# The effects of social assistance reform: A micro-level analysis of the Dutch “Wet Werk en Bijstand”

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# 1. Introduction

Throughout the history of the post-war Netherlands, the Dutch government has generally had a Christian-democratic tendency. Characteristic of this tendency was the emphasis government put on earnings equality and fiscal discipline. This meant that the Dutch government built their economic strategy around prudent yet solidary policies. A prototypical policy example of these Christian-democratic politics was the general social assistance act, or ABW (*Algemene Bijstandswet*). Conceived in 1967, the main goal of this policy was to maintain a high level of income protection for all Dutch citizens. (Bannink, Bosselaar & Trommel, 2011). This goal was realized at the expense of employment growth. This is in line with the welfare state policy trilemma identified by Iversen and Wren (1998). If a government wants to maintain a relatively high level of purchasing power for all citizens, both the employed and the jobless, without running up a debt deficit, it must levy relatively high taxes for those who do work. This created a smaller incentive to work, effectively impeding employment growth.

Several years later, with the rise of neoliberalism and in the wake of the devastating economic effects of the 1979 oil crisis and the subsequent economic crisis, the Dutch approach changed and became more focused on labour activation, rather than income protection. Dutch social policy had to become more efficient, more internationally competitive, and more economically feasible. This led to the revision of the ABW. After several years of trial and error and via dozens of policy changes, the Dutch government implemented the *Wet Werk en Bijstand* (work and social assistance act, WWB) in 2004. This abandonment of Christian values of solidarity and equality and their replacement by neoliberal ideals, such as efficiency and competitiveness, ushered in a new outlook on welfare benefits. This radical revision of social policy can be viewed in the context of a broader Western trend of efficiency over equality (Bruttel & Sol, 2006). In the relevant academic discourse, the introduction of the WWB has even been regarded to be a crucial step within the Dutch paradigm change away from income protection and towards labour activation (Bannink et al. 2011).

This glimpse into the societal and academic relevance of the introduction of the WWB, is the first step towards the research question to be discussed in this study, where the effects of the WWB have been examined on a household-level. The literature on the topic of the Dutch WWB, however, is limited. Apart from multiple policy reports and several articles using the WWB as an example, there are few studies centred around this policy in particular. I argue that

the available literature and data on the WWB, as well as currently still uncovered mechanisms behind it, are yet to be applied in study on micro-level effects of the WWB. In this research, precisely this type of analysis was carried out by examining the effectiveness of the WWB in the context of a changing rationale behind welfare benefits schemes. The main welfare benefits of analysis have been social assistance, unemployment benefits, and disability benefits. The following, overarching question has been at the core of this study:

*"What is the effect of the introduction of the Wet Werk en Bijstand (WWB) on households' take-up of Dutch welfare benefits schemes?"*

Splitting this overarching research question into multiple sub-questions helps to identify the different types of effects of the WWB more clearly. First, the direct correlation between the introduction of the WWB and social assistance take-up was examined, in order to identify the general effect of the new policy paradigm. The second goal was to find out to what extent the work-first requirements behind the WWB actually led to re-employment. Building on this, it was also examined to what extent the WWB introduction led to spill-over into other benefits schemes, rather than actually activating social assistance recipients to find a job. Finally, the research attempted to uncover the different effects that the WWB has on different types of households.

There are already several reports and comparable analyses on the effects of the WWB on take-up, inflow, outflow and other welfare benefits schemes, the most relevant of which are the article by Kok et al. (2017) as well as the reports by Bannink, Bosselaar, and Trommel (2011) and by Bosselaar et al. (2007). However, none of them have set out to analyse the entire, 10-year period, during which the WWB was active. I argue that this type of research is valuable, precisely because the WWB is associated with a paradigm change. After all, according to historical institutionalism, institutions are often built upon years, decades or more of traditions and modi operandi that do not allow for radical change overnight. Historical institutionalism is one of the leading approaches in the political and institutional debate. In this view, it is argued that institutional change is possible, but requires a sufficient amount of time to allow all elements of an institution to adapt (Pierson, 2000; Pierson & Skocpol, 2002). I argue that it is very plausible that this is indeed true for the case of the WWB. It seems reasonable to expect that municipal employees, both the executives and the lower-level civil servant, need some

time to change their approach and optimize this new way of doing things. For this reason, this study sets out to examine the effect of the WWB over the full course of its existence.

The case of the WWB provides a readily analysable case of Dutch welfare state policy with a clear beginning and ending, as it ran from 2004 until 2015. As mentioned before, the WWB was preceded by a relatively strongly differing social assistance scheme. In 2015, the WWB was combined with the Work and Employment Support for Disabled Young Persons Act (Wet arbeidsongeschiktheid jonggehandicapten, Wajong) and the Sheltered Employment Act (Wet sociale werkvoorziening, Wsw) into the Participation Act (Participatiewet). The rationale behind this merger to create one, overarching law, was to take away competition between these acts and, instead, realize cooperation among benefits schemes with similar structures and goals. This would allow for a more efficient execution of labour activation policies, effectively reducing the costs of employing jobseekers (Divosa, n.d.). This research has investigated the effects of the policy changes and paradigm shift in the form of the introduction of the WWB over the course of the WWB's existence from 2004 until 2015 ("Wet Werk en Bijstand", 2007).

Analytically and academically, the WWB was more than just one of many policies. Rather, it brought about a structural shift in the behaviour and efficiency of municipalities vis-à-vis their unemployment benefits schemes. Before the WWB, municipalities were already in charge of local social assistance distribution. However, with the WWB, the Dutch national government strongly incentivized municipal governments to work more efficiently. This was done by allowing municipalities to keep any left-over funds appropriated to local social assistance, rather than having the money flow back into the national coffers.

Given the aforementioned insights, I argue that an analysis of the now-defunct WWB is by no means outdated or obsolete, since it will provide academic literature with a better understanding of factors that drive citizens from and to social assistance. I argue that insight into these factors is societally relevant, insofar as both policymakers and caseworkers can use it to help citizens exit or even avoid welfare benefits schemes. The trend and probability of social assistance recipiency during the lifespan of the WWB has been used to determine the ultimate effectiveness of a changing governmental culture. Thus, it is academically relevant, insofar as understanding these factors allows for the testing and creation of micro-level, behavioural-oriented, welfare state theories.

In the upcoming sections, the reader will be provided with an overview of available literature on the effects of the WWB, thereby giving insight into the stories and potential explanations behind changing social assistance take-up rates. Following that, several characteristics are identified that are generally expected to have some level of explanatory value when it comes to Dutch social assistance take-up. Next up is an examination of how these factors evolved along with the introduction of the WWB. Given the fact that the WWB has had some significant overall effects on total welfare take-up, an analysis into the more specific factors behind it can be expected to be fruitful.

In order to be able to answer the main research question, four hypotheses have been investigated. The first three hypotheses were analysed by means of binomial logistic regression analyses.

First, it was analysed if the introduction of the WWB was actually associated with a decreasing stock of social assistance take-up. Results showed that there is some evidence for this.

Second, it was investigated where exactly these people flowing out of the WWB end up. To that end, the correlation between the WWB introduction and the employment rate was examined, as well as the take-up of the Dutch unemployment and disability benefits schemes, which have been identified in previous literature to attract spillover from people leaving social assistance. Regarding the hypothesis on the effect of the WWB on the employment rate, some correlation was found between the introduction of the WWB and the likelihood of being employed. However, there were several complications attached to these findings, that ultimately did not allow for any firm conclusions.

The answer to the third hypothesis, which dealt with the effect of the WWB introduction on take-up of unemployment and disability benefits, pointed in two directions. On the one hand, no statistically significant correlation was found between the WWB introduction and a changed likelihood to receive unemployment benefits. On the other hand, it appeared that the WWB was associated with a *decreased* likelihood to receive disability benefits.

Finally, a linear probability model was used to identify which household types were most strongly affected by the introduction of the WWB. For example, what are the effects of someone's education level on their likelihood to receive social assistance? It appeared that, after the introduction of the WWB the strongest decrease in take-up of social assistance was found among women, among people who completed more than the minimally required level of education, and among single-parent households.

# 2. Literature review

## 2.1 Background of the WWB

The Dutch introduction of the WWB was no isolated case, but rather an exemplary instance of neoliberal ideals spreading throughout the Western world. The following paragraphs are focused around the three-step process that preceded the policy change. First, it will be discussed how an international paradigm shift towards neoliberalism, which was perceivable throughout most of the Western world during the 1980's and the 1990's, was imported from the United States, via the United Kingdom and into the Netherlands. Second, it will become clear how this paradigm shift led to a shift in Dutch politics, which changed from being centred around a Christian-democratic ideology towards putting the focus on neoliberal principles. Third, it will be examined how this change of Dutch political nature led to a revision of welfare benefits programmes to become less focused on income protection and more on labour activation.

### *2.1.1 A paradigm shift*

A core feature of the Dutch WWB approach was the "work over income" axiom. This was an adaptation to the more internationally applied, neoliberal "work-first" mentality. The approach was an import product from the United States. When Reagan first became president in 1980, he popularized criticism of an overly generous welfare system and ushered in an era of continuous dismantling of the traditional welfare state. Almost two decades and three presidential terms later, President Clinton codified this bipartisan effort by signing the Welfare State Reform Act of 1996 (Ridzi, 2009).

The first country outside the US to adopt the work-first strategy was the United Kingdom. Bruttel and Sol (2006) indicate that, before long, European welfare policy started to converge around this approach and ever more Western European countries shifted their focus towards a work-first mentality. The main idea behind the work-first approach is to keep unemployed citizens involved in the labour market by requiring them to take on a job as quickly as possible, in order to keep the gap between welfare benefits recipients and the labour market as small as possible. Initially, it does not matter too much if the job is compatible with the specific skill set of the job-seeking citizen in question. Rather, the job should function as a springboard into a new, more fitting job. This requirement of seeking and taking on any job is generally enforced by governments through the threat of withholding (additional) benefits from people who do not accept a job being offered to them (Bruttel & Sol, 2006, p. 80). Given the spreading of

neoliberalism throughout Western Europe, the Netherlands were not alone in their paradigm shift away from income protection and towards labour activation.

### *2.1.2 A political shift*

From the end of the Second World War until somewhere around the 1990's, The Dutch, political climate provides us with a near-prototypical case that illustrates the argument of the policy trilemma of the service economy by Iversen and Wren (1998). The authors argue that in deindustrialized states, whose economies are centred around the service sector, governments have three main objectives: fiscal discipline, earnings equality, and employment growth. What makes this a trilemma, is the idea that a government can nearly impossibly realize all three simultaneously and, thus, must make a trade-off. A government can only choose to realize two, at the expense of the third. Building on this notion of the welfare policy trilemma, Iversen and Wren identify three prototypical government types: the neoliberal, social-democratic, and the Christian-democratic government type. According to the authors, a prototypical Christian-democratic cabinet will choose to optimize earnings equality, while maintaining fiscal discipline, at the cost of employment growth.

Applying this theory to the Dutch case, we find that the policy was effective at maintaining a minimum standard of living, thereby providing a higher level of purchasing power for all unemployed citizens and ensuring relative equality of earnings across society. Meanwhile, despite these large expenditures, government was fiscally disciplined in the sense that it demanded high taxes to finance their social policies, rather than running up a high national debt. This, however, ensured the difference between the reward from working and the income from social policies was relatively small. This would disincentivize people to work, ultimately leading to low employment growth and, during the 1980's oil crisis, to strongly rising unemployment rates.

However, from the mid-1990's onwards and in line with the Western paradigm shift towards neoliberalism, a new adage was introduced into Dutch politics: "work over income" (Bosselaar, Bannink, Van Deursen, & Trommel, 2007). This trend became even more clear around 2010, with the establishment of Rutte I, the first of a long line of cabinets headed by right-wing, liberal party VVD, as the (neo-)liberal inclination became the loudest voice among and the driving force behind Dutch politics (Rijksoverheid, n.d.-a).

*2.1.3 A policy shift*

In the mid-1990's, the new, liberal government perceived an increasing trend of illegitimate claims for social benefits. After all, entering generous and easily accessible welfare schemes can be an attractive alternative to working. If people can earn more from welfare state benefits than from labour, they will have no incentive to work and, thus, opt to flow out of the labour market and into the welfare benefits scheme. The risk of disincentivizing labour does not stop there, however. If the difference between income from work and income from unemployment benefits schemes is small enough, people will be willing to trade a small part of their income for a greatly reduced amount in time and effort spent on labour. It follows logically that, as welfare benefits schemes become more generous, a larger number of people will be inclined to quit their jobs in order to have more free time for a comparable level of income.

Following this line of reasoning, Dutch government realized the need for creating less attractive welfare schemes. This change of approach would keep able workers in the labour market, rather than pulling them into the comparably generous social benefits schemes. Bannink, Bosselaar, and Trommel (2011) argue that this insight was the first step towards what they, ultimately, perceive to be a paradigm shift in Western and Dutch politics. In line with the trilemma theory of Iversen and Wren (1998), the Dutch neoliberal service economy, in its early years, focused on strong fiscal discipline and high employment growth at the expense of earnings equality across society. In 1996, along with the introduction of the "work over income" discourse, the ABW was replaced by the new general social assistance act, nAbw, the *nieuwe Algemene bijstandswet* (Bosselaar, Bannink, Van Deursen, & Trommel, 2007).

However, the fact that this change of approach had set in, did not mean that the novel methods were immediately effective. The nAbw, throughout its eight years of existence, was continuously prone to adjustments and, as a result, to incessant uncertainty, jeopardizing the effective functioning of the policy. Ultimately, the lack of policy stability proved unsustainable and the learnings of this enduring process of policy adaptation were accumulated into the creation of a new policy: *Wet Werk en Bijstand* (WWB). The introduction of this policy has been regarded in the relevant academic discourse to be a crucial step within the newly developing neoliberal paradigm of labour activation being preferred above income protection (Bannink et al. 2011). Over the course of the years, multiple interest groups and political parties have become vocal about the ethical issues surrounding the approach, arguing that the work-first mentality borders on forced labour. These allegations have been declared to be unfounded

in multiple judicial trials, yet the fact that assertions like these are being made, can be reason for wariness surrounding the implementation of the policy. I will not go into the ethical-judicial debate surrounding this topic, here, yet I mention it in order to explain why different Western countries have adopted different forms of the work-first approach, rather than directly copying the U.S. method.

## 2.2 The WWB

Kok et al. (2017) have found, in their study on the effect of the WWB introduction on municipalities, that the policy led to a decline of 14% in welfare caseload between 2004 and 2008. Stegeman and Van Vuren (2006) also found that, in 2004 alone, the increase in the total amount of social assistance recipients went down with around 8.000 people, or 2%. Kok, Groot, and Güler (2007) found that the number of social assistance recipients had dropped by 4% between 2004 and 2006. Social assistance expenditures in 2006 were more than 100 million euro's lower than in 2004. In order to better understand these data on declining social assistance figures, the factors that affected them should be identified. In the following section, the effects that the switch from matching grants to block grants had on social assistance in the Netherlands are discussed. The same is done for the rise of the work-first approach, and spillover effects.

### *2.2.1 Block grants*

As stated before, the United States were the first country to instigate policies aimed at decreasing the number of welfare recipients by reforming social assistance schemes to be more focused on re-employment. The main aim of 1996 Welfare Reform Act was to move families from welfare to work. The federal US government appointed the individual states to be in charge of distributing the money they received from a block grant: the states were given a sack of money to be spent on pushing families back into the labour market (Talkpoverty.org, 2016). As was characteristic of the era of neoliberalism, the UK soon followed the American example. Having crossed the Atlantic, there was little standing in the way of this policy spreading to the rest of the Western European countries. Bruttel and Sol (2006) identify the rise of this Anglo-Saxon variant and take the Dutch case as one of their examples.

Understanding the importance of these block grants is essential to understanding the WWB. Under the WWB, municipalities received block grants, rather than matching grants to fund their respective social assistance caseloads. Before the introduction of the WWB,

municipalities received a matching grant. This meant that they would be reimbursed by the national government for the amount of money they spent on social assistance in the *previous* year. The block grant awarded to municipalities was also dependent on municipal spending on social assistance, but the important difference was that block grants provided municipalities with a fixed amount of money for the *upcoming* year. The money from this block grant was to be used to pay social assistance benefits. If a municipality would require more money to fund their social assistance, they were free to do so, but they would have to pay for it themselves. On the other hand, they were allowed to keep any surplus resulting from lower total spending on social assistance. This policy thus provided municipalities with an incentive to decrease their stocks of social assistance recipients, by increasing outflow from and decreasing inflow into social assistance. (Gruber, 2005; Kok et al., 2017).

It must be noted that the use block grant was not entirely new to the design of Dutch national social assistance funding before the introduction of the WWB. Before 2001, municipalities received 90% of their social assistance funding in the form of matching grants, while 10% was funded through block grants. From 2001 until 2003, the proportion of block grants as a total of all social assistance funding was increased to 25%, while 75% of funding was still paid in the form of a matching grant. Comparatively, these shares of block grants of total social assistance funding were relatively low in the years before the WWB introduction. For this reason, the 2004 jump towards a 100% funding of social assistance payments through block grants can very well be perceived as a relative policy shock (Kok et al., 2017).

Edzes (2010) examined the effect of the introduction of the WWB on municipalities' policy efficiency. He found that the already efficient municipalities had become even more efficient and that the WWB had led to a convergence of municipalities' policies and practices. Furthermore, one striking finding of the Ministry of Social Affairs and Employment (2008) was that most individuals either remain in the social assistance scheme for less than one year (18% of total recipients), or for more than five years (48% of total recipients). Moreover, it appeared that the largest groups of recipients of social assistance were singles (59% of total recipients) and native Dutch citizens (49% of total recipients). These demographic groups can be said to be the groups with the highest welfare-dependency (Kok et al., 2017).

Bosselaar et al. (2007), too, found that the WWB was effective in reducing the welfare caseload of municipalities. They advocated to focus on "quick gains" by focussing on the most

promising recipients of social assistance in the short run. This would set into motion a change of culture, leading to a situation where municipalities would increasingly focus on (fast) re-integration, efficiency, and abuse avoidance. Having, to a large extent, realized this cultural and institutional change, municipalities would be better equipped to help long-time recipients to exit social assistance.

### *2.2.2 Work-first*

Now, let us turn to the Dutch interpretation of the work-first approach. As stated previously, Bruttel and Sol (2006) identify the WWB to be, essentially, an instigator of the Dutch shift towards work-first programmes, by incentivizing municipalities to use their resources as efficiently as possible. As a part of the broader Dutch tendency towards increased efficiency regarding labour activation, the Dutch Employee Insurance Agency (UWV) regularly hires private "reintegration providers". These private partners are paid on a no cure, less pay basis. Moreover, these partners receive a "speed bonus", depending on how fast a jobseeker finds a contract for at least six months. Other than that, the private providers are free in their approach. This also means that they have to pay for any job trainings themselves. Although these factors all point towards optimal efficiency, Bruttel and Sol argue that they may well be detrimental to the quality of fit between job and jobseeker. Seeking to optimize profit, these private partners will provide as little job training as possible and will push jobseekers to quickly accept any available job, even if that job is not compatible with the jobseeker's particular skills and preferences.

Regarding the WWB, specifically, municipalities sometimes also hire private partners to help them efficiently reduce their caseload. And even if they do not hire private partners, municipalities are still incentivized to push as many jobseekers as possible into re-employment as quickly as possible. Regarding Dutch unemployment benefits, municipalities are bound by the requirement that, during the first six months, jobseekers do not have to accept jobs that are below their level of education. After that, the jobseekers should be open to jobs with lower education requirements and after eighteen months, any job must be accepted by the jobseeker. For social assistance, however, minimum requirements are far less stringent. Since the introduction of the WWB, the minimum definition of a suitable job that should be accepted by the jobseeker, is "*generally accepted*" as being a job (Bruttel & Sol, 2006, p.81). Within the WWB narrative, job history and qualifications are irrelevant when determining job suitability.

Overall, Bruttel and Sol conclude that the Dutch work-first approach risks cream-skimming and poor labour compatibility. Cream-skimming is efficient in the sense that it reduces the social assistance caseload, but it ultimately does very little for the weakest households who have been stuck in social assistance for several years. Poor labour compatibility is also the result of an efficient, yet ineffective approach. If people are forced to accept a wide array of jobs, they will quickly leave social assistance. However, these low minimum requirements for job suitability yield more problems than they solve. After all, a poor fit between job and jobseeker may result in the employee being fired relatively quickly and, thus, being pushed back into welfare benefits schemes. In a 2004 report, the EU Joint Employment Report already prognosed that that this approach would, on the one hand, be effective at working towards full employment and strengthened social cohesion, but, on the other hand, would run at the expense of labour quality and productivity (European Commission, 2004).

Given the abovementioned insights, it is remarkable that Kok et al. (2017) specifically conclude that there is little evidence that cream-skimming occurred under the WWB. They found that, after 2004, social assistance take-up declined among both easy- and difficult-to-place recipients. The authors argue that there is no incentive for municipalities to apply cream-skimming to their job-seeking assistance for social assistance recipients. The reason for this is, according to the authors, that municipalities receive higher rewards for pushing difficult-to-place recipients out of social assistance. Block grant payments are not the same for all social assistance recipients. Rather, difficult-to-place recipients are expected to cost more money over time than easy-to-place recipients. Therefore, if these people flow out of social assistance, the reward for municipalities is relatively higher.

As stated before, the municipalities were free to use their block grant in any way they saw fit. Not all municipalities opted to hire a private partner to help people find a job. Bannink, Bosselaar, and Trommel (2011) further demonstrate how the work-first approach was applied in Dutch municipalities where municipal caseworkers, rather than private companies, assisted jobseekers in social assistance. Municipal caseworkers could use their discretionary power to decide that it would be more effective to enlist the welfare recipient in a job training programme or other labour re-activation tracks. The authors identify the effects of this application of the WWB approach to be twofold. On the one hand, an intensive job search assistance programme, which includes job training, increases the outflow from WWB among both long-term and short-

term recipients. On the other hand, the relatively stringent requirements of the job search programme deter people to enter the programme in the first place. The WWB-monitor 2006 finds that 17% of all applicants of a WWB benefit withdraw their application after being confronted with the work-first requirements (Edzes, Moes, & Westerhof, 2006).

There appears to be some contradiction regarding the risk of cream-skimming between the prediction by Bruttel and Sol (2006) and the European Commission (2004) on the one hand, and the findings by Kok et al. (2017) and Bannink, Bosselaar, and Trommel (2011) on the other. Given this, it may be worthwhile in this research to pay some additional attention to potential signs of cream-skimming.

*2.2.3 WWB effects: Increasing employment or spillover into other benefits?*

However, a reduced caseload of WWB recipients does not necessarily mean that the policy has been effective at helping unemployed people get a job. It may also simply mean that the WWB approach pushes people out of social assistance and into other welfare benefits programmes. Part of this research is focused on the change in leakage *out of* the WWB into other welfare programmes.

I acknowledge that spillover also exists the other way around, i.e. spillover from other welfare benefits *into* the WWB. However, it can also be expected that spillover from other welfare benefits schemes into the WWB does not change due to the introduction of the WWB. After all, social assistance is a final safety net in terms of welfare aid and is generally not entered voluntarily, seeing as most other welfare benefits are more generous or more easily accessible. With the WWB, Dutch social assistance became, if anything, less generous and less readily accessible, thus making it even more unlikely that people would actively opt to enter WWB, a demographic that was already small to begin with. Simultaneously, the change of policy did not do anything to change the number of people who were forced to enter social assistance. Ultimately, I argue that the degree to which people spillover from different welfare benefits schemes into the WWB should not change drastically as a result of the policy change. Therefore, this research was focused solely on spillover *from* the WWB into other welfare benefits schemes.

In order to evaluate the actual effectiveness of the WWB, it is important to determine whether the decreasing stock of social assistance recipients is attributable to more recipients finding new employment, or to spillover into other benefits schemes. Spillover between different welfare benefits schemes is no rare event. Staubli and Zweimüller (2013), for example, found that an increase in the Austrian early retirement age did not simply lead to an increase in labour supply from older workers. They found that only those older workers in stable, high-paying jobs would delay their retirement, while more vulnerable workers in low-paying, often physical jobs would still stop working, either voluntarily or involuntarily. This group of vulnerable workers, no longer eligible for early retirement benefits, would often retire through a different route in the form of unemployment or disability insurance. So, while the increase of the early retirement age led to a significant decline in government expenditures on that particular welfare programme, this effect was to some degree offset by the increased costs of other welfare schemes.

Bosselaar et al. (2007) identified spillover effects for the WWB, specifically, as well. Although the spillover from WWB into other social benefits schemes helped to reduce the caseload and costs for municipalities, it did not solve the underlying problem of unemployment. Rather, the issue was transferred from municipalities to the Dutch Employee Insurance Agency (UWV). The report found that WWB recipients would often leak into one of two other welfare state programmes, especially: the Werkloosheidswet (WW) and the Work and Employment Support for Disabled Young Persons Act (Wajong).
The WW and Wajong differ from the WWB in the sense that the former are contributory benefits, while the latter belongs to the category of non-contributory benefits. This means that a minimum level of participation in Dutch society is required before a citizen is eligible to either WW or Wajong.

Wajong is, in principle, available to everyone who (partly) loses their ability to work due to illness or handicap before the age of 30 but requires the recipient to live in The Netherlands (Rijksoverheid, n.d.-b). It is remarkable that the report finds that the Wajong attracts former social assistance recipients especially yet does not mention any other disability benefits. I argue that, if disability benefits for younger people attract former WWB recipients, then the same can, reasonably, be expected from disability benefits in general. It is not so much Wajong specifically that attracts former WWB recipients, but, rather, disability benefits in general. Kok et al. (2017), as well as Bannink, Bosselaar and Trommel (2011) follow the same line of

reasoning, in the sense that they, too, group together unemployment insurance benefits on the one hand and disability benefits on the other. Dräbing, Van Koperen, and Molenaar-Cox (2017), in their report on behalf of the Central Bureau for Statistics (CBS), also combine multiple disability benefits and even specify which disability benefits acts they have grouped together. These are the disability insurance act (WAO/WIA), the general disability benefits act (AAW/WAZ) and Wajong. This grouping together of disability benefits not only allows for a larger sample of disability benefits recipients, but it is also more intuitive and more generally accepted in the literature than only focusing on the Wajong. Therefore, these same benefits have been combined in this analysis to examine spillover into disability benefits.

To be eligible for WW, a citizen must be able to prove that they have, involuntarily and through no fault of their own, lost 5 or more labour hours per week and that they have worked at least 26 out of the past 36 weeks before losing their job (Rijksoverheid, n.d.-c). Moreover, both benefits are financed through labour tax received from the working population. The WWB, on the other hand, is financed by the working population, but in a less direct manner. The WWB is not financed by income from labour tax, but, rather, from income of all types of taxpayer money that flows into the national coffers (Rijksoverheid, n.d.-d). This small difference is of little analytical effect. However, it is worthwhile to understand that Dutch social assistance is guaranteed by the state, instead of being partly dependent upon the working population for its funding.

Bosselaar et al. (2007) show that an important share of social assistance recipients flows out of WWB, only to spillover into other welfare benefit schemes. This raises the question whether the WWB has been effective at actually helping unemployed citizens flow back into the labour market, or if it has just successfully realized a deflation of local, municipal welfare benefits caseload, at the expense of the more centralized, less customizable approach of the national UWV. Does a more demanding social assistance scheme push unemployed people back into employment, or does it only lead to spillover into different welfare benefits schemes?

### 2.3 Individual and household characteristics

In this section, several factors will be discussed that have, in previous studies, been found to affect an individual's likelihood to receive social assistance.

First, according to Bosselaar et al. (2007), age is a valuable explanatory factor, as the WWB has had different effects on different age groups. The lower one's age, the larger the reduction in social assistance take-up. Moreover, the authors perceive different trends for inflow and outflow. Inflow into social assistance strongly declined among the young recipients, while it remained around the same for older recipients, and for the outflow it was the other way around: a strong increase is noticeable among the recipients of higher age, while the outflow among younger recipients changes very little. The cut-off age, dividing older and younger recipients in this report, is 45.

Second, gender appears to have some significant influence on social assistance take-up. From that same report by Bosselaar et al., it follows that men and women all experience less inflow and more outflow, but also that the greatest decline of overall benefit recipiency can be perceived among men. However, it also appears that it is not without complications to directly compare social assistance take-up between men and women, since, for households where a man and a woman are living together, the man most often applies for the social assistance, leaving only his data at the administrative front desk. Bosselaar et al. (2007) have found a solution for that: they examine the trends of single men and women separately, since these groups are more readily comparable.

A third key factor often used to categorize demographic groups is the level of education. Bannink, Bosselaar, and Trommel (2011) found education to be an influential factor regarding one's odds of receiving social assistance. More specifically, they found that areas with a relatively high prevalence of people with a low level of education were often also the areas with the highest incidence of social assistance recipiency.

Intuitively, this finding seems plausible. An individual's level of education is generally associated with a higher level of income from labour. Assuming this to be true, we can conclude that the difference between income from labour and income from social assistance grows larger, the higher an individual's level of education. This growing difference, in turn, implies that people with a higher level of education have more incentive to not enter social assistance at all and, if they have, leave it as soon as possible. This line of reasoning makes it plausible that there is some difference in social assistance in- and outflow among individuals with different levels of education. It remains to be seen how these differences developed as the social assistance policy changed. It is expected that people who have received higher education will

be able to leave social assistance more easily than people who have received lower education. Intuitively, this seems plausible because people with a higher education generally have a broader range of jobs to choose from, compared to lower educated people, who are often skilled at a specific type of labour. If it is true that it is easier for higher educated people to leave social assistance, then the introduction of the WWB can be expected to have had a larger effect on this group of people, seeing as social assistance became even less attractive to higher educated people, thus motivating them to find a job.

Moreover, Kok et al. (2017) found that the effect of the WWB was different for single-person and single-parent households, compared to other types of households. These two factors have also been included in the analysis. Given the findings by Kok et al. and by Bosselaar et al., it seems especially logical to focus on single-parent and single-person households. The reason for this is that both reports conclude that both single-person and single-parent households follow a relatively strong, downwards trend in terms of social assistance take-up, subsequent to the WWB introduction. At the same time, Kok et al (2017) indicate that single mothers clearly benefit the most from the policy change. The rationale behind this, provided by Kok et al. (2017) is the idea that municipalities spread their efforts relatively evenly among all social assistance recipients. They also found that single-person and single-parent households are among the most welfare-dependent groups, which means that a relatively large share of these demographics is dependent upon social assistance. Then, if municipalities do not apply cream-skimming, but rather spread their efforts evenly, it follows logically that these most welfare-dependent groups are relatively strongly affected by the WWB.

# 3. Theoretical framework

This shift towards a work-first approach was the result of a process of Western, positive reinforcement of neoliberal ideals that would ultimately be perceived to be symptomatic of a paradigm shift (Bannink, Bosselaar, & Trommel, 2011; Bruttel & Sol, 2006). The WWB was the Dutch way of implementing this work-first approach. The WWB incentivized municipalities to make their social assistance programmes more economically efficient and competitive by promoting "work over income" (Bosselaar, Bannink, Van Deursen, & Trommel, 2007). The Dutch national government did this by replacing their payment of matching grants with block grants, meaning that municipalities received an *ex ante*, fixed budget to be used for running the social assistance programme, rather than being compensated *ex post* for any and all expenses made (Gruber, 2005; Kok et al., 2017).

Multiple reports have indicated a downward trend, when it comes to social assistance take-up after the introduction of the WWB (Bosselaar et al., 2007; Kok et al, 2017; Kok, Groot, & Güler, 2007; Stegeman & Van Vuren, 2006). However, none of these reports provide insight into the full lifespan of the WWB. Therefore, the effect of the introduction of the WWB on the likelihood that someone receives social assistance was investigated once more.

**Hypothesis 1:** The introduction of the WWB is associated with a decreased likelihood of receiving social assistance.

After identifying the correlation between the WWB and the trend of total take-up rates, it may be insightful to examine the factors that affect these take-up rates. As stated above, the main idea behind the WWB was to initiate labour activation and push people out of social assistance into the job market. Now, to what extent did the policy realize that goal? Did the less accessible, proactivity-stimulating policy actually improve social assistance recipients' odds to (re-)enter the job market, or were people more often pushed out of municipal responsibility and into the nationally funded welfare benefit programmes? This is a fine example of a principal-agent problem. The national government's intended goal was to push recipients of social assistance into the labour market. The goal of municipalities only partly aligned with that of national government. After all, municipalities would already save or even earn money, as long as they succeeded in pushing people out of the WWB, regardless of whether these people would find a job of find another welfare benefits scheme.

Staubli and Zweimüller (2013) show in their article that spillover into other welfare benefits schemes is not uncommon, and Bosselaar et al. (2007) confirm that the WWB is no exception. They identify the Unemployment Act (WW) and the Work and Employment Support for Disabled Young Persons Act (Wajong) to be the programmes that former WWB recipients flow into most frequently.

This research aims to investigate where households leaving WWB end up. As stated before, this research will not focus on Wajong by itself, but, rather, on disability benefits as a whole. After all, if disability benefits for younger people attract former WWB recipients, then the same can, reasonably, be expected from disability benefits in general. Given the available literature, one can expect that decreasing social assistance take-up rates can be broadly explained in two ways: into employment or into the either unemployment or disability benefits. In order to gain a better understanding of this, one of the goals of this research is providing an answer to the following two hypotheses.

**Hypothesis 2:** The introduction of the WWB is associated with an increased likelihood to be employed.

**Hypothesis 3:** The introduction of the WWB is associated with an increased likelihood to receive unemployment benefits or disability benefits.

Finally, since the main focus of this research is the effect of the WWB on the social assistance take-up of Dutch households, the fourth hypothesis will be centred around the different effects among different types of households. As the literature on this is very limited, this research has been focused on a set of basic household traits: gender, age, level of education, being a single-person household, and being a single-parent household. Gender, age and level of education are relevant factors in most, if not all, micro-level analyses. Moreover, Bosselaar et al. (2007) have found evidence for some differing effects between men and women, as well as between different age groups and groups with different levels of education. The rationale behind the focus on single-person households is the fact that there has been evidence that single-person households are differently affected by the policy than households where the costs of living can be split among multiple people (Bosselaar et al., 2007; Kok et al., 2017). Single-person households can be expected to be, on average, more inclined to leave social assistance and find a job. The same appears to be true for single-parent households. Both Bosselaar et al. (2007)

and Kok et al. (2017) have found that single mothers are most strongly affected by the introduction of WWB. Bosselaar et al. have found that the introduction of the WWB, with its labour-activating inclination, has been relatively helpful for single-parent households, relative to single-person households. Kok et al. have even found that single-parent households, and single-mother households specifically showed the strongest decrease of social assistance take-up, compared to other households.

**Hypothesis 4:** The introduction of the WWB is associated with the strongest decrease of social assistance take-up among men, younger, higher educated people, single-person households, and single-parent households.

# 4. Methodology

## 4.1 Methodological approach

The introduction of the WWB has been the starting point for this study's analysis of an active change of policy regarding unemployment benefits in a broader sense. This analysis focused on social assistance take-up and factors that might affect it. I concede that, as stated before, the WWB was only one part in a gradual ideological shift towards labour activation. However, I do argue that the introduction of the WWB was the first event where this ideological shift was actively translated into actual and stable policy. Although the change of ideology has been a gradual process, the introduction of the WWB was a relative policy shock. Therefore, it can reasonably be expected that investigating the events around the introduction of the WWB, as well as throughout its 10-year existence, can provide us with some insight into the effects of this "paradigm change".

In the previous sections, the individual factors that are most likely to affect a household's likelihood to enter or leave social assistance have been determined. Subsequent to the identification of these factors, an analysis follows on their effects and how they changed as the WWB was introduced. It has been examined how they developed over the course of the WWB's existence from 2004 until 2014. Thus, it was checked if the previously identified factors lose, gain, or maintain explanatory value as a result of the introduction of the WWB, and quantify these changes in explanatory value.

In this research on the effects of the WWB, two additional, Dutch welfare benefits schemes will be taken into account: the unemployment benefits scheme (Werkloosheidswet, WW) and the disability benefits scheme, which includes multiple disability benefits acts. As mentioned before, these two benefits schemes are the "usual suspects" when it comes to leakage out of the WWB and are therefore essential to be examined in light of the effects of the WWB introduction. Moreover, the unemployment and disability benefits schemes are contributory, as opposed to the non-contributory WWB. Therefore, incorporating these two welfare benefits schemes into the analysis, yields a more comprehensive image of the WWB's effects on Dutch welfare benefits in general.

At the same time, it must be acknowledged that this may be an impediment to the analysis. The fact that the three social benefits schemes belong to two different categories, means they are less readily comparable. Nevertheless, I argue that this is a viable approach, since the WWB is

the only non-contributory benefit of its kind. All other non-contributory benefits are aimed at payment assistance regarding different and more specific expenses. Income from social assistance, however, can generally be spent freely. This means that the income received from social assistance is most similar to income from unemployment and disability benefits. After all, the income received through social assistance can be spent on a broad range of expenditures and, therefore, strongly differs from types of social assistance targeted to pay for more specific goods or services, such as child or housing benefits.

The effects associated with the WWB introduction on individual-level traits will also be examined. The choice for these characteristics has been based on previously discussed literature. They are gender, age, level of education, living in a single-person household, and living in a single-parent household. Only factors that are objectively measurable have been included in this analysis. This means that 'health' has not been included in this analysis, since the dataset mostly asks for self-reported health evaluations, rather than identifying more objective data on the subject. Single-person households and single-parent households are similar, in the sense that children are not included as respondents to the dataset. Children count towards the total number of household members, and the number of children is indicated in one of the variables, but that is as far as the influence of children on this particular dataset goes. Nevertheless, in terms of logical analysis and interpretation of results, it has been proven valuable to distinguish between these two groups. After all, two studies on these two factors both report the WWB to have opposite effects on single-person households vis-à-vis single-parent households (Bosselaar et al., 2007; Kok et al., 2017).

All analyses done in this research have been done in Stata. The dataset used in this research consists of 42 separate datasets. One for each year from 2004 until 2014 for two parts of the DNB Household Survey, being the datasets on household information and on income. These datasets have been merged and appended them into one large dataset. Duplicates have been checked for and removed.

### 4.2 Hypothesis testing

Before turning to answer the main research question as a whole, answers are provided to the hypotheses mentioned in the previous section.

*4.2.1 Hypothesis 1*

**Hypothesis 1:** The introduction of the WWB is associated with a decreased likelihood of receiving social assistance.

In order to test the first hypothesis, two binomial logistic regressions have been executed. The explanatory variable of the first regression was a dummy variable, indicating whether the analysis dealt with the period before or after the introduction of the WWB in 2004. The model is presented in equation (1) I must concede that there is a caveat regarding this method of regression discontinuity. After all, a regression discontinuity assumes the two groups under comparison to be, ideally, identical. In this analysis, however, the groups before and after the WWB introduction are not identical. After all, an ex-post analysis of this real-world, welfare policy makes it impossible to compare two identical groups. After all, people's living and working conditions change continuously.

Because of this shortcoming of the first model, a second binomial logistic regression was run. The second used a multitude of year dummies. This regression ran from the year 1994 until 2014, where the reference year was 1994. This model is presented in equation (2). This yielded better insight into the likelihood that someone in the dataset would receive social assistance in any given year, compared to the baseline in 1994. Using year dummies, this likelihood has been provided for each individual year. This, in turn, allows for the uncovering of the trend of the likelihood to receive social assistance in the face of the WWB introduction. The regression equation is as follows:

(1) $\text{logit}(Y_{it}) = \alpha + \beta X_t + \gamma_{it} + \varepsilon_{it}$

(2) $\text{logit}(Y_{it}) = \alpha + \beta' X_t + \gamma_{it} + \varepsilon_{it}$

Here, $Y_{it}$ is the predicted value of the dependent variable, which indicates whether or not someone receives social assistance in a particular year. $\alpha$ is the constant, the value of $Y_{it}$ when $X_t = 0$. For equation (1) this is the case during the period before the WWB and in equation (2) this is the case in the year 1994. $\beta$ is the regression coefficient of $X_t$. In equation (1), the $X_t$ is a dummy variable, indicating whether the outcome deals with the period before or after the introduction of the WWB. In equation (2), $X_t$ is a vector of year dummy variables, where 1994 is the reference year and which runs until 2014. The regression coefficient provides the change in log odds of receiving social assistance in a particular year, compared to reference year 1994.

Therefore, the value of $\beta$ tells us very little on its own. In order to make the value of $\beta$ more readily interpretable, it is essential to transform logit($Y_{it}$) into $Y_{it}$ and $\beta$ into (Exp)$\beta$. Stata does this automatically. The $\beta$-coefficient is presented as the odds ratio, which is a different way to refer to the change in likelihood. $\gamma_{it}$ represents the control variables, which are gender, age, level of education, being a single-person household, and being a single-parent household. $\varepsilon_{it}$ is the error term.

*4.2.2 Hypothesis 2*

**Hypothesis 2:** The introduction of the WWB is associated with an increased likelihood to be employed.

For the analysis of the second hypothesis, two binomial logistic regressions have been executed. The explanatory variable of the first regression was a dummy variable, indicating whether the analysis dealt with the period before or after the introduction of the WWB in 2004. This model is presented in equation (1). As explained above, this regression discontinuity analysis is far from optimal and can only serve to provide some general insight.

Because of this shortcoming, a second binomial logistic regression was run. The second used a multitude of year dummies. This regression ran from the year 1994 until 2014, where the reference year is 1994. This provides insight into the trend of the likelihood of being employed for each year, compared to the 1994 baseline. The regression equation is the same as equation (2).

Here, $Y_{it}$ is the predicted value of the dependent variable, which indicates if someone is employed in a particular year. $\alpha$ is the constant, the value of $Y_{it}$ when $X_t = 0$. For equation (1) this is the case during the period before the WWB and in equation (2) this is the case in the year 1994. $\beta$ is the regression coefficient of $X_t$. In equation (1), the $X_t$ is a dummy variable, indicating whether the outcome deals with the period before or after the introduction of the WWB. In equation (2), $X_t$ is a vector of year dummy variables, where 1994 is the reference year and which runs until 2014. Here too, as explained above, the regression coefficient provides the change in log odds of being employed in a particular year, compared to reference year 1994. Again, Stata transforms this $\beta$ into the odds ratio to show the change in likelihood.

$\gamma_{it}$ represents the control variables, which are gender, age, level of education, being a single-person household, and being a single-parent household. $\varepsilon_{it}$ is the error term.

*4.2.3 Hypothesis 3*

**Hypothesis 3:** The introduction of the WWB is associated with an increased likelihood to receive unemployment benefits or disability benefits.

In order to test the third hypothesis, two binomial logistic regressions have been executed. The explanatory variable of the first regression was a dummy variable, indicating whether the analysis dealt with the period before or after the introduction of the WWB in 2004. This model is presented in equation (1). As explained above, this regression discontinuity analysis is far from optimal and can only serve to provide some general insight.

Because of this shortcoming, the second binomial logistic regression used a multitude of year dummies, running from 1994 until 2014, with reference year 1994. This provided insight into the likelihood to receive unemployment or disability benefits for each year, compared to the 1994 baseline. One binomial logistic regression was run for each of the two benefit types. The regression equations are identical and are as the same as equation (2).

Here, $Y_{it}$ is the predicted value of the dependent variable, which indicates if someone receives unemployment or disability benefits in a particular year. $\alpha$ is the constant, the value of $Y_{it}$ when $X_t = 0$. For equation (1) this is the case during the period before the WWB and in equation (2) this is the case in the year 1994. $\beta$ is the regression coefficient of $X_t$. In equation (1), the $X_t$ is a dummy variable, indicating whether outcome deals with the period before or after the introduction of the WWB. In equation (2), $X_t$ is a vector of year dummy variables, where 1994 is the reference year and which runs until 2014. Here too, as explained above, the regression coefficient provides the change in log odds of receiving unemployment or disability benefits in a particular year, compared to reference year 1994. Again, Stata transforms this $\beta$ into the odds ratio to show the change in likelihood. $\gamma_{it}$ represents the control variables, which are gender, age, level of education, being a single-person household, and being a single-parent household. $\varepsilon_{it}$ is the error term.

*4.2.4 Hypothesis 4*

**Hypothesis 4:** The introduction of the WWB is associated with the strongest decrease of social assistance take-up among men, younger, higher educated people, single-person households, and single-parent households.

In order to test the fourth hypothesis, a linear probability model was run. The reason behind the change of statistical analysis in the fourth hypothesis concerns ease of interpretation. By and large, the linear probability model and the binomial logistic regression model are similar. Both models indicate the change in probability that a certain event occurs. In a logistic regression model these findings are presented as odds ratios, which show the change in likelihood of an event occurring, as a result of a one-unit increase in the independent variable. In a linear probability model, the findings are presented as "regular" coefficients, that indicate the change in percentage points of an event occurring, as a result of a one-unit increase in the independent variable.

Although these statistical analyses are largely similar, the binomial logistic regression model is the superior of the two, in the sense that its $\beta$-values can always be interpreted as intended, while those of a linear probability model cannot. The specifics of this shortcoming of the linear probability model have been discussed in the final section of this document. For now it is important to note that, although the linear probability model has some disadvantages compared to the binomial logistic regression model, it allows for a vastly less complex interpretation. The analysis of hypothesis 4 already deals with interaction terms, which are relatively complex to interpret by themselves. For this reason, preference has been given to a more easily interpretable method of analysis: the linear probability model.

This analysis is different from the first three hypothesis not only in terms of method of statistical analysis, but also in the sense that the factors that were applied as control variables in equation (1) and (2) are used as independent variables in equation (3). The model runs, again, from 1994 until 2014, which is specified using year dummies. Including interaction terms of the five independent variables with the year dummies, provides the reader with insight into the different effects of the introduction of the WWB on different types of households. The equation is as follows:

(3) $Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 'Z_t + \gamma_1 (X_{1it} * Z_t) + \gamma_2 (X_{2it} * Z_t) + \gamma_3 (X_{3it} * Z_t) + \gamma_4 (X_{4it} * Z_t) + \gamma_5 (X_{5it} * Z_t) + \varepsilon_{it}$

Here, $Y_{it}$ is the predicted value of the dependent variable which indicates if someone receives social assistance. $\alpha$ is the constant, the value of $Y_{it}$ when all $X_{nit} = 0$. $\beta_n$ indicates the regression coefficient of each independent variable, $X_{nit}$. This $\beta$ value shows the change in probability that $Y_{it}$ is equal to 1 if the corresponding independent variable changes by one unit. $X_{1it}$ is the first independent variable, gender. $X_{2it}$ is the second independent variable, age. $X_{3it}$ is the third independent variable, level of education. $X_{4it}$ is the fourth independent variable, which indicates whether or not people live in a single-person household. $X_{5it}$ is the fifth independent variable, which indicates whether or not people live in a single-parent household. $\beta_1 X_{1it}$ until $\beta_5 X_{5it}$ show the main effects. These are included in the model separately, in order to control for the fixed differences between the households being compared. $Z_t$ is a dummy variable, indicating whether the period before or after the WWB is being examined. $\gamma_n$ indicates the regression coefficient of the interaction term of the five characteristics with the year dummies. $(X_{nit} * 'Z_t)$ is this interaction term. $\varepsilon_{it}$ is the error term.

In equation (3), no control variables have been included, because the literature has not given any reason to suspect that any other factors can be used to predict whether or not someone receives social assistance. To be sure, this does not mean that there are no other explanatory variables. They may very well exist. However, seeing as no evidence in the literature was found that pointed towards other factors than the five included to be of explanatory value, the regression has been executed without control variables. The upside of this is that it enables an analysis of how well this model fits the data, which, in turn, may help to identify the potential existence and explanatory value of any omitted variables.

### 4.3 Assumption testing of binomial logistic regression

Before running a binomial logistic regression and in order to be able to effectively interpret the results from it, certain assumptions underlying the statistical method of analysis must be tested. In the following paragraphs, these assumptions are briefly described and tested given the data being used in the analysis.

*4.3.1 Sample assumptions*

With a sample size of 82,137 individuals, spread out over 28,759 households, the sample size is large enough to be, in principle, generalisable to the entire Dutch population. Moreover, the assumption of independence of observations is met. Each individual respondent appears as precisely one unit of observation in the dataset.

*4.3.2 Variable assumptions*

First of all, the dependent variable should be dichotomous and the two categories that the dependent variable consists of, should be both mutually exclusive and exhaustive. This is true for all four hypotheses. Also, each independent variable consists of a sufficient number of observations. The independent variable with the lowest number of observations, the variable indicating whether a household is a single-parent household, is made up of 2,712 observations.

Furthermore, the dependent variable(s) should be measured on a continuous or nominal scale. For the first three hypotheses, the main explanatory variables are either period dummies or time dummies, which are treated as nominal variables. Regarding the control variables of the first three hypotheses, sex is also a dummy variable, treated as a nominal variable. Age is a continuous variable. Level of education is actually an ordinal variable, but it has been treated in the data analysis as a nominal variable. Being a single-person or a single-parent household are both dummy variables, also treated as nominal variables.
For the fourth hypothesis, the independent variables are the same as the control variables in the first three hypotheses. On top of that, year dummies are being used and are treated as nominal variables. Finally, the independent variables are being interacted with the year dummies. These interaction terms are, essentially, also dummy variables and are, thus, being treated as nominal variables.

Moreover, logistic regression requires there be no outliers in the continuous independent variables. Seeing as the only continuous independent variable used in this analysis is age, this is not an issue. After all age can, by definition, not yields outlier, since a person only grows so old.

*4.3.3 Multicollinearity*

Multicollinearity occurs when there is a linear association between independent variables. One way of assessing multicollinearity is to examine the range of the [95% Confidence Intervals]. If this range is very large, this may indicate the incidence of multicollinearity. Looking at the results sections, this is generally not the case. Another way of testing for multicollinearity is through Pearson's correlation. This test attempts to draw a line of best fit through the data of two explanatory factors and then checks the degree to which data actually fits that line of best fit. The Pearson's correlation can range from -1 until +1, where -1 and +1 indicate a perfect linear relationship between two independent variables, where a value of 0 indicates no linear relationship. Running a Pearson's correlation that includes all independent variables used throughout this study, yields no alarming results. The value furthest from 0 appears to be 0,2325 between the variables indicating the highest level of completed education and being employed or not. All other values are (much) lower and generally do not exceed the value of 0 by more tan 0,1 (see Appendix A).

# 5. Data and descriptive statistics

## 5.1 Dataset information

First of all, since the WWB is a policy designed to affect the likelihood of individual recipients leaving social assistance, the focus of this research lies with identifying the effects of the WWB on an individual and household level. Some broader trends of the Dutch economy will be provided, but these merely serve to provide the reader with a better understanding of the household-level effects of the WWB. Given this, the analysis revolves around micro-level data. To run the multiple analyses, this research relies on the datasets provided by the DNB Household Survey (DHS) database. More specifically, two datasets have been used: one providing general household information, and the other providing more in-depth information on the different sources of income for each household. For the DHS database, CentERdata has been gathering information on over 1500 households on a yearly basis since 1993 (CentERdata, 2021). The DNB Household Survey database observes these households over the course of many years (or at least as many as a particular household participates in the survey), in terms of mostly objectively measurable factors, such as income, household make-up and sources of income. This allows for a longitudinal analysis of the participating households, that should, together on average, be representative of the entire Dutch population. This research is based on datasets from 1994 until 2014.

## 5.2 Data preparation

### *5.2.1 Sample selection*

This research is focused on the ability of a policy of getting people to work. Therefore, the dataset has been prepared to be as close to the Dutch definition, as specified by the Central Bureau for Statistics (CBS), of the working population as possible. This means that all observations on people under the age of 15 and above the age of 75 have been dropped (Centraal Bureau voor de Statistiek, 2021).

### *5.2.2 Dataset preparation*

First, it was specified in Stata that the analyses would be dealing with panel data. The next step was renaming, relabelling, and ordering any relevant variables, to increase the ease of analysis. First, the dependent variables for the first three hypotheses were prepared. Throughout all 21 datasets on household income, the variable called “is26” was used to indicate whether or not someone received social assistance in a given year. This, thus, included recipients of both the

nAbw and the WWB. This variable was renamed “SocAss”. The variable “Employed” was generated to indicate whether or not someone was employed in a given year. This variable was made up of three original variables from the DHS dataset. These variables were “bezigbel”, which included data from 1994 until 2003, “belbezig”, which included the same categories but for data from 2004 until 2006, and “bezighei”, which included data from 2007 until 2014. The variable “Employed” reduced the multiple categories found in the three original variables to two: yes and no. The variable indicating whether someone received unemployment benefits (WW) in a given year, was renamed to be “WW”. In order to efficiently run analyses including the multiple disability benefits, a new variable was generated: “DisBen”. This variable indicates whether or not someone received disability benefits in the form of the Disability insurance act (WAO/WIA), General disability benefits act (AAW/WAZ), or Wajong in a given year. All abovementioned variables have, at some point in this research, been used as dependent variables. The dichotomous nature of all these variables allowed for running a binomial logistic regression analysis.

Following this, the variables used as control variables in the first three hypotheses and as explanatory variables in the fourth hypothesis were prepared for analysis. The variable “geslacht” was renamed to “sex”. The variable “age” was generated by taking the year of the data gathering and subtracting the year of birth from it for each individual respondent. The variable “Education” was generated to indicate the highest level of education that an individual had completed. This ordinal variable consisted of six categories: Kindergarten/primary education, (Continued) special education, Lower secondary education, Middle secondary education, Higher secondary education, and University education. Lastly, two dichotomous variables were generated to indicate whether or not a household was a single-person household or a single-parent household, respectively.

In all statistical analyses, the following characteristics of variables apply. The variable “period” is coded as a 0 for the period before the WWB introduction and a 1 for the period after the WWB introduction. The year dummy variables all have the year 1994 as the reference year. For the variable “sex”, the reference category is male, and for “age” the reference category is the age of 15. For the variable “Education”, the reference category is having completed kindergarten/primary school as the highest level of education. For both the variables “SinglePersonhh” and “SingleParenthh”, the reference category is no, i.e. not being a single-person household or single-parent household, respectively.

## 5.3 Background information

### *5.3.1 Disability benefits*

In reference year 1994, the total disability benefits take-up number was 894,000. From 1994 until 1998, this number decreased, only to increase more strongly after 1998. Between 1998 and 2002, the take-up of disability benefits increased by around 89,000 individuals. From 2002 onwards, the take-up number of disability benefits steadily declined over time, as shown in in Figure 1 (Volksgezondheidenzorg.info, 2021a). After 2004, the year of the introduction of the WWB, disability benefits take-up declines even more sharply. After 2006, this slope is somewhat less steep, but nevertheless indicates a decreasing take-up of disability benefits.

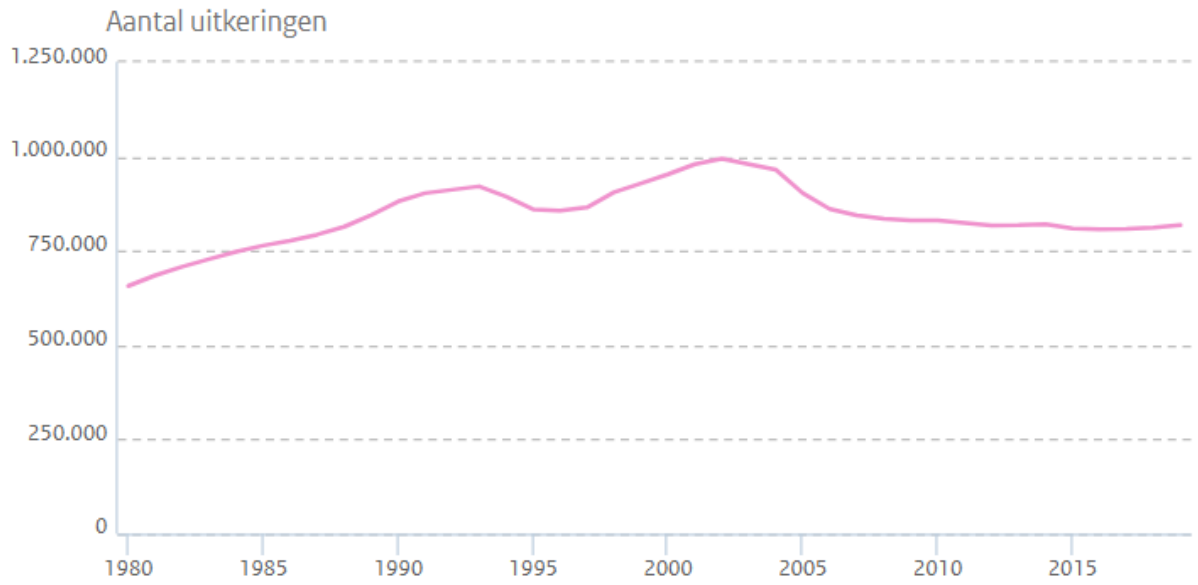


*Figure 1. The graph shows the total stock of yearly disability benefit recipients in the Netherlands from 1980 until 2019. Volksgezondheidenzorg.info database.*

### *5.3.2 Unemployment benefits (WW)*

From 2002 until medio 2006, WW benefits were granted to at least 14.000 people with a WWB history. This equals to roughly 4,5% of all WW recipients in March 2006. Unfortunately, CBS data as shown in Figure 2 on the stock of WW recipients only runs from 2007 onwards. Although this is suboptimal, it does still allow us to perceive a downward trend of total stock until 2008. Despite the meagre amount of data available, it provides a reason to further investigate the trend of the WW stock before 2007 (Centraal Bureau voor de Statistiek, April 1st, 2021).

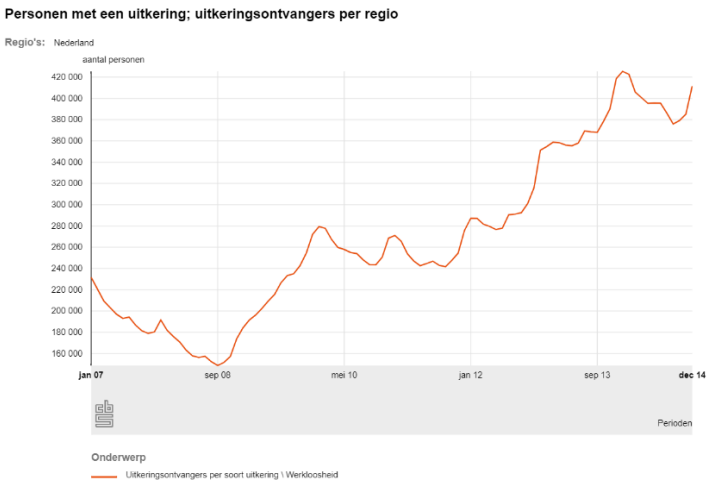


*Figure 2. The graph shows the stock of WW recipients in The Netherlands from January 2007 until December 2014. CBS Statline database.*

To provide some additional insight into the trend of unemployment and the corresponding unemployment benefit recipients, Figure 3 has been added to show the trend of Dutch unemployment rates from 2003 onwards. Figure 3 presents CBS data showing that, in the year immediately after the introduction of the WWB, the unemployment rate increased more slowly than before. From 2005 until 2008, the unemployment rate dropped by 2%. From the 2008 economic crisis onwards, however, it appears that the WWB was no longer able to push the unemployment rate down further (Centraal Bureau voor de Statistiek, April 22nd, 2021).

The information above is not meant to be used for drawing any conclusions. Rather, this section is intended to provide the reader with some insights into the macro-level trends that accompanied the WWB, in order to better understand the micro-level processes.

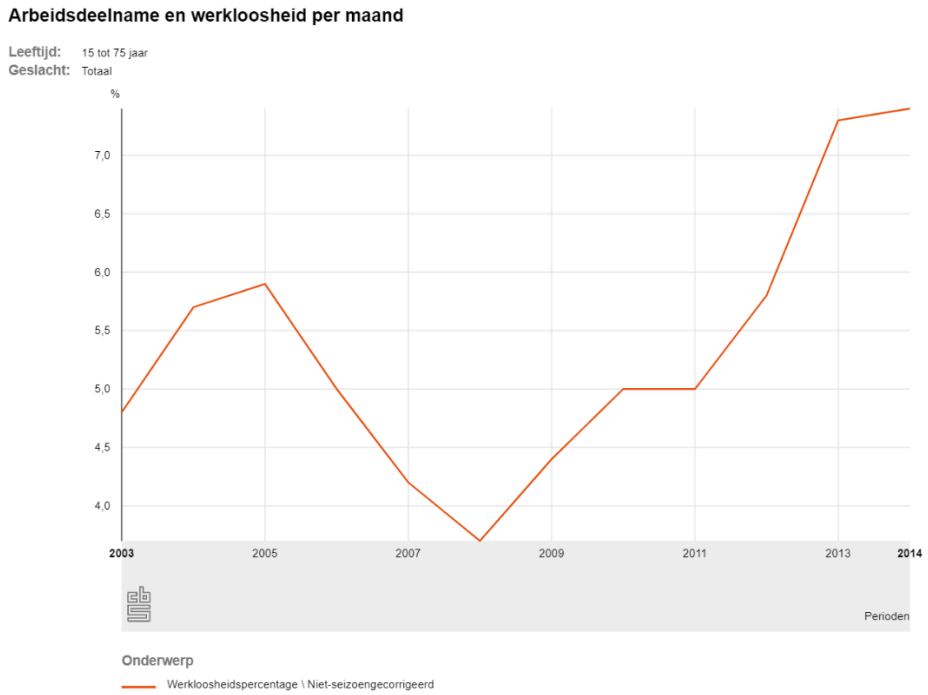


*Figure 3. The graph shows the unemployment rate in The Netherlands from 2003 until 2014. CBS Statline database.*

## 5.4 Descriptive statistics

### *5.4.1 Number of people on social welfare*

The total dataset consisted of  82,137 data points. Throughout the dataset, there were 482 data points that corresponded with an individual receiving social assistance in one or more years between 1994 and 2014. For the year 2000, no data was available on social assistance take-up. Therefore, this year has been excluded from the descriptive statistics on social assistance. This left 79,604 data points.

Figure 4 shows how many individuals received social assistance each year. Given the total number of social assistance recipients and the size of my dataset, these results indicate that around 0,6% of the respondents received social assistance at one point in the period from 2004 until 2014. Comparing this to the national average percentage, which is estimated at around 2,5%, the dataset is not fully representative (“Meer mensen in de bijstand, eerste stijging in 2,5 jaar”, 2020). This, although not ideal, is understandable. After all, one can expect someone in social assistance to have other things on their mind than to fill out an extensive survey, that asks for information on their income, which is in itself already something they might not like to share or think about. I argue that growing weary of filling out administration and other forms,

being uncomfortable talking about receiving social assistance, and having too little time or energy to fill out the survey, are among the reasons that the group of social assistance recipients is underrepresented in the dataset. This underrepresentation, however, is no reason to neglect to investigate this particular group of citizens. After all, providing social assistance is a key task of the modern-day welfare state and its recipients have a great influence on governmental spending and policy, and vice versa.

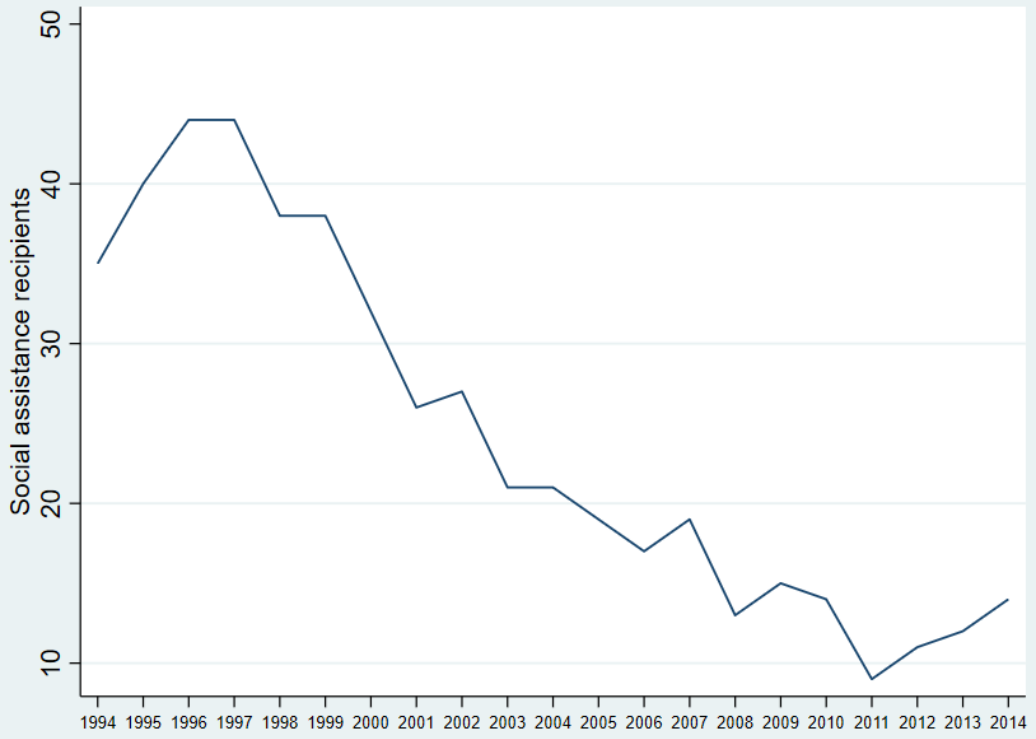


*Figure 4. Overview of number of social assistance recipients from 1994 – 2014, per year.*

Figure 5 does the same as figure 4, but for individuals who received social assistance, *or* disability benefits, *or* WW or a combination of the three. This yields a total of 7,851 datapoints, which accumulates to around 9,9% of the total dataset. From table 1, it can be derived that the percentage of disability benefits recipients is approximately 7,5% and the percentage of WW recipients in the dataset lies around 2,4%. These numbers approximate the percentages in all of the Netherlands relatively well. In 2019, for people between 15 and 75, around 6,3% received disability benefits (Volksgezondheidenzorg.info, 2021b). In March 2020, around 2,9% of people between 15 and 75 received WW (Centraal Bureau voor de Statistiek, February 18th, 2021). Although these percentages are snapshots taken only at one moment, they provide at least some idea of the level of disability benefits and WW recipients.


*Figure 5. Overview of the aggregate number of social assistance and unemployment and disability benefits recipients from 2004 – 2014, per year.*

In table 1, the take-up of social assistance, disability benefits, and WW is split up into two categories: take-up before and after the introduction of the WWB. One observation that immediately became clear from these tables, was the fact that the take-up of social assistance, disability benefits *and* WW have all gone down in the period after 2004, compared to the years before it. Even despite the fact that the period from 2004 until 2014 is one year longer than the period from 1994 – 2003, and thus consists of more data points in total, the take-up of all three social assistance programmes has gone down visibly. All tables presented in this documents have been created with asdoc program, written by Shah (2018).

Finally, since the year 1994 has often been used as the reference category in the statistical analyses, it is worthwhile to provide some additional data on that particular year. In 1994, the dataset contained 35 social assistance recipients, 188 unemployment benefits recipients, and 777 disability benefits recipients.

This means that 0.66% of the dataset received social assistance in 1994, 3.57% received unemployment benefits and 14.74% received disability benefits.

**Table 1**

*Numbers of Individuals That Received Social Assistance (1), Unemployment Benefits (2), or Unemployment Benefits(3) Before and After the WWB Introduction*

(1)

| Period | N |
|---|---|
| Before | 314 |
| After | 168 |
| Total | 482 |

(2)

| Period | N |
|---|---|
| Before | 3,821 |
| After | 2,152 |
| Total | 5,973 |

(3)

| Period | N |
|---|---|
| Before | 1.119 |
| After | 785 |
| Total | 1.904 |

*Note.* All tables have been created with asdoc program, written by Shah (2018).

*5.4.2 Sample characteristics*

It follows from table 2 that the sample is evenly distributed in terms of sex. Tables 3 and 4 show, respectively the distribution of age and level of education among WWB recipients. From these three tables it follows that the most common characteristics for a WWB recipient are being female, aged between 29 and 55, and having received less-than-higher education.

**Table 2**

*Number and Percentage of Males and Females among Social Assistance Recipients and Non-Recipients*

| | Sex | | |
|---|---|---|---|
| Social assistance recipient | Male | Female | Total |
| No | 26,133 | 22,831 | 48,964 |
| % | 52.85 | 46.17 | 99.03 |
| Yes | 113 | 369 | 482 |
| % | 0.23 | 0.75 | 0.97 |
| Total | 26,246 | 23,200 | 49,446 |
| % | 53.08 | 46.92 | 100.00 |

**Table 3**

*Average and Median Age of Social Assistance Recipients*

| | Mean | Median |
|---|---|---|
| Age | 43.089 | 43 |

**Table 4**

*Number and Percentage of Different Levels of Education of Social Assistance Recipients*

| | Freq. | Percent | Cum. |
|---|---|---|---|
| Kindergarten/primary education | 6,588 | 8.45 | 8.45 |
| (Continued) special education | 4,721 | 6.06 | 14.51 |
| Lower secondary education | 22,148 | 28.41 | 42.91 |
| Middle secondary education | 26,468 | 33.95 | 76.86 |
| Higher secondary education | 10,029 | 12.86 | 89.73 |
| University education | 8,008 | 10.27 | 100.00 |
| Total | 77,962 | 100.00 | |

# 6. Results

## 6.1 Hypothesis 1

**Hypothesis 1:** The introduction of the WWB is associated with a decreased likelihood of receiving social assistance.

For the analysis of hypothesis 1, a binomial logistic regression was run to understand the likelihood of receiving social assistance in the period after the WWB introduction, compared to the period before it. Subsequently, the same was done, but for the likelihood of receiving social asssistance in a particular year, compared to the likelihood in 1994. The control variables were sex, age, level of education, being a single-person household, and being a single-parent household. In table 5, the independent variable is a dummy indicating the periods before and after the WWB introduction in 2004. In table 6, year dummies were used as independent variables.

Figure 4, presented in the previous section, already suggests that, over the course of 21 years from 1994 until 2014, there has been a generally downward trend in terms of social assistance take-up. As stated before, data on social assistance take-up is missing for 2000, and take-up for that year, thus, appears to be 0. In order to avoid this outlier having too much effect on the data analysis, the year 2000 was excluded from the analysis.

The results from the binomial logistic regression on the changing likelihood of receiving social assistance in the period after the WWB introduction, compared to the period before it, are presented in table 5. The likelihood ratio chi-squared test is statistically significant ($p < 0.0000$), which suggests evidence of a good model fit, compared to a null model without independent variables. From this, it can be concluded that the model yields a significant improvement in fit, relative to the null model.

The main odds ratio of interest in table 5 is the odds ratio of the variable “Period”. This odds ratio is 0.692 ($p = 0.001$). This indicates that, in the period after the WWB introduction, the likelihood of receiving social assistance was 1.45 ( = 1 / 0.692) times smaller than in the period before the WWB introduction. Given the statistical significance of this odds ratio, we can conclude that there is, indeed, a decreased likelihood of receiving social assistance in the period

after the WWB introduction, compared to the period before it. This is already evidence that the null hypothesis can be rejected.

**Table 5**

*Results of the Binomial Logistic Regression on the Odds Ratio of Receiving Social Assistance Before and After the WWB Introduction*

| Social Assistance | Odds ratio | St.Err. | Sig |
|---|---|---|---|
| Period | .692 | .078 | *** |
| Sex | 2.753 | .344 | *** |
| Age | .991 | .004 | ** |
| Education | | | |
| (Continued) special education | .575 | .131 | ** |
| Lower secondary education | .616 | .107 | *** |
| Middle secondary education | .265 | .051 | *** |
| Higher secondary education | .402 | .082 | *** |
| University education | .457 | .096 | *** |
| Single-person household | 12.262 | 1.708 | *** |
| Single-parent household | 43.116 | 5.99 | *** |
| Constant | .005 | .001 | *** |

| | | | |
|---|---|---|---|
| Mean dependent var | 0.013 | SD dependent var | 0.115 |
| Pseudo r-squared | 0.207 | Number of obs | 31,715 |
| Chi-square | 931.673 | Prob > chi2 | 0.000 |

**** p<.01, ** p<.05, * p<.1*

Given the results presented in table 5, it appears worthwhile to analyse the odds ratios for each individual year as well, rather than only grouping them together into periods before and after the WWB introduction. After all, this allows for the comparison of likelihoods for years more closely centred around the 2004 cut-off. Precisely this information has been presented in table 6. The results from the binomial logistic regression on the changing likelihood of receiving social assistance in a given year, compared to 1994, are presented there. The likelihood ratio

chi-squared test is statistically significant ($p < 0.0000$), which suggests evidence of a good model fit, compared to a null model without independent variables. From this, it can be concluded that the model yields a significant improvement in fit, relative to the null model.

For the variable "year", the reference category is 1994. From the different p-values of the explanatory variables, it appears that the year dummies have no statistically significant effect on the likelihood of receiving social assistance. Two exceptions are the years 1998 ($p = 0.008$) and 1999 ($p = 0.012$). However, it is not strange that the year dummies individually do not appear to yield a statistically significant effect. After all, one year out of 21 years cannot be expected to make the difference on its own. Had the variable "year" been a continuous variable, running from 1994 until 2014, statistical significance would be expected and required. Running the same binomial logistic regression with "year" as a continuous variable does, indeed yield a statistically significant odds ratio of 0.972 ($p = 0.001$). In conclusion, the statistical significance of each individual year dummy tells us relatively little about its explanatory value. A better way of being able to say something about the statistical significance of the individual year dummies, is by checking the joint significance of all year dummies. This yields a p-value of 0.0184, which indicates that there is sufficient evidence to conclude that the observed results and the expected results are not the same (see Appendix B).

In table 6, the odds ratio of each year dummy is interpreted as the factor change in the odds of receiving social assistance in the corresponding year, compared to the odds of receiving social assistance in 1994. For example, in 1995, the odds of receiving social assistance change by a factor of 1.187. In even other words, the odds of receiving social assistance were 1.187 times higher in 1995 than in 1994. If an odds ratio has a value of less than 1, this means that the likelihood of receiving social assistance decreases. For example, in 2006 the odds ratio is 0.896. This indicates that the likelihood of receiving social assistance is smaller than in 1994. Put differently, the likelihood of receiving social assistance in 2006 is 1.12 ( = 1 / 0.896) times smaller than in 1994.

From 1994 until 1998, the odds ratios follow an increasing trend. From 1995 until 2005, the odds ratios are consistently larger than 1. This means that, in every one of the eight years before the WWB introduction, the likelihood of receiving social assistance was larger than it was in 1994. 2006 is the first year where the likelihood of receiving social assistance changes by a factor lower than 1. Moreover, during the period after the WWB introduction in 2004, the

likelihood of receiving social assistance decreases for seven out of eleven years. In the years after the WWB introduction, the likelihood of receiving social assistance was generally smaller than in 1994, except during the years 2004, 2005, 2007 and 2009.

Given the statistical significance presented in table 5, the overall trend presented in table 6, and the joint statistical significance of those year dummies, it appears that there is sufficient evidence to reject the null hypothesis. The alternative hypothesis, which states that the introduction of the WWB is associated with a decreased likelihood of receiving social assistance, is not contradicted by the data.

**Table 6**

*Results of the Binomial Logistic Regression of the Effect of Year on the Odds Ratio of Receiving Social Assistance in a Particular Year*

| Social Assistance | Odds ratio | St.Err. | Sig |
|---|---|---|---|
| Year | | | |
| 1995 | 1.187 | .294 | |
| 1996 | 1.566 | .379 | * |
| 1997 | 1.619 | .399 | * |
| 1998 | 1.969 | .499 | *** |
| 1999 | 1.913 | .497 | ** |
| 2001 | 1.330 | .378 | |
| 2002 | 1.655 | .454 | * |
| 2003 | 1.139 | .340 | |
| 2004 | 1.391 | .404 | |
| 2005 | 1.076 | .326 | |
| 2006 | .896 | .289 | |
| 2007 | 1.136 | .352 | |
| 2008 | .970 | .329 | |
| 2009 | 1.086 | .351 | |
| 2010 | .947 | .315 | |
| 2011 | .601 | .235 | |
| 2012 | .678 | .248 | |
| 2013 | .743 | .262 | |
| 2014 | .894 | .288 | |
| Sex | 2.753 | .318 | *** |
| Age | .991 | .003 | *** |
| Education | | | |
| (Continued) special education | .540 | .124 | *** |
| Lower secondary education | .614 | .108 | *** |
| Middle secondary education | .284 | .053 | *** |
| Higher secondary education | .440 | .089 | *** |
| University education | .485 | .101 | *** |
| Single-person household | 12.046 | 1.551 | *** |
| Single-parent household | 43.25 | 5.753 | *** |

| Social Assistance | Odds ratio | St.Err. | Sig |
|---|---|---|---|
| Constant | .001 | 0.000 | *** |

| | | | |
|---|---|---|---|
| Mean dependent var | 0.009 | SD dependent var | 0.097 |
| Pseudo r-squared | 0.236 | Number of obs | 46,766 |
| Chi-square | 1179.25 | Prob > chi2 | 0.000 |

**** p<.01, ** p<.05, * p<.1*

### 6.2 Hypothesis 2

**Hypothesis 2:** The introduction of the WWB is associated with an increased likelihood to be employed.

The analysis of hypothesis 2 requires the same statistical analysis as hypothesis 1 and requires only small, yet essential, modifications. In order to provide an answer to the hypothesis, a binomial logistic regression was run. The aim of this analysis was to gain insight into the likelihood of being employed in the period after the WWB introduction, compared to the period before it. After this, the same was done for year dummies, indicating the likelihood of being employed in a particular year, compared to the likelihood of being employed in 1994. The control variables were sex, age, level of education, being a single-person household, and being a single-parent household. In table 7, the independent variable is a dummy indicating the periods before and after the WWB introduction in 2004. In table 8, year dummies were used as independent variables.

Figure 3 in the "Data and descriptive statistics" section, shows the trend of the unemployment rate in the Netherlands from 2003 until 2014. These data show a decline in unemployment from 2005 until 2008. From 2008 until 2013, however, unemployment rises relatively sharply. This increasing trend appears to level out somewhat from 2013 until 2014. These data have been presented in order to provide some additional insight into the macro-trend of unemployment in the Netherlands.
However, the analysis of the second hypothesis requires a micro-level analysis of employment. Therefore, as explained in the previous section, the variable "Employed" was generated. This variable is an accumulation of three variables from the DHS dataset that categorized an individual's main occupation. These three variables all contained the same information, but each one contained information for only a selection of the total of 21 years. The variable "Employed" accumulated these three variables into one and merged the multiple categories into two: being employed or not. This way, a new dummy variable was generated that provided micro-level information on employment for all 21 years.

The results from the binomial logistic regression on the changing likelihood of being employed in the period after the WWB introduction, compared to the period before it, are presented in table 7. The likelihood ratio chi-squared test is statistically significant ($p < 0.0000$), which suggests evidence of a good model fit, compared to a null model without independent variables.

From this, it can be concluded that the model yields a significant improvement in fit, relative to the null model.

The main odds ratio of interest in table 7 is the odds ratio of the variable “Period”. This odds ratio is 1.036 ($p = 0.035$). This indicates that, in the period after the WWB introduction, the likelihood of receiving social assistance was 1.036 times larger than in the period before the WWB introduction. Given the statistical significance of this odds ratio, we can conclude that there is, in fact, an increased likelihood of being employed in the period after the WWB introduction, compared to the period before it. This is already evidence that the null hypothesis can be rejected.

**Table 7**

*Results of the Binomial Logistic Regression on the Odds Ratio of Being Employed Before and After the WWB Introduction*

| Employed | Odds ratio | St.Err. | Sig |
|---|---|---|---|
| Period | 1.036 | .017 | ** |
| Sex | .454 | .007 | *** |
| Age | .964 | .001 | *** |
| Education | | | |
| (Continued) special education | 5.478 | .265 | *** |
| Lower secondary education | 9.04 | .352 | *** |
| Middle secondary education | 19.088 | .743 | *** |
| Higher secondary education | 5.346 | .221 | *** |
| University education | 21.536 | .964 | *** |
| Single-person household | 1.227 | .032 | *** |
| Single-parent household | .712 | .033 | *** |
| Constant | .937 | .036 | * |

| | | | |
|---|---|---|---|
| Mean dependent var | 0.551 | SD dependent var | 0.497 |
| Pseudo r-squared | 0.145 | Number of obs | 77,883 |
| Chi-square | 15489.860 | Prob > chi2 | 0.000 |

**** p<.01, ** p<.05, * p<.1*

The findings presented in table 7, however, still yield relatively little information on the change in likelihood *per year*. This information can, however, be relevant, given the fact that it allows for the comparison of likelihoods for years more closely centred around the 2004 cut-off. The results from the binomial logistic regression on the changing likelihood of being employed in a given year, compared to 1994, are presented in table 8. The likelihood ratio chi-squared test is statistically significant ($p < 0.0000$), which suggests evidence of a good model fit, compared to a null model without independent variables. From this, it can be concluded that the model yields a significant improvement in fit, relative to the null model.

It appears that, different from the analysis of hypothesis 1, the p-values of most year dummies indicate statistical significance. The only years without a p-value below 0.05 are 1995 until 1999 and 2005. Still, however, it is not so much the statistical significance of each individual year dummy that should be of interest. The joint significance of all year dummies together is a more comprehensive and more ready interpretable statistic. Checking the joint significance yields a p-value less than 0.05 ($p < 0.000$), which indicates that there is sufficient evidence to conclude that the observed results and the expected results are not the same (see Appendix B).

In table 8, the odds ratio of each year dummy is interpreted as the factor change in the odds of being employed in the corresponding year, compared to the odds of being employed in 1994. This interpretation is the same as the interpretation for hypothesis 1 based on table 6. Again, an odds ratio larger than 1 indicates an increased likelihood and an odds ratio smaller than 1 indicates a decreased likelihood compared to reference year 1994. The further away from 1, the larger the observed change in likelihood.

From 1995 until 1999, the odds ratios are almost 1, which indicates that the change in likelihood of being employed in those years compared to 1994 was minimal. In 2000 and 2001, however, the odds ratios increase sharply, indicating a strong increase in the odds of being employed. For these years, people are 1.771 and 1.508 times more likely to be employed compared to 1994. In 2002, the odds ratios still indicate an increased likelihood to be employed, but are much closer to 1. After this, from 2003 until 2009, the odds ratios are somewhat lower than in the first two years of the new millennium, but still indicate an increased likelihood of being employed. The odds ratios in these years maintain similar values as they range between 1.207 and 1.251, with the exception of 2005 and 2006, where the changes in likelihood dip temporarily to values just above 1. In 2010, the likelihood of being employed is still higher than the same likelihood in 1994, but the odds ratio is visible lower than in previous years. This downward trend can be perceived until 2013. In 2014, the increase in likelihood picks up once more and shows that, in that year, someone is 1.234 times more likely to be employed compared to 1994.

As presented in table 7, there is a small increase in the likelihood of being employed. Given the statistical significance of this increase, we can conclude that the periods before and after the WWB introduction were not the same in terms of likelihoods of being employed. The odds ratios presented in table 8 tell two stories, dependent upon the timespan of analysis. Looking

at the years closest to the 2004 cut-off, it appears that the likelihood of being employed compared to reference year 1994 has *decreased* after the WWB introduction. Taking into account all years presented in the table, however, a different trend can be perceived. Over the course of all these twenty years, the odds of being employed had some peaks and dips, but the structural trend appears to go up, in line with the findings presented in table 7.

Strictly speaking, the null hypothesis can be rejected based on the data presented in table 7 and 8. It appears that there is a statistically significant increase in likelihood of being employed associated with the introduction of the WWB. However, two sidenotes to this conclusion are essential. First, the increase in likelihood is small and, second, only becomes apparent when the trend of twenty years is examined. Focusing on the years closer to the WWB introduction yields results that contradict the hypothesis. It can, therefore, not be directly concluded that the increase in likelihood of being employed can be fully attributed to the introduction of the WWB. In short, although the null hypothesis can be rejected, the alternative hypothesis cannot be accepted without the necessary reservations.

**Table 8**

*Results of the Binomial Logistic Regression of the Effect of Year on the Odds Ratio of Being Employed in a Particular Year*

| Employed | Odds ratio | St.Err. | Sig |
|---|---|---|---|
| Year | | | |
| 1995 | 1.061 | .046 | |
| 1996 | 1.007 | .044 | |
| 1997 | 1.016 | .046 | |
| 1998 | .968 | .048 | |
| 1999 | 1.013 | .052 | |
| 2000 | 1.771 | .095 | *** |
| 2001 | 1.508 | .075 | *** |
| 2002 | 1.154 | .056 | *** |
| 2003 | 1.216 | .060 | *** |
| 2004 | 1.207 | .060 | *** |
| 2005 | 1.091 | .053 | * |
| 2006 | 1.121 | .055 | ** |
| 2007 | 1.214 | .061 | *** |
| 2008 | 1.222 | .063 | *** |
| 2009 | 1.251 | .063 | *** |
| 2010 | 1.167 | .057 | *** |
| 2011 | 1.138 | .057 | *** |
| 2012 | 1.113 | .055 | ** |
| 2013 | 1.112 | .054 | ** |
| 2014 | 1.234 | .060 | *** |
| Sex | .452 | .007 | *** |
| Age | .964 | .001 | *** |
| Education | | | |
| (Continued) special education | 5.916 | .290 | *** |
| Lower secondary education | 9.181 | .358 | *** |
| Middle secondary education | 19.553 | .764 | *** |
| Higher secondary education | 5.521 | .228 | *** |
| University education | 22.268 | 1.000 | *** |
| Single-person household | 1.204 | .031 | *** |
| Single-parent household | .723 | .033 | *** |

| Employed | Odds ratio | St.Err. | Sig |
|---|---|---|---|
| Constant | 1.804 | .098 | *** |

| | | | |
|---|---|---|---|
| Mean dependent var | 0.551 | SD dependent var | 0.497 |
| Pseudo r-squared | 0.147 | Number of obs | 77,883 |
| Chi-square | 15739.539 | Prob > chi2 | 0.000 |

**** p<.01, ** p<.05, * p<.1*

### 6.3 Hypothesis 3

**Hypothesis 3:** The introduction of the WWB is associated with an increased likelihood to receive unemployment benefits or disability benefits.

The process of analysing hypothesis 3 is practically identical to that of hypotheses 1 and 2, the only difference being the independent variables. For the analysis of hypothesis 3, four separate binomial logistic regressions were run. In the first two, the dependent variable was a dummy indicating whether or not someone received unemployment benefits, whereas, in the second two, the dependent variable was a dummy indicating whether or not someone received disability benefits. For both dependent variables, two separate regressions were run. For one, the main independent variable was a dummy indicating whether the analysis dealt with the period before or after the WWB introduction. For the other, the main independent variables were year dummies, running from 1994 until 2014. The control variables in all regressions were sex, age, level of education, being a single-person household, and being a single-parent household.

Figure 1 and 2 from the previous section provide insight into the macro-trend of disability benefits and unemployment benefits, respectively. More detailed information on these figures has been presented in the previous section. Broadly speaking, however, it appears that take-up of unemployment benefits has generally gone up between 1994 and 2014, while take-up of disability benefits has generally gone down between 2002 and 2014.

The results from the binomial logistic regression on the changing likelihood of receiving unemployment benefits or disability benefits for the dummy variable indicating the period before or after the WWB introduction are presented in tables 9 and 11, respectively.
Similar results, the main difference being that the independent variable has been split up into year dummies, are presented in table 10 and 12, respectively. The likelihood ratio chi-squared test of all four models indicates statistical significance ($p < 0.0000$), which suggests evidence of a good model fit, compared to a null model without independent variables. From this, it can be concluded that all models yield a significant improvement in fit, relative to the null model.

Furthermore, it appears that checking the joint significance of all year dummies yields ($p < 0.000$) for both the regression on unemployment benefits and the regression on disability benefits (see Appendix B).

*6.3.1 Unemployment benefits*

The results from the binomial logistic regression on the changing likelihood of receiving unemployment benefits in the period after the WWB introduction, compared to the period before it, are presented in table 9.

The main odds ratio of interest in table 9 is the odds ratio of the variable "Period". This odds ratio is 1.055 ($p = 0.303$). The statistical non-significance indicates that we cannot conclude that there is a difference in terms of likelihood to receive unemployment benefits between the periods before and after the WWB introduction. This means that the null hypothesis cannot be rejected.

Despite this statistical non-significance, it may still be insightful to examine the changes in likelihood of receiving unemployment benefits *per year*. Although the main null hypothesis cannot be proven through this information, it might still be relevant, given the fact that it allows for a more focused comparison of likelihoods of years more closely centred around the 2004 cut-off. Precisely this information has been presented in table 10.

**Table 9**

*Results of the Binomial Logistic Regression on the Odds Ratio of Receiving Unemployment Benefits Before and After the WWB Introduction*

| Unemployment benefits | Odds ratio | St.Err. | Sig |
|---|---|---|---|
| Period | 1.055 | .054 | |
| Sex | .803 | .039 | *** |
| Age | .994 | .002 | *** |
| Education | | | |
| (Continued) special education | 1.727 | .268 | *** |
| Lower secondary education | 1.859 | .251 | *** |
| Middle secondary education | 1.446 | .196 | *** |
| Higher secondary education | 1.671 | .239 | *** |
| University education | 1.328 | .198 | * |
| Single-person household | 1.756 | .104 | *** |
| Single-parent household | 2.511 | .267 | *** |
| Constant | .032 | .005 | *** |

| | | | |
|---|---|---|---|
| Mean dependent var | 0.038 | SD dependent var | 0.191 |
| Pseudo r-squared | 0.012 | Number of obs | 47,965 |
| Chi-square | 192.383 | Prob > chi2 | 0.000 |

**** p<.01, ** p<.05, * p<.1*

In table 10, the odds ratio of each year dummy is interpreted as the factor change in the odds of receiving unemployment benefits in the corresponding year, compared to the odds of receiving unemployment benefits in reference year 1994. This interpretation is the same as the interpretation for hypotheses 1 and 2. Once again, it must be mentioned that the results presented below cannot be said to have any statistical significance. The results are still presented below to provide at least some more insight into the trend of the likelihood of receiving unemployment benefits.

From 1995 until 1999, the odds ratios exceed the value of 1. During these years, the likelihood of receiving unemployment benefits was structurally higher than that same likelihood in 1994. From 2000 until 2003, the values of the odds ratios are relatively far below 1, indicating that receiving unemployment benefits was much less likely during those years than it was in 1994. The trend of low odds ratios is interrupted in the years 2004, 2005 and 2006, where the odds ratios temporarily spike to values above 1, only to return to values relatively far below 1 for the years 2007 until 2010. In 2011 the odds ratio is almost 1, indicating that the likelihood of receiving unemployment benefits is similar in 2011 to that of 1994. For the three final years of the analysis, the odds ratios indicate an increased likelihood to receive unemployment benefits, compared to the situation in 1994.

In other words, between 2000 and 2003, and again from 2007 until 2010, the likelihood of receiving unemployment benefits was much lower than it was in 1994. These findings correspond, to some extent, to the findings presented in table 8 on the likelihood of being employed. Table 8 presents, for the year 2000, a large spike that indicates a strongly increased likelihood to be employed. It is possible that this effect reverberated for some years after that. However, a myriad of other factors may have contributed to the strongly decreased likelihoods of receiving unemployment benefits from 2000 until 2003 and from 2007 until 2010.

Overall, in line with the lack of statistical significance established in table 9, no clear trend can be deduced from table 10. Rather, the odds ratios generally appear to fluctuate over the course of twenty years. Once more, the data do not seem to support the hypothesis that the introduction of the WWB was followed by a period of a structurally increased likelihood to receive unemployment benefits. However, 2004, the year of the WWB introduction, does mark a clear trend break, away from low likelihoods to receive unemployment benefits. From 2000 until 2003, people were far less likely to receive unemployment benefits. In 2004, the odds ratios increased relatively strongly and even exceeded the value of 1. Although it cannot be assumed that this has been the direct effect of the WWB introduction, it is noteworthy that the year of the WWB introduction is associated with this temporary but clear trend break. From 2004 onwards, the odds ratios remain above 1 for three years, but in 2007 and beyond, the likelihood of receiving unemployment benefits takes a dip once more. Whatever the cause of the spike in 2004, it appears to have only been temporary.

To sum up, the data does not indicate that the introduction of the WWB in 2004 is associated with an increased likelihood to receive unemployment assistance. The lack of statistical significance presented in table 9 does not warrant the conclusion that the periods before and after the WWB introduction differ in terms of unemployment benefits take-up. Although table 10 provides some more insight into the trends of the odds ratios before and after the WWB introduction, no clear structural trend becomes apparent. In conclusion, the findings do not support the rejection of the null hypothesis.

**Table 10**

*Results of the Binomial Logistic Regression of the Effect of Year on the Odds Ratio of Receiving Unemployment Benefits in a Particular Year*

| Unemployment Benefits | Odds ratio | St.Err. | Sig |
|---|---|---|---|
| Year | | | |
| 1995 | 1.197 | .128 | * |
| 1996 | 1.272 | .139 | ** |
| 1997 | 1.147 | .135 | |
| 1998 | 1.339 | .168 | ** |
| 1999 | 1.240 | .162 | |
| 2000 | .786 | .166 | |
| 2001 | .656 | .110 | ** |
| 2002 | .666 | .109 | ** |
| 2003 | .705 | .112 | ** |
| 2004 | 1.191 | .164 | |
| 2005 | 1.351 | .176 | ** |
| 2006 | 1.171 | .161 | |
| 2007 | .827 | .130 | |
| 2008 | .704 | .122 | ** |
| 2009 | .572 | .108 | *** |
| 2010 | .658 | .115 | ** |
| 2011 | .970 | .152 | |
| 2012 | 1.197 | .173 | |
| 2013 | 1.371 | .187 | ** |
| 2014 | 1.832 | .223 | *** |
| Sex | .807 | .040 | *** |
| Age | .994 | .002 | *** |
| Education | | | |
| (Continued) special education | 1.552 | .242 | *** |
| Lower secondary education | 1.840 | .249 | *** |
| Middle secondary education | 1.455 | .198 | *** |
| Higher secondary education | 1.650 | .237 | *** |
| University education | 1.304 | .195 | * |
| Single-person household | 1.798 | .108 | *** |
| Single-parent household | 2.506 | .268 | *** |

| Unemployment Benefits | Odds ratio | St.Err. | Sig |
|---|---|---|---|
| Constant | .038 | .007 | *** |

| | | | |
|---|---|---|---|
| Mean dependent var | 0.038 | SD dependent var | 0.191 |
| Pseudo r-squared | 0.021 | Number of obs | 47,965 |
| Chi-square | 325.320 | Prob > chi2 | 0.000 |

**** p<.01, ** p<.05, * p<.1*

*6.3.2 Disability benefits*

The results from the binomial logistic regression on the changing likelihood of receiving disability benefits in the period after the WWB introduction, compared to the period before it, are presented in table 11.

The main odds ratio of interest in table 11 is the odds ratio of the variable "Period". This odds ratio is 0.801 ($p < 0.000$). This indicates that the likelihood of receiving disability benefits was 1.248 ( = 1 / 0.801) times smaller in the period after the WWB introduction, than it was in the period before the WWB introduction. Given the statistical significance of this odds ratio, we can conclude that there is, in fact, a decreased likelihood of receiving disability benefits in the period after the WWB introduction, compared to the period before it. These findings directly contradict the expectations set forth in the hypothesis. The null hypothesis can be rejected, in the sense that there is, in fact, a statistically significant difference in likelihood of receiving disability benefits after the WWB introduction, compared to the period before it. However, the alternative hypothesis must be revised since the opposite appears to be true. In other words, table 11 provides evidence that the introduction of the WWB is associated with a *decreased* likelihood to receive unemployment benefits or disability benefits.

**Table 11**

*Results of the Binomial Logistic Regression on the Odds Ratio of Receiving Disability Benefits Before and After the WWB Introduction*

| Disability benefits | Odds ratio | St.Err. | Sig |
|---|---|---|---|
| Period | .801 | .025 | *** |
| Sex | 1.007 | .029 | |
| Age | .995 | .001 | *** |
| Education | | | |
| (Continued) special education | 1.136 | .095 | |
| Lower secondary education | 1.708 | .118 | *** |
| Middle secondary education | 1.17 | .082 | ** |
| Higher secondary education | 1.09 | .083 | |
| University education | .444 | .04 | *** |
| Single-person household | 1.741 | .064 | *** |
| Single-parent household | 1.158 | .097 | * |
| Constant | .142 | .011 | *** |

| | | | |
|---|---|---|---|
| Mean dependent var | 0.119 | SD dependent var | 0.324 |
| Pseudo r-squared | 0.023 | Number of obs | 48,104 |
| Chi-square | 805.901 | Prob > chi2 | 0.000 |

**** p<.01, ** p<.05, * p<.1*

In table 12, more information is presented on the change in likelihood *per year*. The odds ratio of each year dummy is interpreted as the factor change in the odds of receiving disability benefits in the corresponding year, compared to the odds of receiving disability benefits in reference year 1994. This interpretation is the same as the previous interpretations.

Considering the odds ratios over the course of these twenty years, it appears that the highest odds ratio is valued at 1.052. All other odds ratios are lower than this value and are all even below 1. This means that, from 1995 until 2014, the likelihood of receiving disability benefits

was either equal to or lower than that same likelihood in 1994. These findings correspond relatively well with the downward trend of disability benefits take-up presented in figure 1. Between 1995 and 1999 and again from 2004 until 2014, the likelihood of receiving disability benefits was smaller than it was in 1994. The only trend break appears to exist in the years from 2000 until 2003. During these years, the odds were similar to the odds in 1994. During this period, the likelihood to receive disability benefits was similar to that same likelihood in 1994. Within the period between 2004 and 2014, a downward sloping trend of odds ratios appears to emerge from the data. From 2004 until 2009 the odds ratios, all below 1, grow smaller and smaller. In 2010, the odds ratios increase relative to the level of 2009 and remain around the same level until 2012. In 2013 the odds ratio goes down again and remains similar in 2014. Overall, it seems that the strongest decrease in likelihood of receiving disability benefits, compared to that likelihood in 1994, is measured between 2007 and 2014.

It appears that, generally speaking, the WWB introduction is not associated with an increased likelihood to receive disability benefits. Rather, the opposite appears to be true. Generally, the likelihood of receiving disability benefits vis-à-vis 1994 was smaller than for the period after the WWB introduction. In other words, there *is* evidence that could warrant the null hypothesis to be rejected, but the original alternative hypothesis is also proven incorrect. The introduction of the WWB is associated with a *decreased* likelihood to receive disability benefits.

**Table 12**

*Results of the Binomial Logistic Regression of the Effect of Year on the Odds Ratio of Receiving Disability Benefits in a Particular Year*

| Disability Benefits | Odds ratio | St.Err. | Sig. |
|---|---|---|---|
| Year | | | |
| 1995 | .790 | .048 | *** |
| 1996 | .743 | .048 | *** |
| 1997 | .588 | .042 | *** |
| 1998 | .673 | .053 | *** |
| 1999 | .690 | .056 | *** |
| 2000 | .994 | .098 | |
| 2001 | 1.052 | .079 | |
| 2002 | .948 | .071 | |
| 2003 | .978 | .073 | |
| 2004 | .885 | .069 | |
| 2005 | .815 | .064 | *** |
| 2006 | .731 | .060 | *** |
| 2007 | .641 | .056 | *** |
| 2008 | .611 | .056 | *** |
| 2009 | .513 | .050 | *** |
| 2010 | .645 | .058 | *** |
| 2011 | .632 | .059 | *** |
| 2012 | .655 | .059 | *** |
| 2013 | .577 | .054 | *** |
| 2014 | .588 | .052 | *** |
| Sex | 1.000 | .029 | |
| Age | .995 | .001 | *** |
| Education | | | |
| (Continued) special education | 1.191 | .100 | ** |
| Lower secondary education | 1.702 | .118 | *** |
| Middle secondary education | 1.149 | .081 | ** |
| Higher secondary education | 1.076 | .082 | |
| University education | .437 | .040 | *** |
| Single-person household | 1.724 | .064 | *** |
| Single-parent household | 1.172 | .099 | * |

| Disability Benefits | Odds ratio | St.Err. | Sig. |
|---|---|---|---|
| Constant | .168 | .015 | *** |
| Mean dependent var | 0.119 | SD dependent var | 0.324 |
| Pseudo r-squared | 0.027 | Number of obs | 48,104 |
| Chi-square | 957.503 | Prob > chi2 | 0.000 |

**** p<.01, ** p<.05, * p<.1*

### 6.4. Hypothesis 4

**Hypothesis 4:** The introduction of the WWB is associated with the strongest decrease of social assistance take-up among men, younger, higher educated people, single-person households, and single-parent households.

Finally, a linear probability model was run to analyse the fourth hypothesis. A linear probability model is the same as a simple regression model, the main difference being the fact that the dependent variable is a dummy variable. In terms of interpretation, this means that the $\beta$-coefficient does not indicate the change in the value of the dependent variable as a result of a one-unit change in the explanatory variable, but, rather, the change in the probability that the dependent variable equals 1 instead of 0.

The analysis of the fourth hypothesis required the use of interaction terms. To be more specific, in this analysis, the "period" dummy from the previous analyses was interacted with the control variables of the previous analyses. The dependent variable was whether or not someone received social assistance in a given year. The independent variables were the interaction terms of the year dummies with sex, age, level of education, being a single-person household and being a single-parent household. Moreover, as mentioned under header 6.1, data on social assistance take-up is missing for the year 2000. Therefore, the year 2000 has been excluded from this analysis.

The results from the linear probability model on the effect of the abovementioned five explanatory variables on the probability of receiving social assistance are presented in table 13. The F-test indicates overall statistical significance of the model ($p < 0.0000$). This suggests that the model used provides a better fit to the data than the null model does. From this, it can be concluded that the model yields a significant improvement in fit, relative to the null model.

The results of the analysis are presented in table 13. Given that the explanatory variables are interaction terms, the different main effects have been presented as well. These main effects do not lie at the core of this analysis, but they are required to provide insight into the total effect of the variable. After all, the total effect can be calculated by adding up the main effect and the interaction effect. Given the multitude of independent variables, using twenty different year dummies has proven rather extensive and complex to interpret. In the interest of manageable interpretation for the reader, the period dummy, rather than twenty independent year dummies,

has been used to create the interaction terms. Below, the main effect and the interaction effect for each of the five explanatory variables are discussed.

### *6.4.1 Sex*

The main effect of the dummy variable sex, which is coded as 1 for males and 2 for females, is 0.009 ($p < 0.000$). This means that a one-unit increase in the explanatory variable, i.e. being a female rather than a male, leads to an increase in probability to receive social assistance by 0.9 percentage points. Subsequently, the interaction term provides the change in probability *on top of* that main effect. This means that being a female in the period after the WWB introduction is associated with a -0.003 ($p = 0.048$) change in probability from the reference category of being a male. Adding this negative interaction effect to the main effect yields a total effect of 0.006. This means that, after the introduction of the WWB, the probability for females to receive social assistance was 0.6 percentage points higher than for men before the WWB introduction. In other words, after the introduction of the WWB, women had a somewhat larger chance to receive social assistance.

However, before the introduction of the WWB, this was already the case, only the difference between men and women was larger. Translating this to the hypothesis, makes it apparent that, given the statistically significant, negative interaction effect, women are most strongly affected by the introduction of the WWB. Women benefited relatively more from the policy introduction. After all, in the period after the WWB introduction, the probability for women of receiving social assistance decreased relatively more strongly than it did for men. For this part of the hypothesis, the null hypothesis can be rejected, but it also appears that the findings contradict the proposed alternative hypothesis. Between men and women, the WWB introduction has had the strongest effect on women.

### *6.4.2 Age*

Age, being a continuous variable rather than a dummy, requires a slightly different interpretation. For this variable, the coefficient indicates the effect of a one-unit increase, i.e. being one year older, on the probability of receiving social assistance. According to the main effect of -0.000036, a one-year increase in age is associated with a probability of receiving social assistance being 0.0036 percentage point lower. This main effect, however, is not significant ($p = 0.359$). This means that age, by itself, does not have any significant effects on

the probability of receiving social assistance. On top of that, the interaction term is, firstly, negligibly small and, secondly, statistically not significant.
In conclusion, be it taken as a main effect on its own, or as part of an interaction term, age cannot be said to have a significant impact on the probability of receiving social assistance. This (part of the) null hypothesis cannot be rejected.

### *6.4.3 Level of education*

The categorical variable indicating an individual's level of education consists of six categories, none of which appear to be statistically significant. Although the variable "Education" is an ordinal variable, there is some sense of direction that can be deduced from the way the categories are coded. The higher the number associated with a category, the higher an individual's level of education. The reference category is "Kindergarten/primary education", i.e. the lowest level of education completed. Intuitively, then, it seems right that, for each of the five other categories, all statistically significant coefficients are negative, indicating a lower probability of receiving social assistance when someone has completed more than the minimum level of education.

Of all five categories, the only statistically significant main effect is that of "Middle secondary education". Having completed middle secondary education as the highest level of education reduces the probability of receiving social assistance by 0.5 percentage points ($p = 0.035$).

All interaction effect, however, *are* statistically significant. Thus, we can conclude that there is, in fact a difference between the effects of education on the probability of receiving social assistance before and after the WWB introduction.
Having completed (continued) special education after 2004 is associated with a 3.1 percentage point decrease in probability of receiving social assistance ($p = 0.021$). Having completed lower secondary education after 2004 is associated with a 3.1 percentage point decrease in probability of receiving social assistance ($p < 0.000$). Having completed middle secondary education after 2004 is associated with a 2.4 percentage point decrease in probability of receiving social assistance ($p < 0.000$). Having completed higher secondary education after 2004 is associated with a 2.5 percentage point decrease in probability of receiving social assistance ($p < 0.000$) and having finished university education after 2004 yields a decrease in probability of receiving social assistance by 2.1 percentage points ($p < 0.000$).

One thing should become clear from these interaction effects: having completed a level of education higher than kindergarten/primary school is associated with a decrease of probability of receiving social assistance. In the strict sense, this (part of the) null hypothesis can be rejected. After all, those who were, after the introduction of the WWB, more highly educated than the minimum level of education, had a lower probability of receiving social assistance. What *cannot* be concluded, however, is that one's probability of receiving social assistance decreases further as one has completed a higher level of education. Rather the opposite appears to be true: the higher the level of education completed, the smaller the reduction in probability of receiving social assistance.

In conclusion, being educated is associated with a statistically significant reduction of the probability of receiving social assistance. Those who are educated above the minimum level are affected most strongly by the WWB introduction. Becoming *more* educated, however, does not help to further decrease the probability of receiving social assistance.

*6.4.4 Single-person household*

From the results table, it appears that the main effect of being a single-person household is a coefficient of 0.026 ($p < 0.000$), indicating that the probability of receiving social assistance is 2.6 percentage points higher for single-person households than it is for other types of households. The interaction effect of being a single-person household is -0.005 ($p = 0.062$). This interaction effect does not exceed the threshold of $p < 0.05$. This means that this interaction effect cannot be said to be statistically significant. Given the fact that the 0.05 threshold was missed narrowly, the total effect can still briefly be mentioned. Being a single-person household after the WWB introduction was associated with a 2.1 percentage point increase of probability of receiving social assistance.

Nevertheless, given the p-value, it is not possible to reject (this part of) the null hypothesis at this point. Although it does appear that being a single-person household can be an explanatory factor in explaining one's probability to receive social assistance, the WWB cannot be said to have made any measurable impact in this probability.

*6.4.5 Single-parent household*

The main effect of being a single-parent household is a coefficient of 0.155 ($p < 0.000$). This indicates that being a single-parent household increases the probability of receiving social assistance by 15.5 percentage points, compared to other household types. From the interaction effect, it appears that the introduction of the WWB is associated with a relatively strong decrease in probability. The probability of receiving social assistance as a single-parent household was 7.4 percentage points lower in the period after the WWB introduction ($p < 0.000$). This statistical significance indicates that there is evidence that the introduction of the WWB has had an effect on single-parents households' probability of receiving social assistance.

Added up, single-parent households after the WWB introduction had a probability of receiving social assistance of 8.1 percentage points higher, compared to other types of households before the WWB introduction. The introduction of the WWB decreased the difference between single-parent households and other types of households by 7.4 percentage points. Translating this to the hypothesis, we can conclude that between single-parent households and other types of households, the strongest decrease in probability of social assistance take-up was among single-parent households. This indicates that the null hypothesis can be rejected, and that there is evidence to support the alternative hypothesis.

**Table 13**

*Results of the Linear Probability Model on the Effect of Personal and Household Characteristics on Social Assistance Take-Up Before and After the WWB Introduction*

| Social assistance | Coef. | St.Err. | Sig |
|---|---|---|---|
| Period | .026 | .005 | *** |
| Sex | .009 | .001 | *** |
| (Period * Sex) | -.003 | .002 | ** |
| Age | -0.000036 | 0.000039 | |
| (Period * Age) | $-5.81^{-6}$ | 0.00006 | |
| Education | | | |
| (Continued) special education | -.002 | .003 | |
| Lower secondary education | .002 | .002 | |
| Middle secondary education | -.005 | .002 | ** |
| Higher secondary education | -.002 | .003 | |
| University education | -.002 | .003 | |
| (Period * (Continued) special education) | -.031 | .013 | ** |
| (Period * Lower secondary education) | -.031 | .004 | *** |
| (Period * Middle secondary education) | -.024 | .004 | *** |
| (Period * Higher secondary education) | -.025 | .005 | *** |
| (Period * University education) | -.021 | .005 | *** |
| Single-person household | .026 | .002 | *** |
| (Period * SinglePerson household) | -.005 | .002 | * |
| Single-parent household | .155 | .004 | *** |
| (Period * Single-parent household) | -.074 | .005 | *** |

| Social assistance | | Coef. | St.Err. | Sig |
|---|---|---|---|---|
| Constant | | .002 | .003 | |
| Mean dependent var | 0.009 | SD dependent var | | 0.096 |
| R-squared | 0.057 | Number of obs | | 47,679 |
| F-test | 152.555 | Prob > F | | 0.000 |

**** p<.01, ** p<.05, * p<.1*

# 7. Discussion

The goal of this research has been to examine the effects of the Dutch social assistance act, the Wet Werk en Bijstand (WWB). The overarching research question has been as follows: *"What is the effect of the introduction of the Wet Werk en Bijstand (WWB) on households' take-up of Dutch welfare benefits schemes?"*. The answer to this question, has been split up into the analysis of four hypotheses.

## 7.1 Key findings

It was found that the introduction of the WWB is associated with a decreased likelihood of receiving social assistance. However, it remained unclear whether those people leaving social assistance actually managed to (re-)join the labour market. The same was true for the likelihood of receiving unemployment benefits in the face of the WWB introduction: no significant correlation was found that pointed in the direction of spillover from social assistance into unemployment benefits. What did become apparent, however, was the fact that the WWB introduction is associated with a decreased likelihood to receive disability benefits. In other words, no evidence for spillover from social assistance into disability benefits was found here, either. Finally, it was found that the introduction of the WWB was associated with the strongest decrease in take-up of social assistance among women, people with a higher than minimal level of education, and single-parent households.

## 7.2 Interpretation of results

### *7.2.1 Social assistance take-up*

From hypothesis 1, it followed that a statistically significant correlation can be perceived between the introduction of the WWB and the decrease in likelihood of receiving social assistance. In the period after the WWB introduction, the likelihood of receiving social assistance is 1.45 times smaller than in the period before the WWB. This correlation is further substantiated by the year-by-year analysis that also shows a downward trend of this likelihood. In other words, as the WWB became more institutionalized into the social assistance apparatus, municipalities became increasingly efficient in helping to push people out of social assistance.

These findings are in line with what was expected from the WWB introduction, based on the literature available. The findings indicate that the switch from matching grants towards block grants, did, indeed incentivize municipalities to make their social assistance programmes more

efficient. After all, any money saved on social assistance spending could flow directly into the municipal treasury, while any social assistance expenditures exceeding the lump sum provided by national government were to be paid with municipal funds.
Making social assistance programmes more efficient meant putting more effort into keeping people from flowing into social assistance in the first place. On top of that, municipalities were pushed to help people who did enter social assistance to leave this last-resort welfare scheme as quickly as possible (Gruber, 2005; Edzes, 2010).

The findings also support the literature by Edzes (2010) and Moes and Westerhof (2006), which states that the increased efficiency of municipal social assistance programmes also required more effort from social assistance recipients. Not only did these stringent job-search requirements help social assistance recipients to find a new job more quickly, but they also deterred potential recipients from entering the more demanding social assistance programme at all.

The results from this research do not substantiate the prediction by Bosselaar et al. (2007), that municipalities would first focus on realizing many 'quick gains', by putting the most effort into the most promising cases in terms of labour market (re-)entry. After all, if this were true, one would expect the largest decrease in likelihood of receiving social assistance shortly after the 2004 mark. These years of strongly decreased likelihoods would then be followed by years of stagnating likelihoods as all 'quick gains'-recipients had already left social assistance and municipal caseworkers turned to activating the more difficult-to-place social assistance recipients. From table 6, however, it appears that the decreased likelihoods of receiving social assistance follow a downward trend throughout all eleven years after the WWB introduction. Rather, the results from this hypothesis substantiate the claim by Kok et al. (2017) and by Bannink, Bosselaar and Trommel (2011) that the introduction of the WWB did not lead to any cream-skimming. It seems that Bannink, Bosselaar and Trommel (2011) were accurate in their statement that municipal caseworkers could use their discretionary power to decide if it would be more efficient, for each individual social assistance recipient, be they easy or difficult to place, to join a job training programme, rather than immediately seeking to re-join the labour market.

Moreover, evidence seems to substantiate the idea that municipalities adapted their social assistance programmes in two main ways. First, social assistance programmes were made more

demanding, in order to deter influx into the programme in the first place. Second, supervision of social assistance recipients was revised, either by hiring private partners to make the process of finding work more efficient (Bruttel & Sol, 2006); or by increasing municipal caseworker involvement to make the process of finding work more tailor-made (Bannink, Bosselaar, & Trommel, 2011).

Intuitively, both approaches may have helped to increase people's odds of leaving social assistance. However, the data used in this research does not allow for such in-depth analysis of the new municipal approach of social assistance programmes. Now that it has become clear that the WWB has, indeed, led to a decrease in take-up of social assistance, it may be worthwhile to investigate which of the abovementioned actions undertaken by municipalities proved most effective.

### *7.2.2 Employment*

Although it can be concluded from the results that the WWB is associated with a decreased likelihood of social assistance take-up, it does not yet yield information on where those leaving social assistance end up. Following the available literature, the most plausible destinations of people flowing out of social assistance have been examined. The first, intuitively most likely place to end up after leaving social assistance, is the labour market. The likelihood of being employed after the WWB introduction has been examined in hypothesis 2.

Information on the likelihood of being employed between 1994 and 2014 is provided in tables 7 and 8. Table 7 shows that the period after the WWB introduction is associated with a likelihood of being employed that is 1.036 times larger than in the period before the WWB introduction. This increase in likelihood may be small, but it is there, and it is significant. However, turning to table 8, it appears that it may be too ambitious to argue that the WWB has had a significant effect on odds of employment by itself. The highest peak in terms of increased likelihood of being employed occurs in 2000, whereas in the years following 2004, that same likelihood remains largely the same and even grows smaller after 2009. The statistically significant difference between the periods before and after the WWB can be attributed to the relatively low odds ratios before the year 2000. Closer to the 2004 mark, however, little evidence can be found of an increased likelihood of being employed.

These findings are surprising, given the neoliberal focus on the work-first approach and the specifically Dutch "work over income" adage (Bosselaar, Bannink, Van Deursen, & Trommel, 2007; Ridzi, 2009). One would expect that, if a government makes a push to decrease social assistance take-up, the intended result would be that the odds of being employed go up. After all, pushing more people into the labour force not only pushes down the costs of welfare benefits schemes, but it also yields more tax revenue. Despite all this, the data show no evidence that this goal has actually been attained. This raises two questions: (1) Why did the odds of being employed not go up after the WWB introduction; and (2) where did those leaving social assistance go, if they did not end up in the labour force?

There may be a myriad of answers to the first question. In an attempt to answer this question, the 2008 financial crisis comes to mind. After all, as can be seen in figure 3, the employment rate in the Netherlands took a serious hit in 2008 and in the years after. The financial crisis of 2008 may be one influential factor in explaining the decreasing employment rate from that year onwards. Given the scale and impact of this financial crisis, it is possible that it contributes to muddying the analysis of the effect that the WWB has had on employment. It may even be possible that the existence of the WWB has helped mitigate the loss of employment in the face of this financial crisis. This would also explain why the spike in unemployment rate as seen in figure 3 is not reflected in the results from table 8.
Another possible explanation may be that the people leaving social assistance had entirely different reasons for leaving it that had nothing to do with (re-)entering the labour force. It may be that some of them met someone who was willing to take care of them financially, it may be that some left the Netherlands to live somewhere else, it may even be that some people retired, died or were arrested and were forced to serve time in jail. All these factors are alternative explanations for why people would no longer be eligible for social assistance, despite the fact that they have not found a job (Rijksoverheid, n.d.-e). Bannink, Bosselaar, and Trommel (2011) consider these same reasons as potential explanatory factors for outflow from the WWB up until the year 2006. They, too, cannot fully explain all outflow from social assistance and indicate that the reason behind around 25% of this outflow is still unknown.

Another explanation may be the fact that social assistance recipients did not move away from the social assistance benefits scheme because they had found a job, but because they found the efforts required from them to be eligible for social assistance too demanding. Rather than jumping through the many new hoops raised by the WWB, they applied for different welfare

benefits schemes that were more readily accessible to them. This explanation is in line with the findings of Staubli and Zweimüller (2013), who found that a policy aimed at increasing labour force, by heightening the legal retirement age, did not work out as intended. Rather than delaying their retirement, many older workers would retire through different routes, for example by entering different welfare programmes, such as unemployment or disability benefits. This latter explanation may be an answer to the second question asked in the paragraph above. In order to test this notion, the third hypothesis was tested.

*7.2.3 Spillover into unemployment or disability benefits*

Rather than entering the labour market it may very well be that those who leave social assistance, instead, enter a different welfare benefits scheme. This is what has been tested in hypothesis 3. Following the literature and intuition, the most likely welfare benefits schemes to spillover into are the unemployment and the disability benefits schemes.

It has been hypothesized that the introduction of the WWB was associated with an increased likelihood to receive unemployment or disability benefits. This, on both accounts, did not appear to be true. The data presented in table 9 and 10 did not indicate that the introduction of the WWB in 2004 was associated with an increased likelihood to receive unemployment assistance. Barely any correlation between the WWB introduction and unemployment benefits take-up was found. A correlation *was* found between the WWB introduction and disability benefits, but it appeared that this correlation pointed towards a *decrease* in likelihood of receiving disability benefits, rather than an increase.

These findings are remarkable, given the report by Bosselaar et al. (2007), who *did* find that people leaving social assistance would spillover into either Dutch unemployment benefits (WW) or into one of the Dutch disability benefits, Wajong. However, the contradictory findings between the report by Bosselaar et al. and this research do not necessarily mean that either one is wrong. In fact, the findings in this report directly substantiate the findings by Bosselaar et al. on (the likelihood of) unemployment benefits take-up. The report, that was published in 2007, has found evidence for spillover from social assistance into the WW. Looking at table 10, it appears that the likelihood of receiving unemployment benefits compared to that likelihood in 1994 is relatively high for the years 2004, 2005 and 2006. From

2007 on, however, these odds ratios decrease strongly, indicating the absence of proof of any further spillover from social assistance into unemployment benefits from that year onwards.

Regarding disability benefits, the seemingly contradictory findings are still reconcilable, as well. After all, this research has found that the likelihood of receiving disability benefits decreased between 2004 and 2006. However, this analysis includes all Dutch disability benefits, among which are the Wajong, the disability insurance act (WAO/WIA) and the general disability benefits act (AAW/WAZ). Bosselaar et al. (2007), however, only focused on the Wajong. When discussing these findings in the literature review section of this document, it was reasoned that, if Wajong attracted spillover from social assistance recipients, then the same could reasonably be expected to be true for the other types of disability benefits. The contradictory results described above have proven this expectation to be untrue.

This new insight may be valuable for setting up future research, but also for improving already existent literature. After all, as discussed in the literature review section, Kok et al. (2017), Bannink, Bosselaar and Trommel (2011), and even the CBS report by Dräbing, Van Koperen, and Molenaar-Cox (2017), all group together the multiple disability benefits and treat them as one. These authors have done this, because they assume, as was done in this research, that the multiple disability benefits are largely similar and follow generally the same patterns. I argue that, based on the report by Bosselaar et al. (2007) and on the contra-intuitive findings of this research, this grouping of disability benefits hides important differences among them and, thus, weakens the validity of any research that assumes this similarity vis-à-vis the WWB introduction.

In conclusion, it may be worthwhile to examine the correlation between the WWB introduction and the Wajong on its own. It may very well be that, without the other disability benefits, the WWB introduction is associated with an increased likelihood to receive Wajong.

### *7.2.4 Individual and household characteristics*

Finally, this research analyses the effect that the introduction of the WWB has had on different types of individuals and households. The factors of analysis were sex, age, level of education, being a single-person household and being a single-parent household.

Regarding an individual's sex, it appeared that women were affected the most by the introduction of the WWB, in the sense that the probability of receiving social assistance decreased more strongly for women than for men. It was found that, in the period before the WWB introduction, women were 0.9 percentage points more likely to receive social assistance than men. In the period after the WWB introduction, this difference had gone down by 0.3 percentage points. From a strictly statistical point of view, men still had the lowest probability to receive social assistance in the period after the WWB introduction. However, looking at it with a broader perspective, it becomes clear that the WWB is also associated with a decrease in the gap of probability between men and women. In other words, women were most strongly affected by the WWB introduction.

These findings are remarkable in the context of the report by Bosselaar et al. (2007), who find that the greatest decline of overall social assistance recipiency can be perceived among men. These two seemingly differing findings, however, are not contradictory. After all, Bosselaar et al. talk about absolute decrease of take-up, while this research has measured the effect of the WWB in terms of probability to receive social assistance. As was also stated by Bosselaar et al., it is often the man of the household who applies for social assistance. This results in a situation where many men are registered as social assistance recipients, relative to women. This, in turn, means two things. First of all, following probability theory, a higher absolute number of registered male recipients also allows for a higher absolute number of men leaving social assistance. Second, a small absolute number of registered women recipients inflates the effect of women leaving social assistance in terms of relative take-up numbers.

Regarding age, the findings presented in table 13 does not allow for the rejection of the hypothesis on that subject. These findings, too, can be reconciled with the findings of the preliminary research conducted by Bosselaar et al. (2007). The report found that, as a result of the WWB, fewer young people would flow into social assistance and more older people left social assistance. A reduction in inflow and an increase in outflow, however, affect an age group's probability of receiving social assistance in the same way: the probability goes down for all groups. These two processes, thus, effectively cancel each other out, which is highly likely to be the main reason behind the absence of any statistically significant effect of age on the probability of social assistance take-up.

Regarding the third, factor, education, the null hypothesis could be rejected. It appeared that all levels of education above the minimum level of education yielded a statistically significant lower probability of receiving social assistance. However, different than one might expect, these probabilities did not follow a declining trend. In other words, completing the second lowest level of education decreased one's probability of receiving social assistance significantly, but completing any higher level of education did very little to further reduce this probability. These findings fit with the results from the article by Bannink, Bosselaar, and Trommel (2011), who found that an area with a relatively high prevalence of low-educated people generally also showed relatively high levels of social assistance take-up.

The findings do not completely fit the intuitive line of reasoning that was presented in the literature review section. Here, it was assumed that a higher level of education would be associated with a lower probability of receiving social assistance. This was only proven true for the two lowest levels of education completed. After completing the second lowest level of education, the probability of receiving social assistance remained at a similar level for all other types of education. An explanation for this may be that a main factor determining one's chances to receive social assistance is whether or not someone has been taught the skills needed for being hired for a job. The type of job is not relevant, here. What matters is the fact that someone's skills match that particular job. After all, there are jobs available for every level of education, but all jobs require at least some minimal level of training.
An implication of this finding is that policies such as the WWB may help those with a higher than minimal level of education but fail to affect those with the lowest level of education. It may be worthwhile to try and find out why this is. Doing so may help create labour and welfare policies that are better equipped for targeting this latter group specifically.

This research did not find evidence to substantiate the claim that the WWB explicitly affected single-person households. The combination of a low interaction effect and statistical non-significance make it difficult to draw any conclusions from these particular findings.
What did become clear, however, is the fact that the introduction of the WWB was associated with a strong decrease in the probability of receiving social assistance for single-parent households.

This remarkably strong association builds upon the results put forth by Bosselaar et al. (2007) and Kok et al. (2017). Given the results from this analysis, as well as the findings in the pre-

existing literature, it seems increasingly safe to say that the WWB has had a serious effect on the outflow of single-parent households. Kok et al. have found that the decrease in social assistance take-up in the period after the WWB introduction was strongest for those groups with the highest initial dependency upon social assistance. In other words, those groups with the largest share of social assistance recipients have experienced the largest outflow from social assistance. These findings imply that municipalities have targeted these groups as well. This, in turn, further substantiates the claim by Kok et al. (2017) and Bannink, Bosselaar, and Trommel (2011), who conclude in their respective analyses that cream-skimming has not occurred. It appears that the concerns put forth by Bruttel and Sol (2006) and the European Commission (2004) did not become reality. Municipalities did not necessarily focus on 'quick gains', but instead also assisted those difficult-to-place recipients.

What is remarkable about the abovementioned results, is that single-parent households were strongly affected by the WWB while single-person households were not, despite the fact that both household types are identified by Kok et al. (2017) and Bosselaar et al. (2007) to be relatively highly welfare-dependent. The reason for this remains unclear. One possible explanation is that single-person households are relatively often social assistance recipients by choice, meaning that they can less easily be activated to find a job. However, this explanation is purely speculative.

Another important insight that can be derived from these findings is the notion that a less generous social assistance scheme can still be able to improve the economic position of the most welfare-dependent groups. In order to improve future welfare policies, it may be worthwhile to investigate the WWB from the inside, so as to see what exactly municipalities and caseworkers did that helped realize this significant decrease in (probability of) take-up among highly welfare-dependent groups such as single-parent households.

### 7.3 Implications and recommendations

One conclusion that can be drawn from this research is the observation that the main goal of the WWB has been achieved, in the sense that it has proven effective in pushing people out of social assistance. First of all, then, it could prove valuable to dissect the total package of actions undertaken by municipalities as a result of the WWB, and to analyse which of these actions

were most effective at reducing the total social assistance caseload. Gaining insight into the most effective courses of action can help improve welfare state policies in the future.

Moreover, this research found no convincing evidence of either an increase in the likelihood of being employed or in the likelihood of receiving unemployment or disability benefits. This begs the question where those people leaving social assistance *did* end up. The findings of this research point towards Wajong specifically as being an important destination for those who leave social assistance. However, this singular disability benefit cannot possibly account for all outflow from social assistance.
So far, no report or study has been able to account for the complete outflow from social assistance. Different academic sources all discuss a different aspect of this outflow, but none, including this research, can provide a full image of it. Studying this may require a more qualitative approach, where individual social assistance recipients are being observed closely, in order to find out where people go after leaving social assistance. Doing so will allow for improved future welfare policies that are better equipped to push former social assistance recipients in (or away from) a specific direction.

Finally, an important conclusion from this research was that the WWB did not lead to cream-skimming practices among municipal social assistance caseworkers. Since cream-skimming is generally a practice that welfare policies aim to avoid, the WWB can be seen as a potential opportunity from which lessons can be derived. It can prove valuable to understand in what way the WWB discouraged cream-skimming. However, it can still not be concluded that the WWB approach was perfect in every sense and completely free from cream-skimming. After all, it was also found in this research that the least-educated people were relatively less affected by the introduction of the WWB than people with higher levels of education. The reasons behind this may be manifold, but it is important to check for cream-skimming regarding this demographic group, as well.

### 7.4 Limitations

This research has provided information on the effect of the WWB on multiple fronts. Many factors, however, have not yet been evaluated in the light of the introduction of the WWB. For example, it would be interesting to also examine individual characteristics such as country of origin, the amount of time someone has already been in social assistance, marital status, number

of children, and whether the respondent lives in an urban area or not. The combination of relative scarcity of available literature, the information available in the dataset and the scope of this research did not yet allow for an analysis of these factors. Nevertheless, it is important to keep these factors in mind as having potential explanatory value and it would be interesting for future research to incorporate these factors into the analysis.

Regarding the statistical analysis, several limitations must be acknowledged. First of all, it can be argued that the choice for 1994 to be the reference year is arbitrary. In this research, it was reasoned that an investigation of the full 11-year lifespan of the WWB required a comparison of two periods: before and after the policy introduction. These two periods, then, should consist of roughly the same amount of years.

As an extension of this critique, it can also be argued that this research evaluates such a large timespan, that the actual, direct effects of the WWB become clouded by the many other influential events that occurred between 1994 and 2014. This interference of other factors can be said to muddy the analysis. This proved to be the case for the analysis of the likelihood of being employed, as well as for the likelihood of receiving unemployment benefits. Regarding the likelihood of being employed, a statistical correlation could only be found in the analysis of the entire period from 1994 until 2014. However, zooming in more closely to the 2004 mark, it appeared that no real correlation could be assumed between the WWB introduction and the likelihood of being employed.
The opposite was true for the likelihood of receiving unemployment benefits. Here, no significant correlation could be deduced over the entire period from 1994 – 2014 but zooming in on the several years closer to the 2004 cut-off yielded different and significant. In other words, although the aim of this research has been to provide a complete overview of the trends associated with the full lifespan of the WWB, analysing fewer years closer to the 2004 mark might have yielded more valid results.

Another reservation about the statistical analysis must be acknowledged. For the first three hypotheses, two equations were used. One of these two used a period dummy to indicate whether the analysis dealt with the period before or after the introduction of the WWB. This type of statistical analysis is, essentially, a regression discontinuity model. The issue with this is the fact that the two groups being compared, i.e. the group of people before the WWB introduction and the group of people after the WWB introduction, cannot reasonably be

assumed to be the same. They can barely be assumed to be similar. Therefore, performing a regression discontinuity proved problematic. I have attempted to mitigate the negative effects of this by also running the same binomial logistic regression analysis with year dummies as the main explanatory variable, rather than the period dummy. Nevertheless, it is important to be aware of this shortcoming.

The final limitation concerns the application of the linear probability model for the fourth hypothesis. Seeing as this model is intended to measure probabilities, it should be impossible for either the coefficient or the confidence intervals to be below 0 or above 1. An inherent shortcoming of the linear probability model, however, is that it *does* allow for these impossible values. For this reason, less attention has been given to the p-value of each individual interaction term. Rather, the fit of the model as a whole, and to some extent the statistical significance of the main effects have been the main method of identifying explanatory value. Being aware of the shortcomings of this statistical method helps to understand the findings of this research in their entirety.

# 8. Conclusion

This research has been concentrated around the question "*What is the effect of the introduction of the Wet Werk en Bijstand (WWB) on households' take-up of Dutch welfare benefits schemes?*". The concept "*welfare benefits schemes*" is understood to comprise three distinct categories of welfare benefits: social assistance, unemployment benefits, and unemployment benefits. Seeing as the WWB was introduced to revise and improve Dutch social assistance, specifically, most attention has been paid to this particular welfare benefits scheme.

The 1980's in the Western world were marked by a paradigm shift towards neoliberalism. This paradigm change called for increased efficiency regarding welfare benefits schemes (Ridzi, 2009). The goal was to push people out of welfare benefits schemes and into the labour force as quickly and as cheaply as possible. From the mid-1990's onwards, Dutch politics became imbued with this neoliberalist way of thinking (Bruttel and Sol, 2006). Where Dutch welfare politics had traditionally been centred around income protection, the political focus shifted towards labour activation. Under the adage "work over income", Dutch welfare benefits became less generous and less readily accessible, thereby encouraging people to remain in or re-enter the labour force (Bannink, Bosselaar, & Trommel, 2011). Ultimately, this political shift was translated to a policy shift with the introduction of the WWB in 2004.

The implementation of the WWB was the Dutch interpretation of a broader Western paradigm shift, that had far-reaching impact on the design of Dutch welfare benefits schemes. On top of this, literature surrounding the WWB was relatively scarce, especially as regards an analysis over the course of the entire lifespan of the policy. For these reasons, it appeared worthwhile to assess the micro-level effects of this particular policy.

In order to answer the research question, this research has been split up into the analysis of four distinct hypotheses. In the first hypothesis, it was checked if the WWB realized what it was intended to do: reducing the likelihood that someone would receive social assistance. This research found evidence that the period after the WWB was, indeed associated with a decreased likelihood of receiving social assistance. This indicated that the WWB had indeed been effective in terms of realizing the intended goals of the policy.

These findings raised the question of where people would actually end up, after they had left social assistance. It was derived that former social assistance recipients were most likely to either flow (back) into the labour force, or to spillover into unemployment or disability benefits.

The second hypothesis tested if the period after the WWB introduction was associated with an increased likelihood that people would be employed. The results indicated that the effect of the WWB on the likelihood to be employed was very small and this effect even disappeared when zooming in to the years closest to the 2004 mark.

The third hypothesis checked the degree of spillover from WWB into the unemployment or disability benefits schemes, by examining the change in likelihood to receive unemployment of disability benefits after the WWB introduction. The expectation was that the WWB would be associated with an increased likelihood of receiving unemployment benefits, disability benefits, or even both. It was found, however, that the WWB introduction was *not* associated with a change in likelihood of receiving unemployment benefits. On top of that, the WWB introduction appeared to be associated with a *decreased* likelihood of receiving disability benefits. These findings thus did not help to explain the perceived outflow from social assistance after the introduction of the WWB.

Seeing as these unexpected results were unable to account for the decrease in social assistance take-up, existent literature and general insights from this research were combined to hypothesize several alternative explanations. Among these explanations are spillover into the Wajong specifically, rather than into all disability benefits combined. However, future research should be conducted to confirm this and to identify more factors that can explain where former social assistance recipients end up.

Finally, the fourth hypothesis examined the effects that the WWB introduction had had on individuals and households with different characteristics. Differences in social assistance take-up were analysed for the variables sex, age, level of education, and being a single-person or single-parent household. The most important conclusion that could be derived from this analysis was that the introduction of the WWB is associated with the strongest decrease of social assistance take-up among women, people who have completed a higher-than-minimal level of education, and single-parents.

The findings that the gaps in probability of receiving social assistance between men and women and between single-parent households and other types of households had decreased as a result of the WWB introduction, imply that no cream-skimming has occurred in the period after 2004. Rather, the relative position of women and single-parent households improved after the WWB introduction.

All in all, this research has analysed the effects of the neoliberal reform of Dutch social assistance. Although the policy reform has been found to be effective in terms of reducing overall social assistance take-up, especially among women and single parents, neither pre-existing literature, nor this research has yet been able to provide a complete image of where former social assistance recipients end up. While this is yet to be investigated, this research has contributed to the discourse around Western welfare state policies in general and to the Dutch social assistance policy, specifically. Among other things, it was found that reform towards a less generous social assistance scheme can still bring about an improved economic position for even the most difficult-to-place demographic groups. An ever-improving understanding of welfare state policies and benefits schemes has contributed to this and other triumphs associated with the Dutch Wet Werk en Bijstand, and the ongoing discovery of new insights is sure to inspire the improvement of many welfare state policies to come.

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# 10. Appendices

## 10.1 Appendix A

**Results table of a Pearson's correlation testing for multicollinearity**

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| (1) SocAss | 1.000 | | | | | | | | | |
| (2) DisBen | -0.015 | 1.000 | | | | | | | | |
| (3) WW | 0.049 | 0.043 | 1.000 | | | | | | | |
| (4) Employed | -0.076 | 0.003 | -0.034 | 1.000 | | | | | | |
| (5) Year | -0.009 | -0.036 | -0.003 | 0.045 | 1.000 | | | | | |
| (6) Sex | 0.060 | 0.006 | -0.016 | -0.187 | 0.020 | 1.000 | | | | |
| (7) Age | -0.023 | -0.021 | -0.016 | -0.154 | 0.122 | -0.020 | 1.000 | | | |
| (8) Education | -0.018 | -0.059 | 0.001 | 0.232 | 0.120 | -0.081 | 0.069 | 1.000 | | |
| (9) SinglePersonhh | 0.074 | 0.053 | 0.038 | 0.038 | 0.030 | -0.013 | 0.099 | 0.110 | 1.000 | |
| (10) SingleParenthh | 0.209 | 0.004 | 0.035 | -0.035 | 0.011 | 0.049 | -0.110 | -0.043 | -0.062 | 1.000 |

## 10.2 Appendix B

### Joint significance test of the effect of year dummies on (1) social assistance take-up, (2) being employed; (3) unemployment benefits take-up; and (4) disability benefits take-up

**(1)**

```
( 1)  [SocAss]1995.year = 0
( 2)  [SocAss]1996.year = 0
( 3)  [SocAss]1997.year = 0
( 4)  [SocAss]1998.year = 0
( 5)  [SocAss]1999.year = 0
( 6)  [SocAss]2001.year = 0
( 7)  [SocAss]2002.year = 0
( 8)  [SocAss]2003.year = 0
( 9)  [SocAss]2004.year = 0
(10)  [SocAss]2005.year = 0
(11)  [SocAss]2006.year = 0
(12)  [SocAss]2007.year = 0
(13)  [SocAss]2008.year = 0
(14)  [SocAss]2009.year = 0
(15)  [SocAss]2010.year = 0
(16)  [SocAss]2011.year = 0
(17)  [SocAss]2012.year = 0
(18)  [SocAss]2013.year = 0
(19)  [SocAss]2014.year = 0

           chi2( 19) =   34.00
         Prob > chi2 =    0.0184
```

**(2)**

```
( 1)  [Employed]1995.year = 0
( 2)  [Employed]1996.year = 0
( 3)  [Employed]1997.year = 0
( 4)  [Employed]1998.year = 0
( 5)  [Employed]1999.year = 0
( 6)  [Employed]2000.year = 0
( 7)  [Employed]2001.year = 0
( 8)  [Employed]2002.year = 0
( 9)  [Employed]2003.year = 0
(10)  [Employed]2004.year = 0
(11)  [Employed]2005.year = 0
(12)  [Employed]2006.year = 0
(13)  [Employed]2007.year = 0
(14)  [Employed]2008.year = 0
(15)  [Employed]2009.year = 0
(16)  [Employed]2010.year = 0
(17)  [Employed]2011.year = 0
(18)  [Employed]2012.year = 0
(19)  [Employed]2013.year = 0
(20)  [Employed]2014.year = 0

           chi2( 20) =  250.90
         Prob > chi2 =    0.0000
```

**(3)**

```
( 1)  [WW]1995.year = 0
( 2)  [WW]1996.year = 0
( 3)  [WW]1997.year = 0
( 4)  [WW]1998.year = 0
( 5)  [WW]1999.year = 0
( 6)  [WW]2000.year = 0
( 7)  [WW]2001.year = 0
( 8)  [WW]2002.year = 0
( 9)  [WW]2003.year = 0
(10)  [WW]2004.year = 0
(11)  [WW]2005.year = 0
(12)  [WW]2006.year = 0
(13)  [WW]2007.year = 0
(14)  [WW]2008.year = 0
(15)  [WW]2009.year = 0
(16)  [WW]2010.year = 0
(17)  [WW]2011.year = 0
(18)  [WW]2012.year = 0
(19)  [WW]2013.year = 0
(20)  [WW]2014.year = 0

           chi2( 20) =  127.58
         Prob > chi2 =    0.0000
```

**(4)**

```
( 1)  [DisBen]1995.year = 0
( 2)  [DisBen]1996.year = 0
( 3)  [DisBen]1997.year = 0
( 4)  [DisBen]1998.year = 0
( 5)  [DisBen]1999.year = 0
( 6)  [DisBen]2000.year = 0
( 7)  [DisBen]2001.year = 0
( 8)  [DisBen]2002.year = 0
( 9)  [DisBen]2003.year = 0
(10)  [DisBen]2004.year = 0
(11)  [DisBen]2005.year = 0
(12)  [DisBen]2006.year = 0
(13)  [DisBen]2007.year = 0
(14)  [DisBen]2008.year = 0
(15)  [DisBen]2009.year = 0
(16)  [DisBen]2010.year = 0
(17)  [DisBen]2011.year = 0
(18)  [DisBen]2012.year = 0
(19)  [DisBen]2013.year = 0
(20)  [DisBen]2014.year = 0

           chi2( 20) =  202.93
         Prob > chi2 =    0.0000
```