individual's labour market history and rely on the assumption that relevant unobserved personal characteristics such as ability and motivation are highly related to an individual's employment and social assistance history. They take the frequency, duration, and sequences of prior employment and benefit receipt spells into account as controls for unobserved heterogeneity. Our next step, using the same assumption, is to take into account prior work experience and benefit receipt as a way to reduce unobserved heterogeneity. However, within groups with a similar labour market history, there might still be unobserved heterogeneity; that is, working social assistance recipients might still be more motivated or more able than their inactive counterparts with similar labour market histories and (only) therefore more likely to become self-sufficient.

Furthermore, we include low income work in (all) our models as a time-varying covariate. People can be active in low income work in some months and inactive in other months. We estimate the effect of low income

work *in a certain month* on the probability of experiencing an event; that is we estimate whether people become self-sufficient when they are active in low income work.

As a first sensitivity analysis, we re-estimate the models only on individuals who are active in low income work in some months and inactive in other months (43,164 individuals, 18 per cent). All these individuals have at some point found and accepted a job with an income below the social minimum. By re-estimating the models on this subgroup, we no longer compare people who are active in low income work to people who may be unable or unwilling to work (and who might solely for that reason be less likely to experience an event). Because all individuals now may be regarded as willing and able to work, the only difference is the timing. We thus estimate whether the exit probability to self-sufficiency is higher in months in which people are active in low income work, for individuals who are all at some point active in low income work.

In a second sensitivity analysis, we stratify the population in five groups based on their propensity to be active in low income work in at least 1 month. Thereby, we test if also *within* a group of people who are similar in their propensity to find and accept low income work, being active in low income work increases the probability to exit from social assistance (see further D'Agostino, 1998 on the use of propensity score stratification).

Results

In all models, we control for time in months since January 2010. The probabilities of experiencing an event roughly follow a second order polynomial distribution where they decrease over time at a diminishing rate. This decrease may result from a longer duration in social assistance, but also from slightly worse labour market circumstances in later years (unemployment increased from 5 per cent in 2010 to 6.9 per cent in 2015). Therefore, we include both time and time squared as controls in all the models. In model 1 (Table 5), we only add low income work (in month $t - 2$) and self-employment to estimate the probability of experiencing an event (in month t). The probability that inactive social assistance recipients experience an event in the zeroth¹⁵ month is 0.56 per cent, while for active social assistance recipients this is 1.67 per cent point higher. Although the model coefficients might seem small, these are still substantive effects; active social assistance recipients have an exit probability that is four times as large ($0.56 + 1.67 = 2.23$ compared to 0.56) as among inactive recipients.

Table 5. Discrete time linear probability models explaining exit from social assistance ($N=236,532$ individuals in 11,452,106 person-months).

| | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | |
|---|------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|
| | B | SE | B | SE | B | SE | B | SE | B | SE |
| Time | -0.0002*** | 0.0000 | -0.0002*** | 0.0000 | -0.0002*** | 0.0000 | -0.0002*** | 0.0000 | -0.0002*** | 0.0000 |
| Time squared | 0.0000*** | 0.0000 | 0.0000*** | 0.0000 | 0.0000*** | 0.0000 | 0.0000*** | 0.0000 | 0.0000*** | 0.0000 |
| (Low income) work | 0.0167*** | 0.0001 | 0.0163*** | 0.0001 | 0.0154*** | 0.0002 | 0.0318*** | 0.0006 | 0.0306*** | 0.0006 |
| Self-employment | 0.0227*** | 0.0005 | 0.0221*** | 0.0005 | 0.0210*** | 0.0005 | 0.0208*** | 0.0005 | 0.0208*** | 0.0005 |
| Female | | | -0.0017*** | 0.0000 | -0.0014*** | 0.0000 | -0.0011*** | 0.0000 | -0.0011*** | 0.0000 |
| Non-western minority | | | -0.0001*** | 0.0000 | 0.0000 | 0.0000 | 0.0002*** | 0.0000 | 0.0002*** | 0.0000 |
| Western minority | | | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0003*** | 0.0000 | 0.0003*** | 0.0000 |
| Age (-28) | | | -0.0002*** | 0.0000 | -0.0001*** | 0.0000 | -0.0001*** | 0.0000 | -0.0001*** | 0.0000 |
| Educational level (ref = low) | | | | | | | | | | |
| Education missing | | | -0.0002*** | 0.0000 | 0.0000 | 0.0000 | -0.0001** | 0.0000 | -0.0001** | 0.0000 |
| Middle | | | 0.0017*** | 0.0001 | 0.0013*** | 0.0001 | 0.0009*** | 0.0001 | 0.0009*** | 0.0001 |
| High | | | 0.0019*** | 0.0001 | 0.0015*** | 0.0001 | 0.0012*** | 0.0001 | 0.0012*** | 0.0001 |
| Partner | | | 0.0004*** | 0.0001 | 0.0004*** | 0.0001 | 0.0003** | 0.0001 | 0.0003** | 0.0001 |
| Children | | | -0.0005*** | 0.0001 | -0.0005*** | 0.0001 | -0.0006*** | 0.0001 | -0.0006*** | 0.0001 |
| Partner * female | | | -0.0003* | 0.0001 | -0.0003* | 0.0001 | -0.0003* | 0.0001 | -0.0003* | 0.0001 |
| Children * female | | | 0.0000 | 0.0001 | 0.0002 | 0.0001 | 0.0003** | 0.0001 | 0.0003* | 0.0001 |
| Work experience | | | | | 0.0002*** | 0.0000 | 0.0004*** | 0.0000 | 0.0004*** | 0.0000 |
| Social assistance duration | | | | | -0.0003*** | 0.0000 | -0.0002*** | 0.0000 | -0.0002*** | 0.0000 |
| Interactions with low income work 4 | | | | | | | | | | |
| Female | | | | | | | -0.0047*** | 0.0004 | -0.0044*** | 0.000 |
| Non-western minority | | | | | | | -0.0021*** | 0.0003 | -0.0019*** | 0.000 |
| Western minority | | | | | | | -0.0014** | 0.0005 | -0.0015** | 0.001 |
| Age (-28) | | | | | | | -0.0004*** | 0.0000 | -0.0004*** | 0.000 |
| Educational level (ref = low) | | | | | | | | | | |
| Education missing | | | | | | | -0.0006 | 0.0003 | -0.0010** | 0.0003 |
| Middle | | | | | | | 0.0030*** | 0.0004 | 0.0028*** | 0.0004 |
| High | | | | | | | 0.0025** | 0.0008 | 0.0020* | 0.0008 |
| Work experience | | | | | | | -0.0005*** | 0.0000 | -0.0006*** | 0.0000 |
| Social assistance duration | | | | | | | -0.0011*** | 0.0000 | -0.0010*** | 0.0000 |
| Job characteristics in active person-months | | | | | | | | | | |
| Job type (ref = regular employment contract) | | | | | | | | | | |
| Intern | | | | | | | | | -0.0107*** | 0.0011 |
| Sheltered employment | | | | | | | | | -0.0051*** | 0.0004 |
| Temporary agency worker | | | | | | | | | 0.0135*** | 0.0007 |
| On call worker | | | | | | | | | -0.0049*** | 0.0004 |
| Job type unknown | | | | | | | | | 0.0158** | 0.0057 |
| Constant | 0.0056*** | 0.0001 | 0.0095*** | 0.0001 | 0.0091*** | 0.0001 | 0.0080*** | 0.0003 | 0.0083*** | 0.0003 |

* $P < 0.05$;** $P < 0.01$;*** $P < 0.001$

In model 2, we include personal characteristics. Women have a lower probability to exit from social assistance than men. Non-western minorities are less likely

to exit from social assistance than natives and western minorities. Older people are also less likely to experience the event. Compared to the reference category of low

educated people, middle and high educated people have higher probabilities to exit social assistance towards self-sufficiency. Both men and women are less likely to experience the event if they have children living at home. Men are more likely to exit from social assistance if they have a partner, while this effect is less strong for women. Including these control variables only slightly reduces the effect of low income work. Social assistance recipients with a job still have a 1.63 per cent point higher probability to exit from social assistance in a month than their inactive counterparts.

Model 3 includes previous work experience and social assistance duration as indicators of an individual's labour market history. Individuals with more work experience are more likely to sustainably exit from social assistance towards self-sufficiency, while long-term social assistance recipients are less likely to experience this event. When labour market history is taken into account, social assistance recipients with a low income job still have a 1.54 per cent point higher probability to experience the event than their inactive counterparts. This is in line with hypothesis 1a that low income work will increase the probability of exit from social assistance to self-sufficiency.

In model 4, we include interaction effects between personal characteristics and low income work, to test if there are individual differences in the effect of low income work. We find that the effect of low income work decreases when work experience increases. Especially individuals with little work experience increase their probability of becoming self-sufficient by being active in low income work. This is in line with hypothesis 2. With every extra year of work experience, the effect of low income work decreases by 0.05 per cent point. While a native Dutch, 28-year-old, low educated male without any work experience or prior social assistance duration has a 3.18 per cent point higher probability to exit from social assistance in a month if he is active in low income work than when he is inactive, this effect is 2.6 per cent point ($3.18 - 11 * 0.05$) for an otherwise similar person who has been active on the labour market in all months in the past 11 years.

In hypothesis 3a, we expected that lower educated people would benefit more from low income work than higher educated people as they can benefit more from human capital, social capital, and signalling gains. However, we find that low income work especially increases the probability to experience an event for middle and high educated social assistance recipients, which is more in line with hypothesis 3b that low educated people have less opportunities to step up from low income jobs.

Based on human capital, social capital, and signalling theory, we expected stronger effects of low income work on exits to self-sufficiency for people with longer durations of benefit receipt (*hypothesis 4*). However, we find that low income work functions less often as a stepping stone to self-sufficiency for people with longer social assistance receipt. The effect may even be somewhat more negative than shown, because our duration variable does not include the period after 2010.

The weaker stepping stone effect of low income work for low educated people and people with a long duration of social assistance receipt might be due to the fact that these people most likely have a lower earning capacity and a lower hourly wage. Therefore, they will have to work more hours in order to realize the step to self-sufficiency¹⁶. In addition, these people might need to be active in low income work for a longer time period, before they have gained enough skills and up to date work experience to proceed to work with an income above the social minimum. This is in line with the findings of Harris (1993) that higher educated welfare recipients more often directly find work with an income that is sufficient to make them ineligible for welfare, whereas the lower educated more often combine welfare and work for a (longer) period before their income from work is high enough to become self-sufficient. She argues that human capital formation is crucial to exit from welfare dependency: people with less human capital need to gain work experience for a longer period before they can find jobs with an income high enough to render them ineligible.

Model 4 also shows that low income work is less effective as stepping stone to self-sufficiency for non-western and western minorities than for the native reference category. These findings are in line with hypothesis 5b, which expected minorities in low income jobs to have less access to internal labour markets and upward mobility, also because they more often work in enclave labour markets. Consequently hypothesis 5a, that low income work, building connections with employers, is especially effective for ethnic minorities as they generally have less access to social capital in their social networks is not supported.

Although we did not theorize on this, we also find that the effect of low income work on exits from social assistance is smaller for women than for men and smaller for older people than for younger people. For both women and older people, work with an income below the social minimum might sometimes be an end station rather than a stepping stone, for instance if they do not want to further increase their work hours. Kyyrä *et al.* (2010, 2013) also find smaller effects of part-time

work during benefit receipt for women and older people on subsequent exits from benefit receipt. They argue this reflects stronger preferences for leisure among these groups.

We thus find differences between groups of people in the effect of low income work on the probability of exit from social assistance. It is, however, important to note that low income work increases the exit probability for (almost) everybody. Although the stepping stone effect decreases by for instance age, work experience or duration of social assistance receipt, also the oldest people, people with most work experience or longest social assistance receipt have a higher probability to exit from social assistance when they are active in low income work than when they are inactive.

In model 5, we add the type of employment contract for people who are active in low income work to test whether there are differences between low income jobs in their effectiveness as stepping stones. The main effect of low income work should now be interpreted as the effect of low income work for a reference person (a 28-year-old, low educated, native Dutch male with no prior social assistance receipt or work experience) on a regular employment contract. Compared to an inactive (reference) social assistance recipient, a (reference) person with a low income job on a regular employment contract has a 3.06 per cent point higher probability to become self-sufficient. The effect of low income work is smaller, but still positive, for interns, people in sheltered employment and on call workers. Temporary agency work is the most effective stepping stone out of social assistance: this results in a 4.41 per cent point ($3.06 + 1.35$) higher probability to exit from social assistance, compared to a (reference) person who is not active in low income work.

Sensitivity Analyses

To test whether our results are robust and our interpretation of the outcomes is correct, we perform two extra analyses.¹⁷ Firstly, we re-estimate the models on a selection of people who are active in low income work in some months and inactive in other months. There are 43,164 individuals in our dataset (18 per cent of the 236,532 individuals in total) who have low income work in some but not all months. By re-estimating the models on this subgroup, we no longer compare people who are active in low income work to people who may be unable or unwilling to work. We thus estimate the effect of low income work *at a certain moment* on subsequent exit from social assistance, within a group of people who are all at some moment active in low income

work. The results on this subgroup are very similar to the results obtained for the entire population. Low income work still has a strong effect on exits from social assistance. This provides further evidence that the effect is not due to differences in unmeasured characteristics between working and non-working social assistance recipients. Similar to the models on the total population, also in this subgroup, the effect of low income work is found to be stronger for people with less work experience, stronger for middle and higher educated people than for the lower educated, stronger for people with shorter duration of social assistance receipt and stronger for the native majority than for ethnic minority groups. The differential effects of job types are similar as well; especially temporary agency work functions as stepping stone towards self-sufficiency.

Secondly, we stratify the population based on the propensity to perform low income work, in order to test if also *within* a group of people with a similar propensity to find and accept low income work, low income work increases the probability to experience an event (see D'Agostino, 1998 for further information on the use of propensity score stratification). We first estimate the probability that an individual ever works while also receiving social assistance (within our observation period). We find that women, ethnic minorities, younger people, middle and higher educated people, people with more work experience and a shorter duration of social assistance receipt are more likely to find and accept low income work. Subsequently, we stratify the population into five groups based on the predicted probabilities and re-estimate our models on these five groups. The results are again very similar to the results for the entire population. Within all five groups, low income work has a strong effect on exits from social assistance¹⁸.

Conclusions and Discussion

In this article, we analysed whether low income work functions as a stepping stone from social assistance to sustainable self-sufficiency in the Netherlands. Low income work refers to earnings below the social minimum (due to some combination of a low hourly wage and not working full-time), which is combined with the receipt of a supplementary income from social assistance. We find that social assistance recipients who are involved in low income work are more likely to transit from social assistance to sustainable self-sufficiency than their inactive counterparts. This outcome is in line with expectations derived from human capital theory, social capital theory, and signalling theory. Based on these theories, we expected that low income work would lead to an

increase in work experience and access to valuable labour market information, and would function as a signal of reliability and willingness to work. This would allow social assistance recipients to find better jobs: jobs with more (stable) work hours or a higher hourly wage thus becoming completely independent of social assistance. With the present data, we could not provide a definitive answer to the question whether all three mechanisms apply; and if so, which of these is the most important. Since our study strongly supports the existence of a stepping stone effect, investigating these mechanisms in more detail is a logical next step.

We defined sustainable self-sufficiency as remaining independent of social assistance for at least six months and earning a labour market income (rather than moving to another type of benefit or moving in with a gainfully employed partner). This excludes people who temporarily earn an income above the social minimum (in for instance seasonal labour or on call work) but return to social assistance within 6 months. However, we did not study the labour market dynamics of former social assistance recipients after these 6 months. In future research it would be interesting to provide more insight in these dynamics, especially in the relation between low income work and repeated dependency.

Not all social assistance recipients are equally able to work. There will be people who, due to health or other problems, will neither perform low income work nor become self-sufficient. It would have been very interesting to include more extensive controls for personal characteristics, including health problems; but unfortunately, we did not have access to such data.

The literature on working oneself off welfare or out of poverty sometimes argues that low income work is a trap rather than a stepping stone. The idea is that both the human and social capital that people gain when they are active in low income work are not transferable to higher income work (Pissarides, 1992; Voßemer and Schuck, 2016) and that low income work may be a signal of low productivity (McCormick, 1990). In addition, low income work can reduce job search intensity and thereby the probability to find higher income work (Böheim and Weber, 2011; Baert *et al.*, 2013; Voßemer and Schuck, 2016). However, in the Netherlands we find no support for these ideas. Possibly, the effect of low income work on search intensity is less severe in the Netherlands than in other countries, as low income work in the Netherlands is always less than full-time.

Secondly, we studied individual differences in the effect of low income work. We hypothesized that especially people with little human and social capital and little other means to signal their productivity and willingness

to work would benefit from being active in low income work. Our results confirm this only for work experience; we find that low income work especially increases the exit probability from social assistance to self-sufficiency for people with little work experience. For educational level and duration of social assistance receipt, the results are not in line with our expectations: low income work functions less as a stepping stone to self-sufficiency for low educated people and long-term social assistance recipients. This is in line with findings of Grün, Mahringer and Rhein (2011) who find that low income work is especially a stepping stone for the highly skilled. However, it contradicts earlier research (Caliendo, Künn, and Uhendorff, 2016; Lietzmann, Schmelzer, and Wiemers, 2017) that find especially stepping stone effects when people are longer unemployed. These results could be due to the lower earning capacity of these groups, which implies that they have to find jobs with more hours before their income renders them ineligible for social assistance. In addition, as pointed out by Harris (1993), these groups might have to combine welfare and work for a longer period of time in order to first increase their human and social capital, before they are able to find higher income work and make the step towards self-sufficiency.

We expected to find a stronger stepping stone effect for natives than for ethnic minorities, as ethnic minorities in low income jobs will have less access to internal labour markets and upward mobility, also because they more often work in enclave labour markets. Our results confirm this expectation. We, thus find no evidence for the competing hypothesis that ethnic minorities would benefit *more* from (the social capital gains of) low income work, as they will have less access to social capital in their family and friendship networks.

Thirdly, we investigate differences between employment contracts in the implications of low income work. Our results suggest that especially temporary agency work serves as a stepping stone: social assistance recipients on a temporary agency job are more likely to become self-sufficient than those in sheltered employment, internships, on call work or regular employment contracts. We did not expect this, but Grün, Mahringer and Rhein (2011) found, also to their surprise, exactly the same for both Germany and Austria. They studied unemployed men who start a low income job, and found that those who perform temporary agency work have the highest likelihood of mobility towards higher income work, but also the highest risk of becoming unemployed once again. These outcomes might be explained by the fact that employers use low income work, and especially temporary agency work, as a way to screen newly hired

workers. After a short screening period organizations can easily get rid of unsuitable temporary agency workers and may provide workers who perform satisfactorily with an employment contract, which will often be accompanied with a rise in income. Alternatively, workers might be able to obtain a new temporary position with a higher wage or more hours through the work agency. A final possibility is that employment agencies are able to attract or select people who are at a comparatively small distance from the labour market, provide dedicated training, or have more efficient matching procedures with the demands of employers. Because our analyses did not focus on limiting unobserved heterogeneity between different employment channels, we cannot shed light on these mechanisms here. Investigating this would require a different approach, such as a natural experiment.

In conclusion, we find that a period of working but earning less than the social minimum is an effective stepping stone towards sustainable self-sufficiency. Although there are group differences in the strength of the stepping stone mechanism, we find that almost all social assistance recipients have better chances to become sustainably self-sufficient when they are active in low income work than when they are inactive. Our study provides strong evidence for these results. We use a large dataset with reliable information on receiving social assistance and having low income work. Furthermore, we included step by step more controls for heterogeneity and performed extensive sensitivity analyses to test if the results are robust or dependent on methodology. All outcomes consistently point in the same direction.

From a policy perspective it is, therefore, important that social assistance recipients are encouraged and enabled to become active on the labour market, even if they do not immediately earn enough to be self-sufficient. Accepting low income work is not always attractive for social assistance recipients. Social assistance benefits are often reduced one-for-one if people start earning an income on the labour market. In addition, the bureaucratic procedures involved with the combination of social assistance and labour income can be problematic. However, although most municipalities focus on full-time work and direct self-sufficiency, many municipalities also started to make low income work more attractive for social assistance recipients (Dodeweerd *et al.*, 2015). This paper shows that this can be an effective strategy. In particular, cooperation between municipalities and temporary employment agencies seems worthwhile, as we find that especially low

income jobs through this channel serve as effective stepping stones towards sustainable self-sufficiency.

Supplementary Data

Supplementary data are available at *ESR* online.

Notes

- 1 In the Netherlands, there are also many people—especially women—who voluntarily work part-time. However, such jobs are mostly not included in our definition of low income work, because these often concern substantial (24–32 h per week) jobs in middle-range income occupations and/or are taken up by people whose partner also has an income.
- 2 In January 2015, benefit levels were reduced if multiple adults are living together. We do not observe a shock in the exit rate from social assistance in that month, nor in any other month in the 2010–2015 period we analyse. This is understandable, as the large majority of social assistance recipients were not affected by this measure, while for the remaining people it mostly resulted in lower benefits, not in non-eligibility (Kruis and Van Waveren, 2016).
- 3 Social assistance does not depend on the number of children.
- 4 Only people who earn less than the social minimum can get an earnings disregard, and thus an income that is up to 200 euros higher than the social minimum. People who earn exactly the social minimum on the labour market do not receive any income from social assistance. Therefore, earnings disregards do not affect the amount people have to earn on the labour market to become self-sufficient.
- 5 All results are based on calculations by authors using non-public microdata from Statistics Netherlands. For further information: microdata@cbs.nl.
- 6 The under-representation of individuals living together with a partner will not have a strong effect on our results, as we include living with a partner as a control variable. Theoretically, an alternative approach would be to estimate multilevel models. However, in practice this is not possible, due to the fact that over time people move between households which makes the multilevel structure complex and not estimable with our large dataset.
- 7 In precarious work, at the lower end of the labour market, people might have enough working hours to earn the social minimum in certain months (for instance in seasonal labour or on call jobs), but return to social assistance when the job expires. In

this article, we aim to assess whether people are able to sustain work with an income above the social minimum. Therefore, in our definition of the event, we only include people who remain independent of social assistance for at least 6 months. People who work less than 6 months are generally not eligible for Dutch unemployment benefits, and will return to social assistance.

- 8 Besides people who hold a job and people who are inactive on the labour market there is also a small group of social assistance recipients who are active in self-employment. However, in our data information on income from self-employment is only available on an annual basis; therefore we do not know when people are exactly self-employed, nor whether they are self-employed while also receiving social assistance. We include a separate variable in the models whether people (who do not have a job in a month) receive an income from self-employment in that calendar year. (In 1 per cent of person-months, an individual does not have a job in month $t-2$ and receives an income from self-employment in the calendar year of $t - 2$.) Therefore, the effect of low income work can be interpreted as the impact of holding a job compared to being inactive on the labour market. The interpretation of the estimated effect of self-employment is complex, since we do not know whether people are self-employed before or after leaving social assistance.
- 9 People who work and earn less than the social minimum, (who are eligible for social assistance) but who do not take-up social assistance are thus not included in low income work, but (directly) seen as self-sufficient. The prevalence of non-take up will be even smaller in our sample than in the general population, because all people in our sample at some moment received social assistance. However, if there are people who do not take up social assistance, this will be especially people who expect their financial situation to further improve. Therefore, we might underestimate the stepping stone effect of low income work.
- 10 Non-Western minorities are people of whom at least one parent is born in Africa, Latin America, or Asia (except Indonesia and Japan). Western minorities are people of whom at least one parent is born in another country outside the Netherlands.
- 11 Level of education is based on HOOGSTOPLTAB, a microdata source from Statistics Netherlands based on a combination of administrative and survey data. The data are based on registers of who finished higher education (since 1986), secondary education (since 1999), or vocational education (since 2004) in the Netherlands, supplemented with data from the Labour Force Surveys and data from unemployment registrations (in some years). There is, therefore, a large and selective group of people with missing data on their level of education. We follow Zorlu (2010), who argues that the best way to deal with these missing data is to include a separate category of people for whom the educational level is missing. Individuals with educational level unknown are a bit older (45.3 years) than average (as registrations had not started yet when they finished their education) and more often non-western minorities (47 per cent) (as they might have finished education abroad).
- 12 These people have a job within the Wet Sociale Werkvoorziening (WSW, or Sheltered Employment Act). It concerns subsidized jobs for people with very low earning capacity (below the statutory minimum wage), who are enabled to do work that fits their capacities and earn a minimum income.
- 13 Huber-White robust standard errors mitigate the problem of heteroskedastic residuals in linear probability models.
- 14 Regression, and especially interaction coefficients from logit models are not directly interpretable (see Mood, 2010). A solution would be to estimate the average marginal effects. We also estimated a logit model and average marginal effects (see Supplementary materials). However, as the results are qualitatively similar (all effects are similar in direction), we chose to present the more directly interpretable linear probability models.
- 15 These are the theoretical predicted probabilities in the zeroth month. In reality, the model only predicts events from month 1 onwards (there are no events in month zero, as people are selected based on the fact that they (still) receive social assistance in January 2010). The probability in the 1st month is 0.54 per cent ($0.56 - 0.02 + 0.00$) for inactive people and 2.21 per cent ($0.56 + 1.67 - 0.02 + 0.00$) for active people, which is more than four times as large. The multiplicative effects become stronger in later months as the baseline probability decreases over time. We chose to present the predicted probabilities in the zeroth month, as they are most directly readable from the tables, and almost the same as the predicted probabilities in the first month(s).
- 16 We thank the participants of the IAB workshop on Welfare and Unemployment Dynamics (Nuremberg, 9 November 2018) for pointing this out.
- 17 For the estimates, see the [supplementary materials](#).

18 The results of the interaction effects are generally in the same direction as in the previous models. They are, however, a bit less robust, most likely because in some propensity score strata there are only very few (and a very selective group) of certain subgroups (for instance, few highly educated people in the lowest propensity strata).

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