

Disability benefits and employment of low-skilled youth: evidence from France

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Abstract: The French disability assistance program, called the allowance for disabled adults (in French the "Allocation aux Adultes Handicapés", AAH), is a minimum social benefit that ensures a minimum income for persons with disabilities under certain conditions. It has the particularity of not having a notch, so that every additional euro of income from work leads to an increase in total income. Using the French Labor Force Survey from 2013 to 2019, we exploit the young age discontinuity in the AAH eligibility to instrument the effect of the allowance on employment using a fuzzy regression discontinuity design (RDD). Our study shows that receipt of the AAH reduces the probability of employment for low-skilled youth with disabilities. However, this effect is heterogeneous: it affects more women than men and is larger for those with a low activity limitation than those with a high activity limitation. We also find that for women who are employed, the receipt of these benefits increases the chances of having a precarious contract and working part-time. Our results suggest that more targeted employment incentive public policies would be needed to promote the employment of low-skilled youth disability benefit recipients.

Key words: regression discontinuity design; disability benefits; employment; low-skilled youth with disabilities

JEL classification: H53; I12; J22

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1 Introduction

Persons with disabilities are more likely to suffer from poverty and be economically vulnerable ([United Nations, 2019](#)). Their impairment and environment can hinder access to or retention in employment, and thus deprive them of a (sufficient) income from work. This justifies the need for specific social protection measures for them. The 1948 Universal Declaration of Human Rights, the 1966 International Covenant on Economic, Social and Cultural Rights and the 2008 United Nations Convention on the Rights of Persons with Disabilities recognize their right to social protection.

Disability benefits are among the social protection programs that address this need, motivated by equity and solidarity. They aim to limit the financial consequences of disability by ensuring a minimum of resources for persons with disabilities and improving their well-being. Their amount is generally lower than the average wage of a full-time employee, old-age pensions and unemployment benefits. Unlike most minimum social benefits, they are paid to people who are not always able to work, as disability can by nature lead to a limitation of activity. In European Union member States, disability benefits represented in 2018 7.6% of the total spent on social protection benefits (stable since 2010), making it one of the most important social protection programs¹ (Eurostat, 2020).

The number of countries with a disability benefits program has steadily increased since the 1960s. According to the [International Labour Organization \(2014\)](#), 168 countries out of 183 (or 92%) surveyed in 2012-2013 have a disability benefits scheme anchored in national legislation. While most of these schemes are contributory, some are non-contributory (means-tested, or universal) or even mixed, combining contributory and non-contributory schemes. The complexity of disability benefits, therefore, is to find the balance between providing persons with disabilities the security of a minimum income and not creating an inactivity trap. However, the trade-off between income from work and income from disability benefits is limited to those whose ability to work is reduced but not totally lost: severely persons with disabilities would not respond to financial incentives since they do not have access to labor market income ([Hanel, 2012](#); [Maestas et al., 2013](#)).

In recent years, the issue of work disincentives associated with disability benefits programs

¹In the European Union in 2017, the social protection expenditures accounted for 28.1% of the GDP (Eurostat, 2020).

has been more salient with the increase in the proportion of less physically demanding jobs ([Autor et al., 2003](#)) and the creation of new employment protections for workers with disabilities (e.g., requirements to hire a certain proportion of workers with disabilities, requirements to adapt their workstations). Employment therefore seems to be more accessible to persons with disabilities, which makes the trade-off between income from these benefits and income from work all the more possible. Moreover, the large and growing weight of disability benefits in social security programs, as the number of beneficiaries increases. The increase in the number of beneficiaries is due in particular to the broadening of the definition of disability and therefore the greater ease with which these benefits can be received, to the increase of life expectancy and to the aging of the population. In this regard, [Mitra \(2008\)](#) has provided evidence that the growth of the disability benefits, for the case of South Africa, may partly explain the decline in employment of persons with disabilities. These make it necessary to understand the effects of these benefits on the employment of recipients.

In France, the country under consideration in this paper, disability benefits take the form of social insurance (disability pension) and social assistance (e.g. Allowance for disabled adults, called in French "Allocation aux Adultes Handicapés", hereafter AAH). In this study, we consider the AAH, a French income tested non-contributory disability benefits program. It is therefore a social assistance program, defined by the [International Labour Organization \(2014\)](#) as a program paying benefits to a part of the vulnerable population (most of the time on a means-tested basis). Since no prior contribution condition is required, it is possible to benefit at a young age without ever having worked: from the age of 20 (or even 16 if individuals are no longer dependent on their parents for family benefits). To reduce the risk of an inactivity trap for those whose capabilities allow them to work and to facilitate the transition from these benefits to employment, the AAH has a special design. It ensures that every additional euro of income from work leads to an increase in total income, which sets it apart from other programs. In many countries with disability benefits programs that allow people to work while receiving them (e.g. in United States and Austria), beneficiaries lose some or all of their benefits if their earnings exceed a certain threshold. This creates a discontinuous change in tax liability (a notch) and reduces incentives to work ([Kostøl & Mogstad, 2014](#); [Ruh & Staubli, 2019](#)) because persons with disabilities can choose to keep their resources below this threshold. However, in France, the AAH has no notch and earned income can be combined with benefits for the first

6 months of work. After that period, a marginal tax rate on household income of 20% or 60% is applied. The disincentive to work should be less in this configuration but part-time work may be favored. Indeed, one recommendation of the United Nations is that states should provide disability benefits that can be combined with employment (full or part-time) in order to facilitate the retention or return to work of persons with disabilities (United Nations, 2019). In addition, the study by Kostøl & Mogstad (2014) showed that financial incentives would encourage the return to employment of disability benefit recipients (and more specifically, disability insurance recipients). To our knowledge, the effect of this welfare benefits program on employment has never been evaluated. Moreover, little is known about the employment effect of disability benefits programs that guarantee monetary gains upon return to work. In 2018, 9.71 billion euros were spent in France on the AAH out of 742.11 billion euros of social protection benefits (Mauro et al., 2020). In terms of the number of recipients, the AAH is the first aid for persons with disabilities, and the second largest minimum social benefit in France, behind the "Revenu de Solidarité Active", with 1.24 million beneficiaries at the end of 2020 against 1.22 million at the end of 2019 (Drees, 2021). With the number of recipients having increased since its creation in 1975, these benefits are likely to weigh more and more on public spending. It is therefore important that these benefits, while ensuring a decent minimum income for persons with disabilities, encourage them to work or to remain in employment.

Our estimation strategy exploits a discontinuity in the eligibility conditions for AAH: eligibility for the AAH starts at age 20 for most individuals. As argued by Hahn et al. (2001), the study of a policy discontinuity is more suitable than natural experiments based on policy changes over time to obtain a proper identification, as it is not necessary to control for changes in the economic environment. Bargain & Doorley (2017) also show that more traditional type of cross-sectional identification performs poorly compared to identification using age discontinuity. The aim of our study is therefore to evaluate the effect on employment of receiving the AAH. The few studies that use regression discontinuity methods on this topic use a discontinuity at a later age (Chen & Van der Klaauw, 2008; Müller & Boes, 2020). No evidence is available from this type of method on the effect of disability benefits on the employment incentive of youth. Since the AAH is attributed at age 20, we will study the effect of this allocation on the employment situation of youth with disabilities. Promoting

the employment of youth, and especially youth with disabilities, is particularly important, given their low employment rate. In fact, persons with disabilities have fewer opportunities to participate in the labor market than persons without disabilities, which is even more the case for transition-age youth. For instance in 2020 in France, 8% of 15-24 years old with disabilities were employed against 28.5% for non-disabled youth of the same age (INSEE, 2021). We focus on low-skilled youth with disabilities² (with a level of education lower than baccalauréat) because their response to financial incentives is expected to be higher. The wage that they may obtain is indeed lower than more educated individuals and compete more directly with disability benefits. Indeed, the literature has shown that low-skilled youth have a significant response to financial incentives (Meghir & Phillips, 2010; Lemieux & Milligan, 2008; Bargain & Doorley, 2011).

Our main contributions are threefold. The first novelty is to study an original disability benefits program that does not contain a notch (and should therefore produce little disincentive to work) and that adults with disabilities can benefit at a very young age (since there are no employment and contribution requirements). The second originality is to use a discontinuity regression method to exploit a young age discontinuity in eligibility for the disability benefits program. We believe that it allows us to identify, in a particularly credible way, the effect of the AAH on employment. This article is also innovative in that it examines employment incentives for youth with disabilities. Previous studies focusing more on the elderly disabled population.

Our results indicate that AAH reduces labor market participation of low-skilled youth with disabilities. Benefiting from AAH reduces by 34 percentage points their probability to be in employment. This effect, although strong, is limited to women, who are known to have important elasticities (Eissa & Liebman, 1996; Piketty, 1998) with a reduction of 45 percentage points of their probability to be in employment. It is also more important for low-skilled youth with a low limitation of activity than for those with a high limitation of activity. This confirms heterogeneous elasticity across different groups. Focusing on women, we find also that the program increases the likelihood of having a precarious contract and working part-time, by 33.3 percentage points and 36.5 percentage points respectively.

This paper is organized as follows. In the next section we present the literature review.

²In reality, we are interested in youth with little or no qualifications, but for the sake of simplicity we will refer to "low-skilled" youth with disabilities.

Section 3 presents the background and Section 4 the data. In Section 5, we explain our estimation strategy. The results are in Section 6 and a Section 7 is devoted to the study of the heterogeneity of the results and an extension of the analysis. We conclude in Section 8.

2 Literature review

The literature on the effects of disability benefits programs on the employment situation of its beneficiaries is important and has been growing steadily in recent years, as evidenced in particular by Dal Bianco (2019)'s survey. Numerous studies have shown that receiving these benefits reduces their labor market participation and their earnings (Bound, 1989; Campolieti, 2001; Chen & Van der Klaauw, 2008; Maestas et al., 2013; French & Song, 2014; Autor et al., 2015, 2016; Gelber et al., 2017). The few studies that have looked at the heterogeneity of these effects have shown that in reality, this negative effect mainly concern youth (in a broad sense), low-educated and persons with a rather low level of disability (French & Song, 2014; Müller & Boes, 2020; Hahn et al., 2001; Maestas et al., 2013).

Most of these studies focus on disability insurance, which is a contributory disability benefits, although a few papers exist on the effects of the Supplemental Security Income (SSI)³ on employment (Muller et al., 1996; Hemmeter, 2014; Thornton, 1998).

Very few studies also look at these effects on youth with disabilities, and when they do, they take the young population in a fairly broad sense (those under 40 among a population of 18-60 years old) (Kostøl & Mogstad, 2014; Müller & Boes, 2020; Ruh & Staubli, 2019; Maestas et al., 2013; Von Wachter et al., 2011).

Yet the stakes of understanding the effects of these benefits on youth are very high, especially since the transition from school to work is more complicated for them. They are also more likely to be neither employed, nor in training, nor in school (Mauro & Mitra, 2020). Moreover, their underemployment is particularly costly because it can lead to financial insecurity and poor health, loss of productive potential for the economy (Quintini & Martin, 2014), and increase the likelihood that they will stay in the program for a long time since they have been in the program since a young age (Cai, 2006), which is costly for public spending.

The issue is even more important for low-skilled youth, since the literature suggests that

³The SSI is the american non-contributory means-tested disability benefits program for children with disabilities, non-elderly young adults with disabilities, and the elderly.

they are those who are more likely to be on benefits the longest (Muller et al., 1996). Moreover, their non-employment status has a severe negative impact on their future professional careers, with a greater likelihood of having low wages and few hours of work (Ghirelli, 2015).

To analyze the effect of disability benefits on employment, many studies have used the method suggested by Bound (1989): a comparison group approach with rejected disability benefits applicants as the control group. Only a few studies have used discontinuity in the eligibility criteria to this purpose, and when they did so, they studied discontinuity at an advanced age (over age 45) (Chen & Van der Klaauw, 2008; Müller & Boes, 2020). Indeed, they don't say much about the effect of disability programs on youth.

Using survey data and administrative data merged for the 1990s, Chen & Van der Klaauw (2008) have exploited the fuzzy discontinuity in the disability insurance allocation rate in the United States at ages 45, 50 and 55 that the program's eligibility rules generate for "marginal applicants". These applicants are those for whom the decision to allocate disability insurance requires taking into account occupational factors (age, education, work experience, etc.), in addition to medical factors, because of the difficulty in assessing their health status. They show that in the absence of the disability insurance, their employment rate would have been 6-12 percentage points higher and their monthly work hours 16-20 hours higher in the long term.

Müller & Boes (2020) exploited the discontinuity in the disability insurance allocation rate in Switzerland at age 56 due to a common practice of disability insurance offices to use the age of claimants as a key factor in benefit allocation (individuals aged 56 or older being more likely to receive these benefits), using in particular a fuzzy regression discontinuity. Their study shows that receiving these benefits decreases the probability of working full time (by about 35%), increases the probability of working part time (by about 32%) but has almost no effect on being active or inactive. These effects are heterogeneous, however, as the shift from full-time to part-time is more likely to be found among men, relatively healthy recipients, and those with middle to high incomes, while the shift from active to inactive is more likely to be found among women, unhealthy recipients, and those with low incomes.

Another related study, although not based on an eligibility-based discontinuity, is by Kostøl & Mogstad (2014). They exploit a temporal discontinuity in the Norwegian disability insurance program to investigate whether financial incentives can affect the labor supply

of recipients. Their study shows that older recipients, approaching retirement age, do not respond significantly to these incentives, unlike those in the prime of their lives (aged of 18-49 years old). Thus, they find that many recipients have considerable work capacity that can be effectively encouraged by financial incentives to work. These incentives would also increase their income and reduce program costs.

3 Background

3.1 Institutional background

The "Allocation aux Adultes Handicapés" (AAH) is a french minimum social benefit that ensures a minimum income for persons with disabilities. It was created by law n°75-534 of June 30, 1975.

This mean-tested benefit has to be claimed by filing in an application form and sent to the "Maison Départementale de l'Autonomie des Personnes Handicapées" (MDPH) of the applicant's place of residence. Should the request be accepted by the "Commission des Droits et de l'Autonomie des Personnes Handicapées" (CDAPH), the benefit is granted for a period ranging from one year to a permanent period depending on the level of impairment⁴. In case of professional activity in an ordinary work environment, a quarterly declaration of resources must be sent to allow the calculation of the amount of the benefit to the "Caisses d'Allocations Familiales" (CAF) or the "Mutualité Sociale Agricole" (MSA), the paying agencies.

To benefit from this financial aid, two types of conditions are required. First of all, there are health conditions, examined by the CDAPH. The MDPH's multidisciplinary team will assign a range of disability rates using a guide scale ("guide-barème")⁵, which the CDAPH will use as a basis for deciding on the allocation of the AAH. It is necessary to have a permanent disability of at least 80%, or between 50% and 79% if the CDAPH has recognized that the applicant has substantial and long-lasting restrictions in accessing employment due to his disability⁶.

⁴AAH is paid for a minimum period of 1 year. For beneficiaries whose level of disability is between 50% and 79%, the maximum duration of allocation is 2 years if during this period the CDAPH believes that their activity limitation can change favorably, and 5 years otherwise. In both cases, it ceases to be paid from the legal retirement age. On the other hand, for those with a level of disability of at least 80%, it is granted for a maximum of 20 years if their activity limitation can change favorably (this maximum duration was 10 years before 2017), for life otherwise.

⁵Appendix 2-4 of the French Social Action and Family Code.

⁶The restriction is considered substantial if the difficulties encountered in accessing employment are signifi-

Administrative conditions must also be met, reviewed by the paying agencies. The applicant must reside in France⁷ and be at least 20 years old (or at least 16 years old if he is no longer dependent on his parents for family benefits). The amount of the AAH depends on the family situation: marital status, household resources and number of children. Figure 1 summarizes in a simplified manner the conditions to be met in order to benefit from the AAH, provided that the conditions of residence are respected.

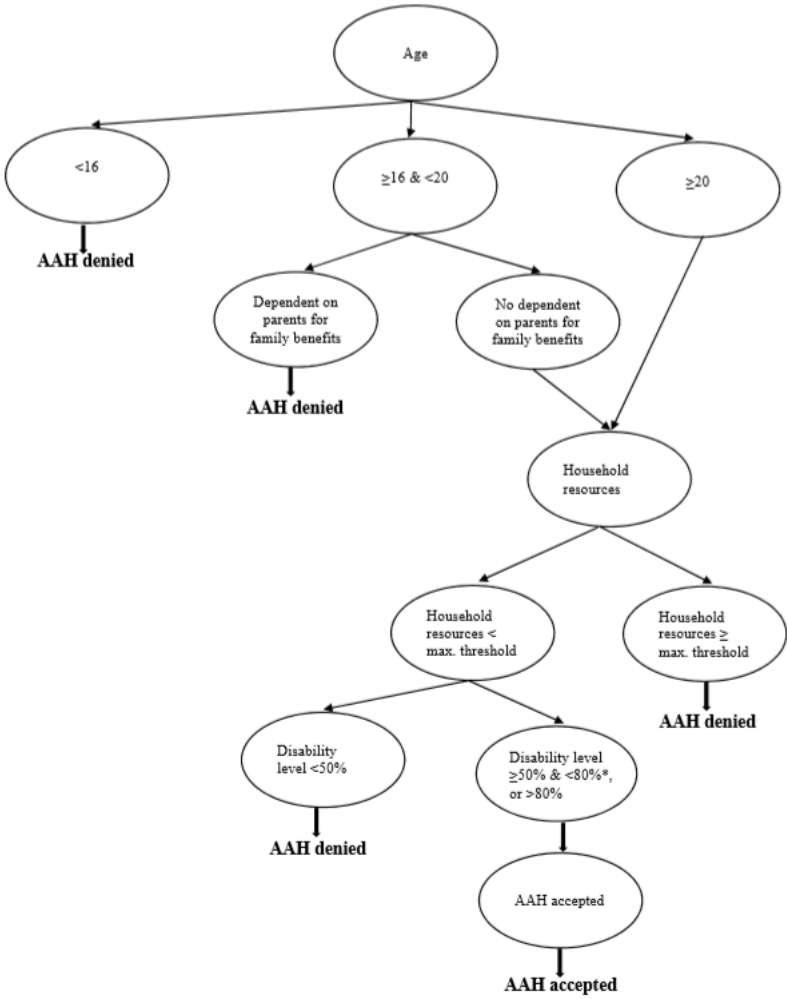


Figure 1. Conditions for receiving the AAH

Note: *If the level of disability is between 50% and 79%, there must also be Substantial and lasting restriction on access to employment.

Except in specific cases, the family’s non-salaried resources are deducted from the amount cant and cannot be compensated for (e.g. with workstation adjustments), and lasting if its foreseeable duration is at least one year from the date the AAH application is submitted.

⁷In metropolitan France or in certain departments or communities (Guadeloupe, French Guiana, Martinique, Reunion, Saint-Barthélemy, Saint-Martin or Saint-Pierre-et-Miquelon). For foreigners, it is necessary to be a legal resident for at least 3 months, except if they have a professional activity.

of the benefit. The amount of the benefit is also calculated according to the amount of the household's professional income⁸.

Under certain conditions, particularly in terms of total income and/or level of disability, the AAH can be combined with various benefits (such as the French minimum income "Revenu de Solidarité Active", work bonus, disability compensation benefit and disability pension). It can also be combined with income from work. In details, earned income can be combined with AAH benefits for the six first months of work (which corresponds to an abatement rate of 100%). After this period, work income are deducted from the allowance with an abatement mechanism when the individual works in an ordinary environment: it is then a "differential AAH". The abatement rate depends on the amounts earned: 80 % below 30% of the gross monthly minimum wage⁹ and 40% above. If beneficiaries have other resources than AAH, this benefit is paid at a reduced rate.

The following formula shows the situation for a single person without children:

$$\begin{aligned} \text{Total income} = \text{earned income} + \text{AAH} - (100\% - 80\%) \times \text{earned income} \leq \text{€}456 \\ - (100\% - 40\%) \times (\text{earned income} > \text{€}456 - 456) \quad (1) \end{aligned}$$

Figure 2 presents the budget constraint of a single individual without children. The dashed line corresponds to his budget constraint when he cannot benefit from AAH (before age 20 for most individuals) and the solid line to his budget constraint with AAH¹⁰. It is possible to observe that there is no configuration for which the increase in earned income does not correspond to an increase in total income.

⁸The net income of the household of the year before last (N-2) is taken into account.

⁹In 2019, the gross monthly minimum wage was €1,521.22. 30% of this amount then corresponds to approximately €456.

¹⁰The budget constraint with AAH corresponds to the situation where the initial 6-months abatement rate of 100% has ended.

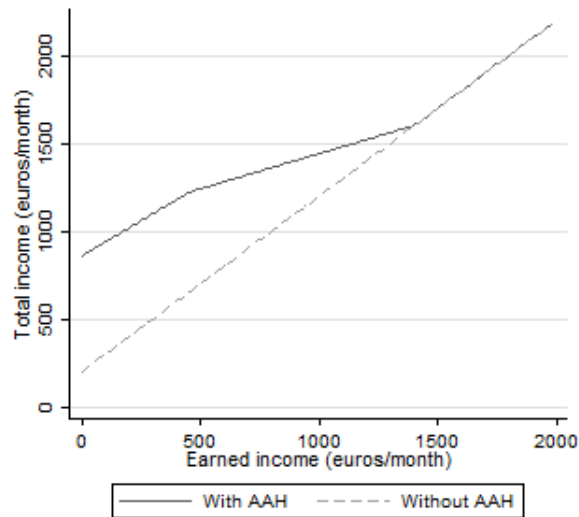


Figure 2. Budget constraint with and without AAH

Notes: April 2019 AAH amounts are used. The figure corresponds to the budget constraint of a single individual without children. Without AAH (before age 20), the individual receives income from work + €200 of housing allowance.

Despite the absence of a notch, the expected effect of the AAH on employment is negative compared to a situation without disability benefits. The AAH could have an impact on the probability of employment of its beneficiaries by having a negative effect on the labor supply. It could have a disincentive effect on employment, since by providing an income to its beneficiaries, they could decide to favor leisure over work (income effect). The disincentive effect could also be due to a reduction in the marginal gain from working an extra hour, from 1 in the absence of the program to 0.6 or 0.8 with AAH (substitution effect). The effect could be on the extensive or intensive margin. Depending on their utility function, beneficiaries might decide not to work because AAH provides them with a minimum level of income, whereas they would have had to work without the benefit of the program to obtain this level of income. They might also decide to work less while remaining employed. Therefore, in a discrete setting, we expect a negative effect of the program on employment but possibly an increase in part-time employment for those who are employed. Working part-time could indeed allow to adjust the job to the disability (medical appointments, necessary rest, etc.)

3.2 The specifics of low-skilled youth with disabilities

In France, after primary education, students enter secondary education around the age of 11. Secondary education is divided into two cycles. The first cycle of secondary education corresponds to the college. At the end of college, around the age of 16, students pass the "brevet" national exam¹¹. Then, they can enter the second cycle of secondary education. Students can choose to integrate the vocational track, at the end of which is passed the CAP ("Certificat d'Aptitude Professionnelle") or the BEP ("Brevet d'Etudes Professionnelles") certificates between the ages of 16 and 17. Otherwise, they can chose to go to the general track or the technological track which ends with the national examination of the "Baccalauréat" (generally at 18 years old). Since obtaining the "Baccalauréat" diploma generally conditions access to higher education (such as university), it is therefore considered in our study as a high level of graduation.

Until 2019, the education/training requirement was 16 years old (20 years old since the start of the 2020 school year). So in terms of schooling, this is the age that students are in their last year of college where the "brevet" diploma is passed, or even in their first year of high school. The legal working age is also set at 16 years of age. However, the employment of non-emancipated minors is conditioned to the authorization of their legal representatives. Moreover, the exercise of certain professional activities are forbidden to them (in particular those involving risks for their health or their safety).

In our study, we only consider low-skilled youth with disabilities, who are between 18 and 25 years old and who have no more than a CAP or BEP certificate. These exam are theoretically passed between the ages of 16 and 17, so even though they repeat a year, which is quite common, they are theoretically available for work at age 18.

Low-skilled workers have a lower reservation wage than skilled workers and are less attached to the labor market, making their job search costs greater (Bargain & Doorley, 2017). When they have disabilities, they combine three factors that can penalize them in accessing employment: their age (and therefore generally their lack of experience), their disability and their low level of education. Their low employment rate was further reduced following the financial crisis of 2008 and the great recession. However, their non-employment has a social cost (poverty, lack of inclusion, feeling of abandonment), but also an important economic cost

¹¹Today, this diploma has little/no value and is not required to integrate high school.

given the potential loss of human capital and social benefits that will potentially be granted to them (such as the AAH). Generally, because of their age, they have not worked (or not worked enough) and are therefore not entitled to unemployment benefits or any other social minimum than the AAH.

The labor market should lead to the blurring of inequalities between low-skilled youth and skilled youth, by allowing low-skilled youth to acquire the professional skills required during their career. In reality, this is not the case in France, since the labor market tends to increase these inequalities, particularly with the dual functioning of the labor market, which affects young people more than others (Cahuc et al., 2013). In fact, there are open-ended contracts and fixed-term contracts.

4 Data and sample selection

We use data from the French Labor Force Survey (LFS) conducted each year in France by the National Institute of Statistics and Economic Studies ("Institut National de la Statistique et des Etudes Economiques", INSEE). This survey is designed to collect information on individuals aged 15 years old and over, living in various groups of approximately 20 adjacent dwellings. A random selection of ordinary dwellings is made in which all inhabitants aged at least 15 years old living in the same dwelling are interviewed. Data recorded in the survey are multipurpose. This survey collects information on labor market status (employment, unemployment and inactivity as defined by the International Labor Organization), occupational activities, education, benefits, geographic and social origin, health, and individual, household, housing, and survey characteristics. Our study focuses on data over the period 2013-2019. Since 2013, information on benefits and health, and in particular on disability status of individuals, is available in the data. We restrict the sample to individuals with disabilities, who may therefore potentially benefit from the AAH program. More precisely, we restrict the sample to individuals who either: i) are limited, for at least six months due to a health problem, in the activities that people usually do (answers being 'strongly limited', 'limited but not strongly', or 'not limited'), ii) are administratively registered as disabled or as having a loss of autonomy (answers being 'yes', 'request in progress' or 'no'), iii) receive the AAH (answers being 'yes' or 'no').

The first variable of limitation of activity is called the Global Activity Limitation Indicator (GALI). The GALI is considered as a relevant, valid and reliable synthetic indicator of disability (Van Oyen et al., 2006; Jagger et al., 2010; Berger et al., 2015; Van Oyen et al., 2018; Dauphin & Eideliman, 2021). Widely used in Europe in various surveys, it allows several elements of disability¹² to be combined in a single question. However, since GALI is a self-reported indicator, it may be subject to reporting bias. In addition, because the question is quite long and broad, it may be interpreted differently by different respondents. Thus, in order to identify the disabled population as well as possible, we take into account another variable, administrative this time (in addition to the AAH): the administrative registered disability/loss of autonomy¹³, which is also often used. The use of these different indicators, justified by the complexity of the disability, allows us to approach the disability in different ways, since some individuals do not respond to all three indicators at the same time.

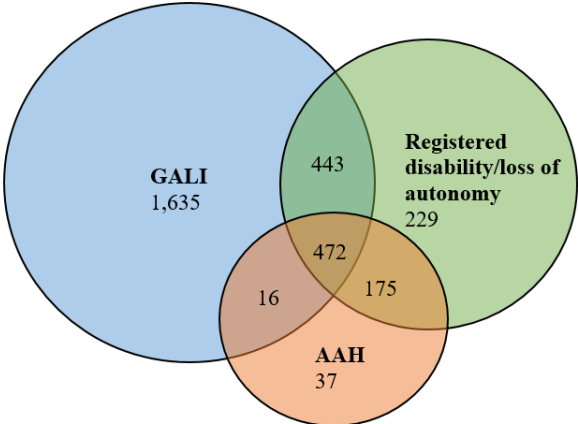


Figure 3. Respondents aged 18-25 identified as having potential disabilities based on the indicators used

We also consider individuals with a level of education lower than "baccalauréat" diploma. The highest level of diploma is consequently the CAP or the BEP which are vocational qualification certificates. There are two main reasons for this choice. Firstly, the response of low-skilled individuals to financial incentive is expected to be higher. The wage that they may obtain is indeed lower than more educated individuals and compete more directly

¹²In France, disability is defined by the law of February 11, 2005 as "any limitation of activity or restriction of participation in society suffered in his or her environment by a person due to a substantial, lasting or permanent impairment of one or more physical, sensory, mental, cognitive or psychic functions, a multiple disability or a disabling health condition".

¹³We do not take into account the individuals for whom the answer to the GALI, the AAH or the administrative recognition questions are missing (i.e. when they do not answer, or declare not to know for the GALI and the registered disability/loss of autonomy, or when their application for having the last one is being processed).

with allowances. Restricting the sample to low-skilled individuals that have less than the "baccalauréat" diploma also ensures that they are available for work after age 18. Finally, we focus on individuals aged between 18 and 25. We start the sample at age 18 because, although people can work from age 16 and we focus on young people with little education, some may still be in school at age 16-18. For example, the CAP and BEP certificates are theoretically taken between the ages of 16 and 17, but repeating a year of school is not uncommon in France, so it is safer to limit the sample to those over 18. The upper limit of 25 years is arbitrarily chosen, but we perform sensitivity analysis on the age window as explained below.

In total, our sample consists of 3,007 observations, including 700 AAH recipients and 2,307 non-AAH recipients.

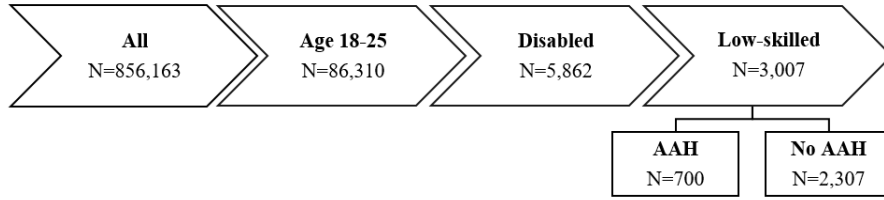


Figure 4. Sample selection

5 Empirical strategy

We exploit the age discontinuity in the AAH eligibility to instrument the effect of the allowance on labor supply, using a fuzzy regression discontinuity method. The objective is therefore to know if age 20 has an effect on obtaining the AAH and if so, if the AAH has an effect on employment of its beneficiaries. Because the first and second stages outcomes are binaries, a nonlinear instrumental variables approach appears to be more appropriate (Ozier, 2018). We estimate a bivariate probit. This approach explicitly models endogeneity through the correlation between the residuals of the two equations. The following equations are estimated:

$$\begin{aligned}
 Y_{ia} &= 1 && \text{if } \alpha + \beta \cdot D_{ia} + f(t) + \phi X_{ia} + \epsilon_{ia} > 0 \\
 &= 0 && \text{otherwise}
 \end{aligned}$$

$$\begin{aligned}
D_{ia} &= 1 && \text{if } \gamma + \delta T20_{ia} + g(t) + \Phi X_{ia} + \mu_{ia} > 0 \\
&= 0 && \text{otherwise}
\end{aligned}$$

With Y_{ia} the labor supply outcome of individual i at age a , $T20_{ia}$ indicates whether the individual is over 20 years old and is in consequence eligible for AAH and D_{ia} indicates whether he benefits from the allowance.

X_{ia} is a set of controls (gender, nationality, the "département"¹⁴ of living of the individual and the year and quarter of the survey)¹⁵. As indicated by [Lee & Lemieux \(2010\)](#), if the RD design is valid, it is not necessary to include them to obtain consistent estimates of the treatment effect. Covariates only reduce the sampling variability and thus increase the precision of the estimates. For example, because the unemployment rate varies substantially across "départements" ([Drees, 2021](#)), including "départements" fixed effects can increase the precision of the estimates

$f(\cdot)$ and $g(\cdot)$ are polynomials of the age centered around 20 years. ϵ_{ia} and μ_{ia} are random errors. β captures the treatment effect and δ the intent-to-treat (ITT). δ captures the fuzziness of the RD design: the lower the δ is, the fuzzier the design and the bigger the discrepancy between ITT and the treatment effects. In fact, $\delta = 1$ would mean that the discontinuity is perfectly related to the benefit of the AAH which corresponds to a sharp regression discontinuity design. In our case the relationship is not deterministic since it is possible to receive the AAH before age 20 under certain conditions. The underlying identifying assumption is that $f(\cdot)$ is a smooth continuous function of the running variable age. The main argument for assuming that $f(\cdot)$ is a smooth function is that employment or work hours typically exhibit regular age profiles. As advocated by [Lemieux & Milligan \(2008\)](#), $f(\cdot)$ should be flexible enough to accommodate non-linearities in the age profiles, but there is no reason – in human capital or related theories of behavior over the life cycle and in the absence of particular fiscal or labor market policies – to expect an abrupt change at a particular age like 25 or 20. The running variable is the age measured in quarter. Although age is available in days, we believe that it is unlikely that the response to the treatment may occur at this temporal level. In

¹⁴In France a "département" is a geographical and administrative unit that can be thought as a county. There are 101 of them with an average population of about 660,000 inhabitants.

¹⁵As indicated by [Lee & Lemieux \(2010\)](#), time dummies can be treated like any other baseline covariate in an RDD setting.

consequence, the running variable is discrete and we have to use a parametric form for the function $f(\cdot)$ (Lee & Lemieux, 2010). Different parametric forms are used for the function $f(\cdot)$ (quadratic, cubic and then linear splines, i.e. with different slopes on each side of the discontinuity).

6 Results

6.1 Graphical analysis

Figure 5 plots the relationship between age in quarter and the proportion of low-skilled youth with disabilities that benefit from AAH. We observe a sharp increase in the proportion of beneficiaries at age 20 when most of the people become eligible for the AAH. Some people may have been eligible before age 20 if they were no longer dependent from their family, which explain that before this age, the proportion of beneficiaries was low but not null. After age 20, the proportion of AAH beneficiaries jumps to about 30%. There may be different reasons to explain why this proportion remains far from 100%. Our sample is restricted to people who have at least some health limitations and therefore potentially meet the eligibility criteria for AAH. However, we cannot be sure that their are eligible because we do not have exactly the same information in the data as that used to determine eligibility for AAH. For example, the degree of disability of respondents is not known. Also they may not be eligible because their earned income are too high. It is also possible that part of these people are eligible but do not take-up the AAH program. The non-take-up phenomenon has been highlighted in many mean-tested programs (Chareyron & Domingues, 2018).

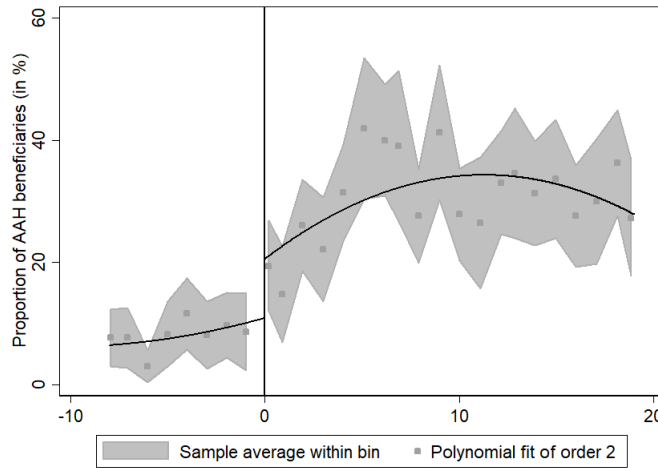


Figure 5. Proportion of low-skilled youth with disabilities that benefit from AAH

NOTE — 0 represents the first quarter of the age 20. Shaded areas correspond to 99% confidence intervals.

Figure 6 shows the relationship between age and the employment rate. Again there is visually a clear discontinuity at age 20 with a drop in employment rate after this cutoff. Except this discontinuity, there appears to be an upward trend in employment rate during this age window. This is consistent with the well-known concave relationship between labor market variables, such as employment and earnings, and age (Mincer, 1974).

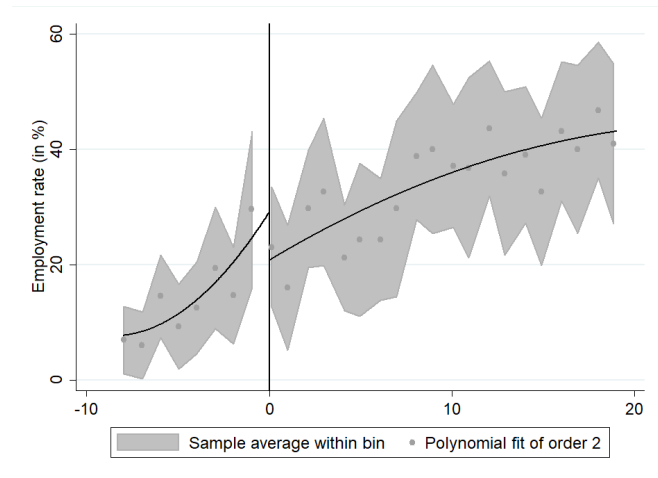


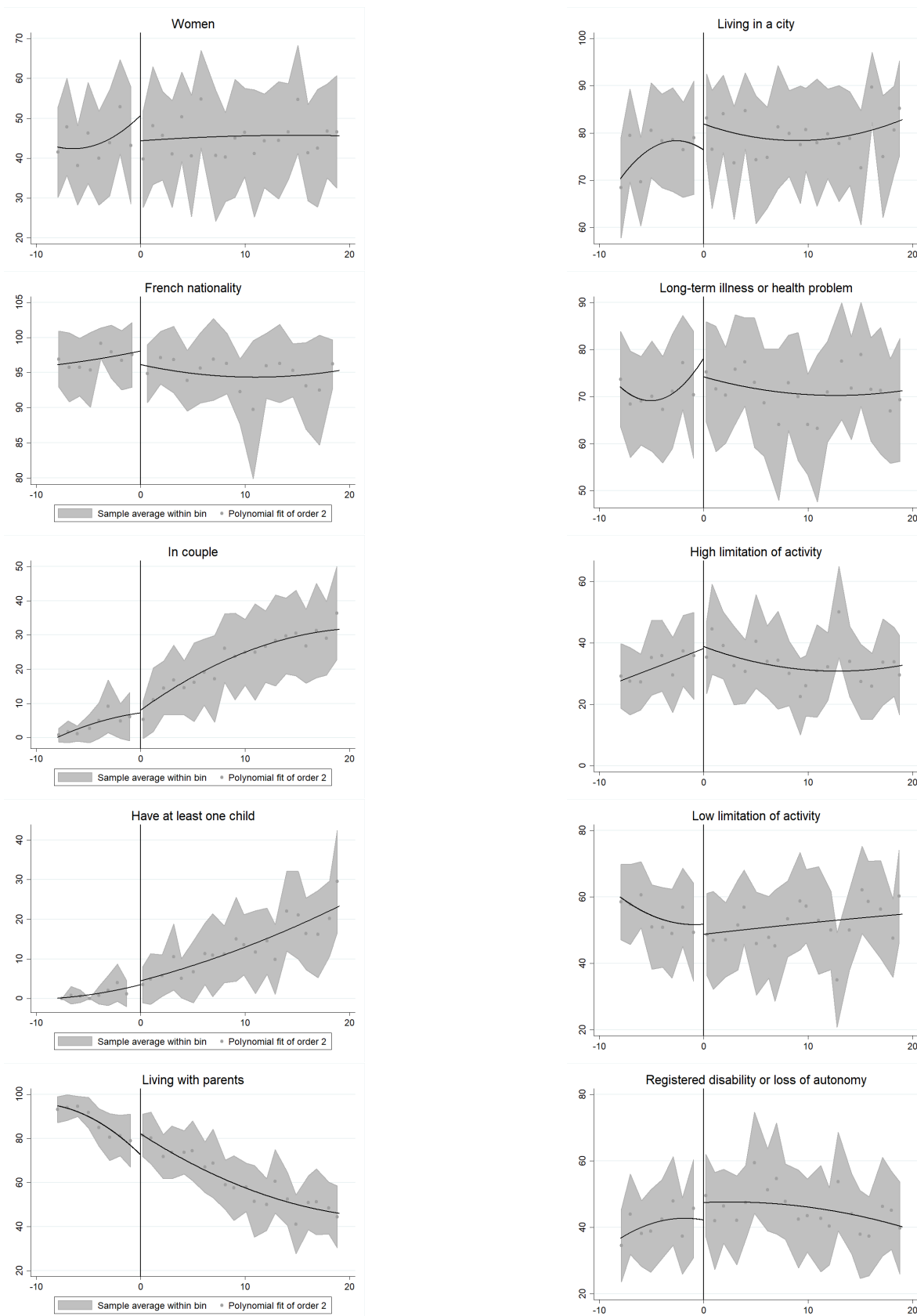
Figure 6. Employment rate of low-skilled youth with disabilities

NOTE — 0 represents the first quarter of the age 20. Shaded areas correspond to 99% confidence intervals.

Finally in Figure 7, we present the evolution of some individual characteristics around age 20. Since we assume that people under age 20 are a good counterfactual for people over age 20, there should be no discontinuity in variables other than those potentially affected by the

disability benefits. In consequence, we plot the evolution of the proportion of women, french citizens, people living in a city, in a relationship, having at least a child, living with parents, with low and high limitation of activity, with a registered disability, and people with chronic illness. There appears to be no discontinuity at age 20 for these variables. This is reassuring about the assumption of the smoothness of the $f(.)$ function. Nevertheless, we will include some control variables in our regressions, which will increase the precision of the estimates.

Figure 7. Individual characteristics by age



NOTE — The figure displays individual characteristics by age in quarter. 0 represents the first quarter of the age 20. Shaded areas correspond to 99% confidence intervals.

6.2 Main results

Results of the estimates of equations (1) and (2) are presented in Table 1. Columns (1) and (2) present the estimates of the effect of the discontinuity (at age 20) on the probability to benefit from the AAH and columns (3) and (4) present the estimates of the effect of benefiting from the AAH on the probability of employment, with or without cohort effects (year and quarter of the survey) and control variables. The main estimates are conducted on low-skilled youth with disabilities between the age 18 and 25. In the lower part of the table, we present estimates on varying age windows by restricting alternatively the sample to youth below 22, 23 and 24 years old.

The results of the first and second stages are quite stable regardless of the parametric specifications of the function $f(\cdot)$: the sign of the estimated effects do not vary with the specification of the $f(\cdot)$ function used. The magnitude of the estimated effects of the second stage tends to decrease slightly and become less significant with the linear spline polynomial. We can observe that the addition of controls strongly increases the precision of the estimates. Indeed, there is probably a relatively large variation in employment by location that leads to discrepancies and low precision if not controlled. Among the different specifications, we choose to favor the linear spline which is the form advised by [Lee & Lemieux \(2010\)](#). The results of the second stage are also slightly more sensitive to the age windows under consideration. When the sample is restricted to individuals under the age of 22, the effect of AAH on employment is no longer significant, as to individuals under the age of 24 when no controls and/or cohort effects are included.

Regarding the second stage, the results indicate that benefiting from the AAH decreases the probability of employment by about 27.5 percentage points. This result appears to be within the range of those obtained in previous studies. Using the Bound's method, [Maestas et al. \(2013\)](#) found that the Social Security Disability Insurance (SSDI, the disability insurance program in the United States) receipt is associated with an approximately 28 percentage points drop in employment two years after the initial determination. [Chen & Van der Klaauw \(2008\)](#) found relatively large variations in the estimated effect depending on the method and population considered. They found a reduction of less than 20 percentage points in labor force participation using a Bound approach. They found a smaller response of 6-12 percentage points using a regression discontinuity approach on a group of 'marginal' applicants whose

medical condition is more difficult to assess and whose disability determination is based on vocational factors. In consequence, the negative effect of the AAH although not notched, and providing an income gain for each additional wage income, appears substantial and not particularly smaller than the effect of notched programs. It should be noted, however, that this effect is found for a low-skilled young population who are potentially particularly sensitive to incentives. Finally, even if the AAH is found to have a negative effect on the employment of the study population, receiving financial resources through the AAH may increase the amount of time spent looking for work: this could lead to a reduction in the probability of employment in the short term, but hypothetically an increase in the probability of a more satisfying job in the medium or long term.

Our results can also be contrasted with those of [Bargain & Doorley \(2011\)](#) who studied with a regression discontinuity design the effect of the French minimum income (the "Revenu Minimum d'Insertion", RMI) on the employment of single low-skilled young men (without considering disability). Comparing to our study, they showed a lower disincentive to employment of this social benefit of (7-10%), which can be explained by the specificities of the population with disabilities.

Table 1. RDD estimates of the effect of AAH on employment of low-skilled youth with disabilities

	First stage: AAH recipient		Second stage: employment	
	(1)	(2)	(3)	(4)
Polynomial specification for age				
Quadratic	0.118** (0.042)	0.121** (0.040)	-0.330* (0.171)	-0.335*** (0.069)
Cubic	0.124*** (0.036)	0.125*** (0.037)	-0.339* (0.170)	-0.339*** (0.071)
Linear Spline	0.180*** (0.035)	0.175*** (0.034)	-0.226 (0.169)	-0.275** (0.096)
N. Obs.	3,007	3,007	3,007	3,007
Linear Spline with age below				
Age<22	0.075** (0.025)	0.081*** (0.021)	-0.307 (0.243)	-0.218 (0.436)
Age<23	0.137*** (0.032)	0.138*** (0.035)	-0.321** (0.149)	-0.367*** (0.111)
Age<24	0.159*** (0.034)	0.154*** (0.034)	-0.259 (0.166)	-0.307** (0.099)
Controls	NO	YES	NO	YES

NOTE — *p<0.1; **p<0.05; ***p<0.01. Standard errors clustered at the age in quarter are in parentheses. Controls are: year and quarter of the survey, gender, nationality and "département" of living of the individual.

6.3 Robustness

6.3.1 Labor market policies

To our knowledge, no minimum social benefit compete with the AAH at age 20, so there would be no trade-off between the AAH and other minimum social benefits. Nevertheless, it seems interesting to know the range of labor market policies that can affect the employment of youth with disabilities, by affecting their labor supply but also the labor demand. We are therefore interested in employment public policies for youth, especially those with low or no qualifications, and those specific to persons with disabilities.

First of all, on the labor supply side, youth can benefit from several types of assisted contracts as work-study programs which included apprenticeship contracts and professionalization contracts. Most of these contracts are open to youth between the ages of 16 and 25

with little or no qualifications, with the aim of helping those unemployed who have social and professional difficulties to find a job. In addition, hiring them under these contracts allows employers to benefit from financial aid and/or a reduction in social security contributions.

Persons with disabilities, especially youth, can also benefit from specific assistance in the labor market. First of all, they can benefit from vocational training aids (e.g. exceptional aid for training and maintenance of remuneration during training). They can also benefit from employment assistance (e.g. human and/or technical assistance to compensate for the disability).

Employers, and in particular private employers subject to the French employment quota of disabled workers can also benefit from financial aid for the hiring of disabled workers (e.g. aid for the reception, integration and professional development, and aid for the adaptation of work situations). But this employment obligation and these aids are not conditional on being over 20 years old. For example, the administrative recognition as a disabled worker, which permits to benefit from the employment quota of disabled worker, is accessible to people over 16 years old, which is the legal working age.

6.3.2 Manipulation effect

One element of the regression discontinuity design validity is that the aggregate distribution of the assignment variable must be continuous around the cutoff.

As stated previously, it is unlikely that sample selection, due to the fact that we consider low-skilled youth, can cast doubt on our results because the level of diploma is generally mainly determined before age 20. Another concern would be the possibility of people falsifying their date of birth in the application for the AAH benefit (i.e. people aged 19 claiming to be 20 in order to access AAH). This is unlikely, however, since verification is relatively easy for the French authorities.

We can, however, verify that the density of the running variable is not affected by the discontinuity. Figure 1 presents the estimated densities of the running variable from local polynomial regression for the two years before and after the cutoff. We observe graphically no evidence of manipulation of the running variable. 81 individuals have one quarter more than 20 years old and 81 have one quarter less than 20 years old. The McCrary test confirms the absence of manipulation effect: the null hypothesis that the density of age is the same

just above and below the cutoff cannot be rejected with a p-value of 0.99.

In addition, we decided to keep in our sample the individuals still under study in order not to reduce our sample (529 individuals concerned, including 39 AAH recipients). As a robustness check, we rerun our estimates by removing these observations. The main results - i.e. thus of column 4 - remained similar (Table 1 in appendix), hence the choice to keep these observations.

6.3.3 Falsification test

As a falsification test, we offer to check that the age cutoff of 20 years old has no effect on the employment probability of a group that cannot be affected by the AAH. To this purpose, we examine the relationship between age and employment for the population of low-skilled youth without disability. The figure 8 present this relationship. The comparison with the equivalent for youth with disability (Figure 6) is striking. Contrary to youth with disabilities, there is no sharp decrease in employment rate at age 20. On the contrary, employment continue to increase immediately after age 20. In this population, we observe the usual concave employment profile, with employment increasing with age and then flattening rapidly (Bargain & Doorley, 2011).

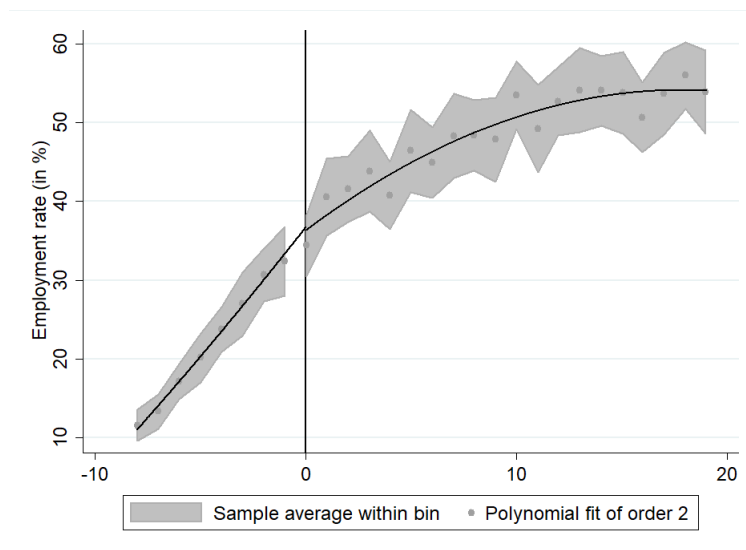


Figure 8. Employment rate of low-skilled youth without disability

NOTE — 0 represents the first quarter of the age 20. Shaded areas correspond to 99% confidence intervals.

7 Heterogeneity and extension

7.1 Heterogeneity: gender and level of disability

We now explore the heterogeneity of the AAH effect by gender and level of disability. To this end, we re-estimate our main specification for the subsamples of men, women, individuals with low disability and individuals with high disability. The level of disability is approximated using the GALI¹⁶. The results are presented in Table 2.

We observe that the disincentive effect of the AAH is higher for women than for men¹⁷. This gender difference may explain why we do not see a completely clear effect in the Figure 6. The AAH reduces the probability of employment for women by 43.4 percentage points, whereas we find no significant effect for men. The estimate of the effect on men, however, is highly unprecise as shown by the standard errors, so that one should not conclude that there is no disincentive effect on this population. Nevertheless, this result is consistent with previous studies showing that women have the highest elasticity (Eissa & Liebman, 1996; Piketty, 1998). We also observe that the disincentive effect is larger for those with a low level of disability (approximated by low level of activity limitation) than for those with a high level of disability (approximated by high level of activity limitation). This result is in line with the literature: the trade-off between labor income and disability benefits is only possible for those with a work capacity (Hanel, 2012). Moreover, Maestas et al. (2013) showed that the receipt of disability insurance decreases the employment probability only for those with a less severe disabilities, by 50 percentage points. Unlike our study, they find no effect for those with more severe disabilities. However, it should be kept in mind that in this study the degree of disability is approximated by the level of declared activity limitation, which has its limitations..

¹⁶The relevance of using the GALI to study degrees of severity of disability is limited (Tarazona et al., 2021), but it is only used here to cut the sample into two parts.

¹⁷The difference is significant at the 5% level according to a Wald test.

Table 2. RDD estimates of the heterogeneous effect of AAH on employment of low-skilled youth with disabilities

	Second stage: employment			
	(1)	(2)	(3)	(4)
	Men		Women	
Linear Spline	-0.030 (0.132)	0.040 (0.229)	-0.48*** (0.016)	-0.434*** (0.015)
N. Obs	1,657	1,657	1,350	1,350
	High disability		Low disability	
Linear Spline	-0.324*** (0.096)	-0.334** (0.148)	-0.530*** (0.023)	-0.501*** (0.022)
N. Obs	980	980	1,586	1,586
Controls	NO	YES	NO	YES

NOTE — *p<0.1; **p<0.05; ***p<0.01. Standard errors clustered at the age in quarter are in parentheses. For the sake of clarity, we have reported only the second stage of the bivariate probit estimates. Controls are: year and quarter of the survey, gender, nationality and "département" of living of the individual.

7.2 Extension: focus on low-skilled young women in employment

Since the effect of the AAH on employment is only proven for women, let us now focus on this subcategory of the population. By restricting our sample to low-skilled young women, we have 1,350 observations of which 285 receive the AAH and 1,065 do not receive it.

In Figure 9, we graphically observe a much more pronounced discontinuity in employment at age 20 for low-skilled young women than for the low-skilled young men (Figure 10). This may explain why overall, regardless of gender, we do not find a pronounced graphic effect in Figure 6.

Let us therefore go a little further for this subcategory of the population, by studying the impact of the receipt of these benefits for those who are employed. For this purpose, two main outcomes were considered: the type of contract and the working time (Table 3).

The outcome "permanent contract" takes the value 1 when the young woman in employment has an permanent contract and 0 otherwise (i.e. when she has no work contract, or when she has a fixed-term contract, a seasonal contract, a contract other than seasonal, a temporary work contract or an apprenticeship contract). Table 3 shows that receiving the AAH would reduce their probability of having a permanent contract by about 33 percentage

Figure 9. Employment rate of low-skilled young women with disabilities

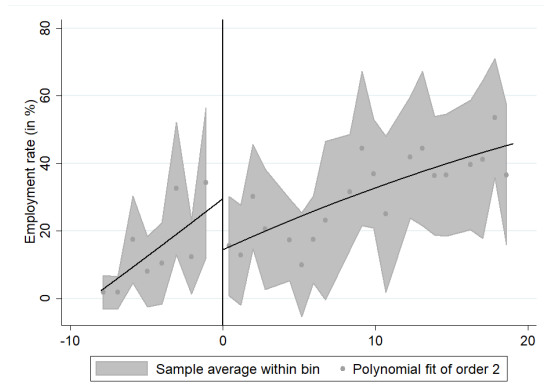
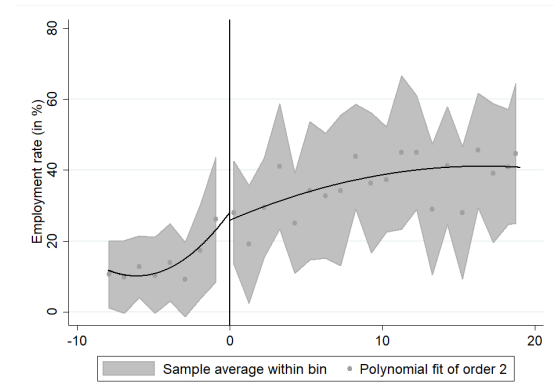


Figure 10. Employment rate of low-skilled young men with disabilities



NOTE — 0 represents the first quarter of the age 20. Shaded areas correspond to 99% confidence intervals.

points (column 2). To encourage the employment of low-skilled youth, the number of fixed-term contracts offered has increased. Although they can help them to find a first job, the long-term impact of these contracts on their careers can be negative by promoting job insecurity. The study by [García-Pérez et al. \(2019\)](#) showed that the liberalization of the regulation of fixed-term contracts in Spain in the 1980s reduced earnings in the long term (5% drop over the first 10 years of employment and 8% drop over the first 27 years).

As for the number of hours worked, the same table show that the chances of working part-time are increased by 36.5 percentage points (column 4) when these young women receive the AAH. In consequence, it appears that the allowance affects labor participation both at the extensive and intensive margins. This result is also a consistent with that of [Chen & Van der Klaauw \(2008\)](#) who found that the allowance reduces the number of hours worked per month by 12-32 hours. This high rate of part-time employment for women may be explained by the fact that beneficiaries of the employment quota of disabled workers, including AAH beneficiaries, can benefit from part-time work by right. This means that part-time employment cannot be refused by the employer. It can be granted for a period of 6 months to 1 year, renewable. In addition to allowing the person's state of health to be adapted to the job, there are some advantages: periods of part-time work are counted as full-time for the calculation of advancement (in step and grade), internal promotion and training rights, the constitution of retirement pension rights and the length of retirement pension insurance. They also benefit from the same leave entitlements.

Table 3. RDD estimates of the effect of AAH on type of contract and working hours for low-skilled young women with disabilities

	Second stage: employment			
	(1)	(2)	(3)	(4)
	Permanent contract		Part-time work	
Linear Spline	-0.440*** (0.021)	-0.333*** (0.022)	0.439** (0.111)	0.365*** (0.035)
N. Obs	348	348	828	828
Controls	NO	YES	NO	YES

NOTE — *p<0.1; **p<0.05; ***p<0.01. Standard errors clustered at the age in quarter are in parentheses. For the sake of clarity, we have reported only the second stage of the bivariate probit estimates. Controls are: year and quarter of the survey, nationality and "département" of living of the individual.

8 Conclusion

To combat the precariousness of persons with disabilities, disability benefits can be granted under certain conditions. A few countries, including France, have designed these programs so that it is always financially more advantageous to work while receiving these benefits. The objective is thus to avoid the creation of an inactivity trap and to promote the inclusion of this population via the employment channel.

In this study, we focus on the French allowance to disabled adults ("Allocation aux Adultes Handicapés", AAH), an original disability benefits program designed to ensure work incentives. It is one of the most important social assistance programs in France, yet its effects has never been evaluated. We evaluated the effect of these disability benefits on employment. To do this, we used an age-related discontinuity in eligibility criteria: beneficiaries must be at least 20 years old (or at least 16 years old if they are no longer dependent on their parents for family benefits). We used data from the French Labor Force Participation Survey for the years 2013 through 2019 and we focused on low-skilled youth with disabilities (who have less than the "Baccalauréat", the french high school diploma). This population has some peculiarities, including the fact that they are farther from employment and that their reservation wages are more competitive with disability benefits than those of skilled individuals. Moreover, we should keep in mind that persons with disabilities do not always have the capacity to work, especially for those with a high level of disability.

We can draw two main conclusions from our study. Firstly, receiving the AAH has a negative effect on the employment of low-skilled youth with disabilities. In practice, this result does not appear to concern the whole population: the negative effect is substantial for women (about 43 percentage points) but not significant for men. The effect is also stronger for beneficiaries who declare having a low activity limitation than for those who declare having a high activity limitation (about 33 percentage points versus 50 percentage points), which are approximated by a low and high level of disability respectively.

When we focus on employed women, we observe an effect of the AAH on both the intensive and extensive margin: receiving these benefits reduces their probability of having a permanent contract by about 33.3 percentage points and increase their probability of working part-time by about 36.5 percentage points.

The results confirm that women and persons with a low level of disability tend to have particularly high elasticity. Although they concern a responsive population, our results also tend to indicate that even a program without a notch, designed to provide an incentive to work, can have a substantial negative impact on labor force participation.

These results sustain the need to implement employment support policies particularly targeted at the most incentive-sensitive population to counteract the disincentive effect of the AAH: young women with and youth with a low level of disabilities. In this regard, [Kostøl & Mogstad \(2014\)](#) had also shown that public policies targeting disability insurance beneficiaries aged 18-49 would be more effective, because of the high elasticity of their labor supply. It is therefore important to promote their employment, but one that ensures their well-being by being adapted and providing an adequate income. Efforts have already been made in France in this direction (e.g. obligation to adapt workstation to the needs of disabled workers), but more is needed on the supply and demand side of the labor market together. For instance, training that enables persons with disabilities to qualify for higher wages could be particularly effective in reducing disincentives.

There is also a need for a more transverse vision of disability in the implementation of public policies, with reinforced support from the end of school to the labor market. In fact, the transition from adolescence to adulthood and therefore the transition from school to work is particularly difficult for youth with disabilities ([Taylor et al., 2021](#)). It could be it could be useful to further develop internships and apprenticeships for this population, but also to

set up a support service for the transition to employment. In the United States, for example, there are State vocational rehabilitation agencies that help youth with disabilities aged 16 to 24 make the transition from school to work, which have no equivalent in France.

In addition to promoting the inclusion of low-skilled youth with disabilities, promoting their employment could also benefit to companies that could will then benefit from a different talent pool. There is also an issue in terms of public spending since encouraging the employment would reduce the amount of benefits paid and therefore the weigh of social assistance spending. Understanding the effects of the AAH, particularly on employment, could therefore be useful for policymakers.

However, our study has some limitations, including the imperfect nature of the variables used to define the disabled population, in particular the variable GALI which is declarative. Furthermore, we do not know the degree of disability of the people studied, nor whether they are able to work. Since we used the discontinuity regression method, our results are only valid for the population around the cutoff (20 years) and cannot be extended to an older population. In this respect, the 18-25 years old are a specific population since, due to their young age, their disability is very early and is certainly not related to an accident at work. Moreover, applying for the AAH could also depend to a large extent on family assistance (knowledge of this minimum benefit, the steps to take in order to file a claim, etc.). The AAH will therefore be likely to have different effects on an older population.

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Appendix

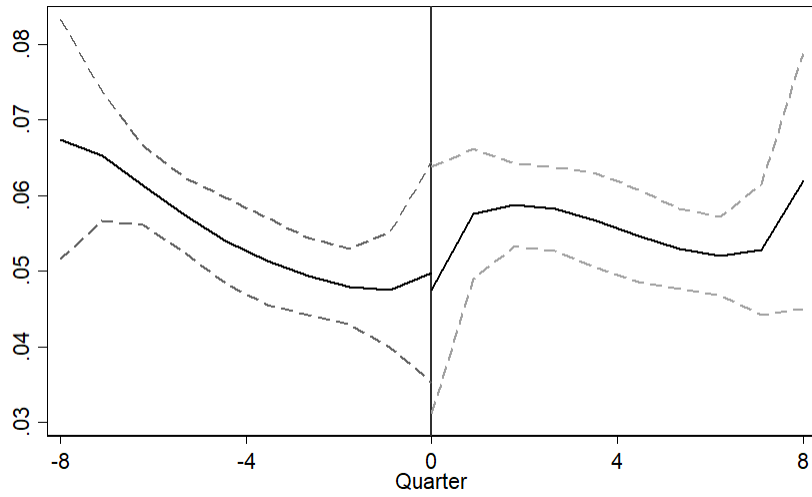


Figure 1. Density of the running variable

NOTE — 0 represents the first quarter of the age 20. The solid line represents the estimated density of the running variable. The density is estimated from local third-order polynomial regressions estimated on each side of the cutoff. The dashed lines are confidence intervals at the 99% level.

Table 1. RDD estimates of the effect of AAH on employment of out of school low-skilled youth with disabilities

	First stage: AAH recipient		Second stage: employment	
	(1)	(2)	(3)	(4)
Polynomial specification for age				
Quadratic	0.109** (0.053)	0.115** (0.051)	-0.256 (0.548)	-0.359*** (0.077)
Cubic	0.123** (0.047)	0.124** (0.048)	-0.318 (0.368)	-0.365*** (0.076)
Linear Spline	0.194*** (0.042)	0.188*** (0.043)	-0.180 (0.312)	-0.321*** (0.086)
N. Obs.	2,478	2,478	2,478	2,478
Linear Spline with age below				
Age<22	0.082** (0.029)	0.088*** (0.025)	-0.315 (0.332)	-0.375*** (0.060)
Age<23	0.154*** (0.042)	0.157*** (0.044)	-0.315 (0.241)	-0.390*** (0.077)
Age<24	0.173*** (0.042)	0.166*** (0.043)	-0.209 (0.314)	-0.362*** (0.077)
Controls	NO	YES	NO	YES

NOTE — *p<0.1; **p<0.05; ***p<0.01. Standard errors clustered at the age in quarter are in parentheses. Controls are: year and quarter of the survey, gender, nationality and "département" of living of the individual.