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Evidence from France

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Sylvain Chareyron* Naomie Mahmoudi**

Abstract: The French disability assistance program is a form of social benefit that guarantees 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 gives an increase in total income. Using the French Labor Force Survey from 2013 to 2019, we exploit the young age discontinuity in the AAH (Allowance for Disabled Adults) 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 women more than men and is larger for those with a low level of activity limitation than those with a high level. We also find that, for women who are employed, receipt of these benefits increases their chances of working part-time and reduces their job search effort. Our results suggest that more targeted public policies are needed to incentivize the employment of low-skilled youth who are particularly subject to allowance disincentives.

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

JEL classification: H53; I12; I38; J22

Declarations of interest: none.

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1 Introduction

Persons with disabilities are more likely to experience poverty and economic vulnerability ([United Nations, 2019](#)). Their impairment combined with the environment in which they find themselves can hinder access to or retention of employment, and thus deprive them of a reasonable 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 benefit is one of the social protection programs that address this need, motivated by a societal desire for equity and solidarity. It aims to compensate for the financial consequences of disability by ensuring that persons with disabilities receive a minimum of resources, thus improving their financial security. The amount disbursed is generally lower than the average wage of a full-time employee, an old-age pension or unemployment benefits. Unlike most social benefits, they are paid to people who are not always able to work, as disability can by its nature limit activity. In European Union member states, in 2018, disability benefits represented 7.6% of the total spend on social protection benefits (stable since 2010), making it one of the most important social protection programs.¹

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 enshrined 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 difficulty in designing a program of disability benefits, therefore, is to find the balance between providing persons with disabilities the security of a minimum income but yet not creating an inactivity trap. However, the trade-off between income from work and income from disability benefits only applies to those whose ability to work is reduced but not totally lost. Severely disabled persons cannot respond to financial incentives since labor market income is out of their reach ([Hanel, 2012](#); [Maestas et al., 2013](#)).

In recent years, the issue of disincentives to work due to receipt of disability benefits has

¹Eurostat. "How much is spent on disability benefits in the EU?", December 3, 2020.

In the European Union, in 2017, social protection expenditures accounted for 28.1% of the GDP (Eurostat. "Expenditure on social protection", April 22, 2022).

become more salient with the increased availability 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 on employers to adapt their workstations). Employment has thus become more accessible to persons with disabilities, which makes the question of the trade-off between income from benefits and income from work all the more germane. Moreover, the relative weight of disability benefits in social security programs is growing as the number of beneficiaries increases. The increase in the number of beneficiaries and therefore the greater ease with which these benefits can be accessed, is due in particular to the broader definition of disability, increased life expectancy and an aging population. In this regard, [Mitra \(2008\)](#) has provided evidence that the growth of disability benefits, in the case of South Africa, may partly explain the decline in employment of persons with disabilities. It is thus 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, in French *Allocation aux Adultes Handicapés*, hereafter AAH). The focus of this study is the AAH, a French income-tested non-contributory disability benefits program. It is defined by the [International Labour Organization \(2014\)](#) as a program that pays benefits to members of a vulnerable population (usually on a means-tested basis). Since no prior contribution is required, it is possible to avail of it from a young age without ever having worked - from the age of 20 (or even 16 if the individual is no longer dependent on their parents). Its amount, although lower than the French minimum wage, is however higher than *Revenu de Solidarité Active*, the French minimum income for the unemployed and for workers with very low labor income.

To reduce the risk of an inactivity trap for those who are able to work and to facilitate the transition from these benefits to employment, the AAH has a special element in its design: every additional euro of income from work increases the total income, which sets it apart from other programs. It ensures that every additional euro of income from work leads to an increase in total income, which sets it apart from others disability benefits programs that often have a notch. Introducing incentives to work into the design of social minima has an ethical/social justice dimension: the need for promoting the insertion/reinsertion of individuals on labor

market and avoiding assistance traps (Fleurbaey et al., 1999).

In many countries offering 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 step change in tax liability (a notch) which reduces the incentive to work (Kostøl & Mogstad, 2014; Ruh & Staubli, 2019) because it may encourage persons with disabilities to choose to keep their resources below this threshold. However, in France, the AAH has no such notch and earned income can supplement 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 relatively low in this configuration but part-time work may be preferred to full-time. Indeed, the United Nations recommends that countries provide disability benefits that can be combined with employment (full or part-time) in order to facilitate the integration of persons with disabilities into the workplace (United Nations, 2019).

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 cross-sectional identification performs poorly compared to identification using an age discontinuity.

The aim of our study is therefore to evaluate how receiving the AAH affects employment. The few studies on this topic that use regression discontinuity methods have used a discontinuity at a later age (Chen & Van der Klaauw, 2008; Müller & Boes, 2020). No evidence of the effect of disability benefits on the employment incentive of youth is available using this type of method. Since the AAH is attributable from age 20, we will study the effect of this allocation on the employment 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 and this 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 compared

to 28.5% for non-disabled youth of the same age.² We focus on low-skilled youth with disabilities³ (with a level of education lower than the *baccalauréat*) because it is expected that financial incentives will elicit a higher response from them. The wage they could obtain is distinctly lower than that of more educated individuals and so, is more directly comparable with disability benefits. Indeed, the literature has shown that the response by low-skilled youth to financial incentives is strongly significant (Meghir & Phillips, 2010; Lemieux & Milligan, 2008; Bargain & Doorley, 2011).

Our main contributions are threefold. The first original aspect of our study is the examination of an original disability benefits program that does not contain a notch (and therefore should not have a strong disincentive to work) and that can be availed of by adults with disabilities from a very young age (since there are no employment and contribution requirements). The second originality is that we use a discontinuity regression method to explore the impacts of a young age discontinuity in eligibility in this disability benefits program. We believe that it allows us to identify in a particularly credible way the effect of the AAH on employment. Thirdly, this article is also innovative in that it examines employment incentives for youth with disabilities. Previous studies have focused more on the population of persons with disabilities over the age of 45.

Our results indicate that AAH reduces labor market participation of low-skilled youth with disabilities. Benefiting from AAH reduces by 27.5 percentage points the probability that they will be in employment. This relatively large effect suggests that the absence of a notch in the French program is not sufficient to eliminate the work disincentive on groups with higher labor supply elasticity. This effect, while high, is consistent with results in the literature on the effect of disability benefits on the employment of its recipients, but higher than that of similar programs for the non-disabled. This effect is particularly strong for women, who are known to have important labor supply elasticities (Eissa & Liebman, 1996; Piketty, 1998; Briard, 2020) with a reduction of 45 percentage points in their probability to be in employment. The effect is also more important for low-skilled youth with a low level of activity limitation than for those with a high level of activity limitation. This confirms the presence of heterogeneous elasticity across different groups. Focusing on employed women, we find also that the program

²INSEE. "Emploi, chômage, revenus du travail - Travail, santé et handicap", INSEE références, édition 2021.

³In reality, we are interested in youth with little or no qualifications but for the sake of simplicity we refer to "low-skilled" youth with disabilities.

increases their likelihood of working part-time by 36.5 percentage points when employed and decreases their job search efforts for those who are unemployed by 55.3 percentage points.

This paper is organized as follow. In the next section we present the literature review. [Section 3](#) presents the background and [Section 4](#) the data. In [Section 5](#), we explain our estimation strategy. The results are outlined in [Section 6](#) and a [Section 7](#) studies the heterogeneity of the results with an extended analysis. We conclude in [Section 8](#).

2 Literature review

The literature on the effects of disability benefits programs on the employment of beneficiaries is important and has been growing steadily in recent years, as evidenced in particular by the survey of [Dal Bianco \(2019\)](#). Numerous studies have shown that beneficiaries tend to have reduced labor market participation and 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 negative effect is strong, ranging from a 6 to 28 percentage points drop in the probability of employment following the receipt of disability benefits. The few studies that have examined the heterogeneity of these effects have shown that in reality, this negative effect mainly concerns women, youth (in a broad sens), poorly-educated people and persons with a rather low level of disability ([French & Song, 2014](#); [Müller & Boes, 2020](#); [Hahn et al., 2001](#); [Maestas et al., 2013](#); [Ruh & Staubli, 2019](#); [Kostøl & Mogstad, 2014](#)).

Most of these studies focus on disability insurance, which is a contributory disability benefit, although a few papers have examined the effects of the Supplemental Security Income (SSI).⁴ on employment ([Muller et al., 1996](#); [Hemmeter, 2014](#); [Thornton, 1998](#)) Moreover, the effects of these benefits on women’s employment have been little studied ([Kostøl & Mogstad, 2014](#); [Ruh & Staubli, 2019](#); [Müller & Boes, 2020](#); [Campolieti, 2001](#)).

Very few studies specifically look at these effects on youth with disabilities, and when they do, they take a fairly broad definition of the young population (those under 40 from 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 involved in understanding the effects of these benefits on disabled youth

⁴The SSI is the American non-contributory means-tested disability benefits program for children with disabilities, young adults with disabilities and the elderly.

are very high, especially since the transition from school to work is more complicated for them (Taylor et al., 2021). They are also more likely to be neither employed, nor in training, nor in school (Mauro & Mitra, 2020). Moreover, the underemployment of this population is particularly costly to them and to society because it can lead to financial insecurity, poor health and loss of productive potential for the economy (Quintini & Martin, 2014). The likelihood that they will stay in the program for a long time is also high since they joined the program at a young age (Cai, 2006), especially if they are low skilled (Muller et al., 1996), incurring a high cost for public spending. Moreover, the exclusion of low-skilled youth from the labor market has a severely negative impact on their future professional careers, with a greater likelihood of earning low wages and having 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 a control group comprised of rejected disability benefit applicants. Only a few studies have used discontinuity in the eligibility criteria for this purpose, and when they did, they studied the effects of this discontinuity on older beneficiaries (over 45 years) (Chen & Van der Klaauw, 2008; Müller & Boes, 2020). Very few address the effect of disability programs on youth. Using merged survey data and administrative data for the 1990s, Chen & Van der Klaauw (2008) have exploited the fuzzy discontinuity in the disability insurance allocation scheme in the United States generated by the program's eligibility rules for "marginal applicants" to explore the impacts on beneficiaries at ages 45, 50 and 55. These applicants are those for whom occupational factors (age, education, work experience, etc.) need to be considered, in addition to medical factors, in the decision to award disability insurance because of the difficulty in assessing their health status. The study finds that in the absence of the disability insurance, the employment rate of this group 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 a discontinuity in the disability insurance allocation in Switzerland that occurs at age 56, applying in particular a fuzzy regression discontinuity. A common practice of disability insurance offices is 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). Their study shows that being in receipt of these benefits decreases the probability of having full-time work (by about 35 percentage points), increases the probability of working part time

(by about 32 percentage points) 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 able recipients, and those with middle to high incomes, while the shift from active to inactive is more likely to be found among women, less able recipients, and those with low incomes.

Another related study, although not one 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 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 ability to work that can be effectively encouraged by financial incentives to work. These incentives would lead to an increase in their income and a reduction in program costs.

3 Background

3.1 Institutional background

The *Allocation aux Adultes Handicapés* (AAH) is a French social benefit that ensures a minimum income for persons with disabilities. It was created by the law *D'Orientation en Faveur des Personnes Handicapées*, June 30, 1975.⁵ In 2018, 9.71 billion euros were spent on the AAH out of the total 742.11 billion euros spent on social protection benefits.⁶ In France in terms of the number of recipients, the AAH is the first financial support for persons with disabilities and the second largest minimum social benefit behind the *Revenu de Solidarité Active* with 1.24 million beneficiaries at the end of 2020 against 1.22 million at the end of 2019.⁷

The amount of the AAH is below the monetary poverty threshold, set at 60% of median income. As of November 1, 2019, the AAH amounted to 900 euros per month for a single person without children, while the poverty line was 1,102 euros per month.⁸

⁵Orientation in Favour of Persons with Disabilities, June 30, 1975.

⁶Drees. "La protection sociale en France et en Europe en 2018 - Résultats des comptes de la protection sociale", édition 2020.

⁷Drees. "Minima Sociaux et Prestations Sociales - Ménages aux Revenus Modestes et Redistribution", édition 2021.

⁸INSEE. "En 2019, le niveau de vie médian augmente nettement et le taux de pauvreté diminue", INSEE

This means-tested benefit is claimed by filling in an application form and sending it to the *Maison Départementale des Personnes Handicapées* (MDPH) located in the applicant's area of residence. If the request is 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 permanently depending on the level of impairment.⁹ In case of professional activity in a mainstream work environment, a declaration of resources must be sent quarterly so that the amount of the benefit can be calculated by 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 must be met. First, there are health conditions which are examined by the CDAPH. The MDPH's multidisciplinary team attribute a level of disability according to a guide scale (*guide-barème*)¹⁰, which is used by the CDAPH as a basis for deciding on the allocation of the AAH. The applicant must have a long-term disability with an activity restriction of 80% or between 50% and 79% for the CDAPH to recognize that the applicant has substantial and lasting limitations in accessing employment due to his or her disability.¹¹

Administrative conditions must also be met and are reviewed by the paying agencies. The applicant must reside in France¹² and be at least 20 years old (or at least 16 years old if he or she is living independently of his or her parents). The amount of the AAH depends on the applicant's 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.

première, n°1875, octobre 2021.

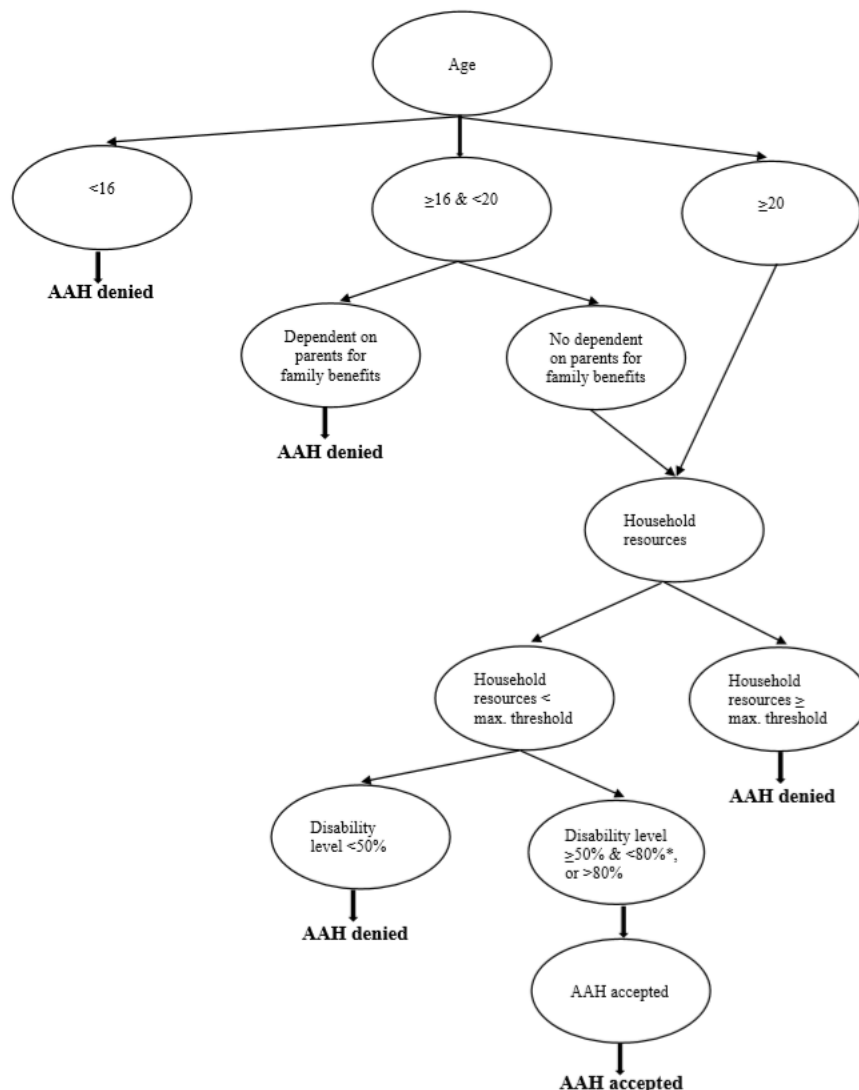
⁹AAH is paid for a minimum period of 1 year. For beneficiaries whose level of disability is between 50% and 79%, the maximum duration of allocation is 2 years if the CDAPH believes that their incapacity can improve during this period, and 5 years otherwise. In any case, it ceases to be paid from the 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 it is believed that their activity limitation can improve (the maximum was 10 years before 2017), and otherwise for life.

¹⁰Appendix 2-4 of the French Social Action and Family Code.

¹¹The restriction is considered substantial if the difficulties encountered in accessing employment are significant 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.

¹²In 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.

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 of the benefit. The amount of the benefit is also calculated according to the amount of the household's professional income.¹³

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 *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

¹³The net income of the household of the year before last (N-2) is taken into account.

period, work income are deducted from the allowance with an abatement mechanism when the individual works in a mainstream environment: it is then a "differential AAH". The abatement rate, i.e. the marginal tax rate, depends on the amounts earned: 80 % below 30% of the gross monthly minimum wage¹⁴ (i.e. 20% of the income will be taken into account to reduce the amount of the AAH) and 40% above (i.e. 60% of the income will be taken into account to reduce the amount of the AAH). 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:

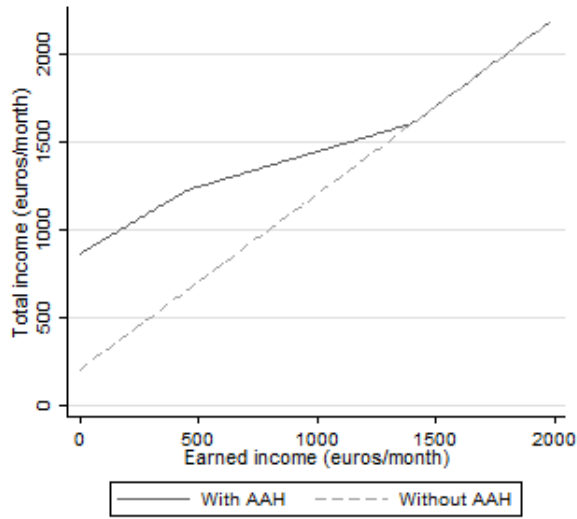
$$\begin{aligned} \text{Total income} = \text{earned income} + \text{AAH} - 20\% \times \text{earned income} &\leq \text{€}456 \\ &- 60\% \times (\text{earned income} > \text{€}456 - 456) \quad (1) \end{aligned}$$

Figure 2 presents the budget constraint of a single individual without children. The dashed line corresponds to his/her budget constraint when he/she cannot benefit from AAH (before age 20 for most individuals) and the solid line to his/her budget constraint with AAH.¹⁵ 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.

¹⁴In 2019, the gross monthly minimum wage was €1,521.22. 30% of this amount then corresponds to approximately €456.

¹⁵The budget constraint with AAH corresponds to the situation where the initial 6-months abatement rate of 100% has ended.

Figure 2. Total income with and without AAH



Note: 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 negatively impact the labor supply by having 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 and/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. The prevalence of part-time work among persons with disabilities (Pagan, 2007) is largely explained by their health status (Schur, 2003). 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 *collège*. At the end of *collège*, around the age of 16, students pass the *brevet national* exam.¹⁶ 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’Études 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.

School is compulsory until the age of 16 (with a compulsory training until the age of 18 since the start of the 2020 school year). In terms of schooling, this is the age when students are in their last year of *collège* 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 old. 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. Their non-employment has a social cost (poverty, lack of inclusion, feeling of abandonment), but also an important economic cost

¹⁶Today, 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.

4 Data and sample selection

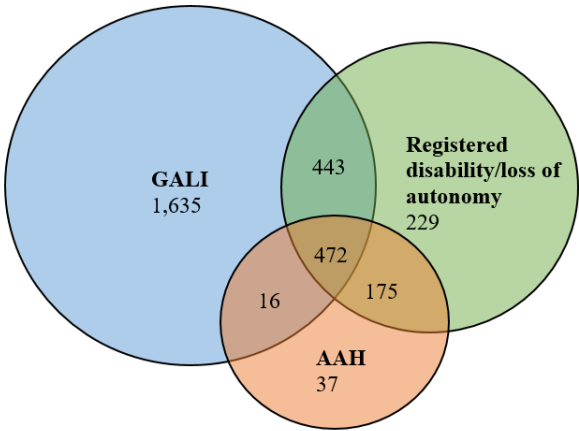
We use data from the French Labor Force Survey (LFS) conducted each year in France by the National Institute of Statistics and Economic Studies (*Institut National de la Statistique et des Études Économiques*, INSEE). This survey is designed to collect information on individuals aged 15 years old and over, living in various groups of approximately 20 adjacent dwellings. A random selection of ordinary dwellings is made and all inhabitants over 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 Labour Organization), occupational activities, education, social benefits, geographic and social origin, health, and individual, household and housing characteristics. Our study focuses on pooled data over the period 2013-2019. Since 2013, information on social benefits and health, and in particular on the disability status of individuals, has been collected. We restrict our sample to individuals with disabilities who are therefore potentially eligible to benefit from the AAH program. More precisely, we restrict the sample to individuals who are either: *i*) limited by a health problem for at least six months in the activities that they usually do (the survey options being ‘strongly limited’, ‘limited but not strongly’ or ‘not limited’), *ii*) registered administratively as disabled or as having a loss of autonomy (the survey options being ‘yes’, ‘request in progress’ or ‘no’), *iii*) recipient of the AAH (the survey options being ‘yes’ or ‘no’).

The first variable used to assess disability is the Global Activity Limitation Indicator (GALI). GALI is considered to be a relevant, valid and reliable overall 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 aspects of disability¹⁷ to be combined in a single question. However, since GALI is a self-reporting indi-

¹⁷In 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

cator 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 also take a frequently used administrative variable into account (in addition to the AAH): the administrative registration of disability/loss of autonomy.¹⁸ The use of these different indicators is justified by the complexity of the nature of disability and allows us to approach disability in different ways, since not all individuals respond to all three indicators in the same way or at the same time¹⁹ as shown in Figure 3.

Figure 3. Respondents aged 18-25 identified as potentially having a disability based on the indicators used



Note: This figure reports numbers of observations in our sample by the disability variable(s) considered.
 Source: French Labor Force Surveys 2013-2019.

We also consider individuals with a level of education lower than *baccalauréat* diploma. Thus, the highest level of diploma included is the CAP or the BEP which are vocational qualification certificates. There are two main reasons for this choice. Firstly, low-skilled individuals are expected to be more sensitive to financial incentive. The wage that they could receive tends to be lower than for individuals with a higher level of education and is in more direct competition with social allowances. Restricting the sample to low-skilled individuals with less than a *baccalauréat* diploma also ensures that they are available for work after age

permanent impairment of one or more physical, sensory, mental, cognitive or psychic functions, a multiple disability or a disabling health condition”.

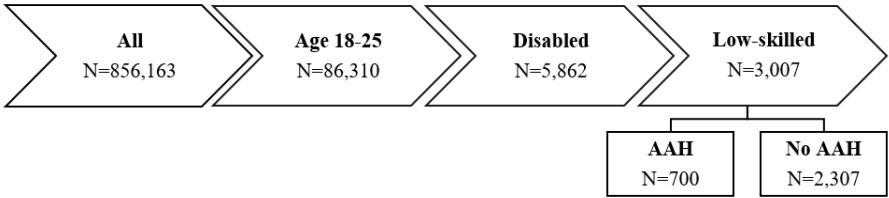
¹⁸We do not take into account the individuals who have not responded to the questions about the GALI, the AAH or the administrative recognition of a disability (i.e. when they do not answer, or declare not to know about the GALI or the registration of disability/loss of autonomy, or when their application for registration is pending).

¹⁹37 individuals declare having the AAH without having an activity limitation or a registered disability. Since GALI is a declarative and subjective variable, a disabled person receiving the AAH may, for example, consider that he/she has no limitation of activity or restriction of participation in society because his/her environment is adapted. Conversely, he/she may could have a low level of disability but feel strongly limited.

18. Finally, we focus on individuals aged between 18 and 25. We made this decision because, although people may work from age 16 onwards and we focus on young people with little education, some may still be in school between 16 and 18. For example, the CAP and BEP certificates are usually awarded between the ages of 16 and 17 but repeating a school year is not uncommon in France, so it is more prudent to limit the sample to those over 18. The upper limit of 25 years is chosen arbitrarily but we performed sensitivity analysis on the age window as explained below.

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

Figure 4. Sample selection



Source: French Labor Force Surveys 2013-2019.

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 find out if there is a significant increase in the uptake of this AAH by youth with disabilities at the age of 20 and if there is, if the AAH has an effect on the probability of employment of its beneficiaries. This corresponds to a fuzzy regression discontinuity design (RDD). Indeed, even if age is perfectly measured, there is some discrepancy around the discontinuity since it is possible to receive the AAH before age 20 under certain conditions. Because the first and second stages have binary outcomes, an approach using nonlinear instrumental variables appears to be the most appropriate one (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 employment 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/she benefits from the allowance.

X_{ia} is a set of controls (gender, nationality, the *département*²⁰ of residence of the individual and the year and quarter of the survey).²¹ As indicated by [Lee & Lemieux \(2010\)](#), if the RD design is valid, it is not necessary to include the controls 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*, we can increase the precision of the estimates by including *départements* fixed effects.

$f(\cdot)$ and $g(\cdot)$ are polynomials of 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 regression discontinuity design: the lower the δ , the fuzzier the design and the greater 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

²⁰In France a *département* is a geographical and administrative unit that can be thought of as a county. There are 101 of them with an average population of about 660,000 inhabitants.

²¹As indicated by [Lee & Lemieux \(2010\)](#), time dummies can be treated like any other baseline covariate in an RDD setting.

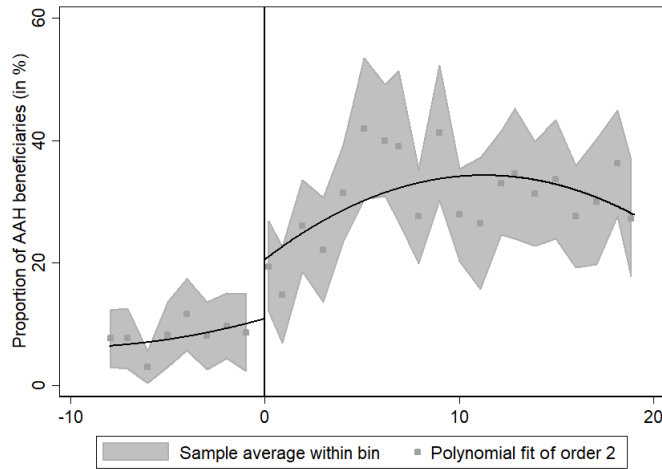
profiles, but there is no reason – based on human capital or related theories of behavior over the life cycle and given the absence of particular fiscal or labor market policies – to expect an abrupt change at a particular age like 20 or 25. The running variable is the age measured by quarter. Although age is available in days, we believe that it is unlikely that any response to the treatment would occur at this temporal level. In consequence, the running variable is discrete and we 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 a 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 people become eligible for the AAH. Some people may have been eligible before age 20 if they were no longer dependent on their family, which explains why the proportion of beneficiaries below this age was low but not null. After age 20, the proportion of youth with disabilities who are AAH beneficiaries jumps to about 30%. There are various reasons to explain why this proportion remains far from 100%. Our sample is restricted to people who have some minimum level of health limitations and therefore potentially meet the eligibility criteria for AAH. However, we cannot be sure that they are all eligible because we do not have exactly the same information as the administration that determines eligibility for AAH. For example, the degree of disability of respondents is not known. Also, they may not be eligible because their earned income is too high. It is also possible that some of these people are eligible but choose not to avail of the AAH program since a phenomenon of non-take-up has been observed in many means-tested programs (Chareyron & Domingues, 2018).

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

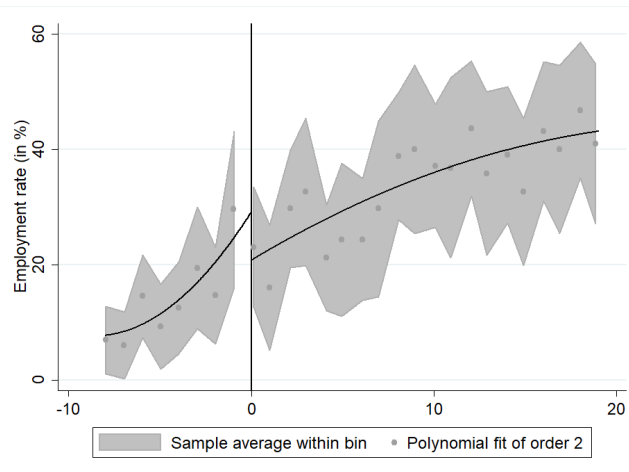


Note: 0 represents the first quarter of age 20. Shaded areas correspond to 99% confidence intervals.

Source: French Labor Force Surveys 2013-2019.

Figure 6 shows the relationship between age and employment rate. Again, there is a clearly visible discontinuity at age 20 with a distinct drop in the employment rate after this cut-off. Except for this discontinuity, there appears to be an upward trend in the employment rate throughout 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



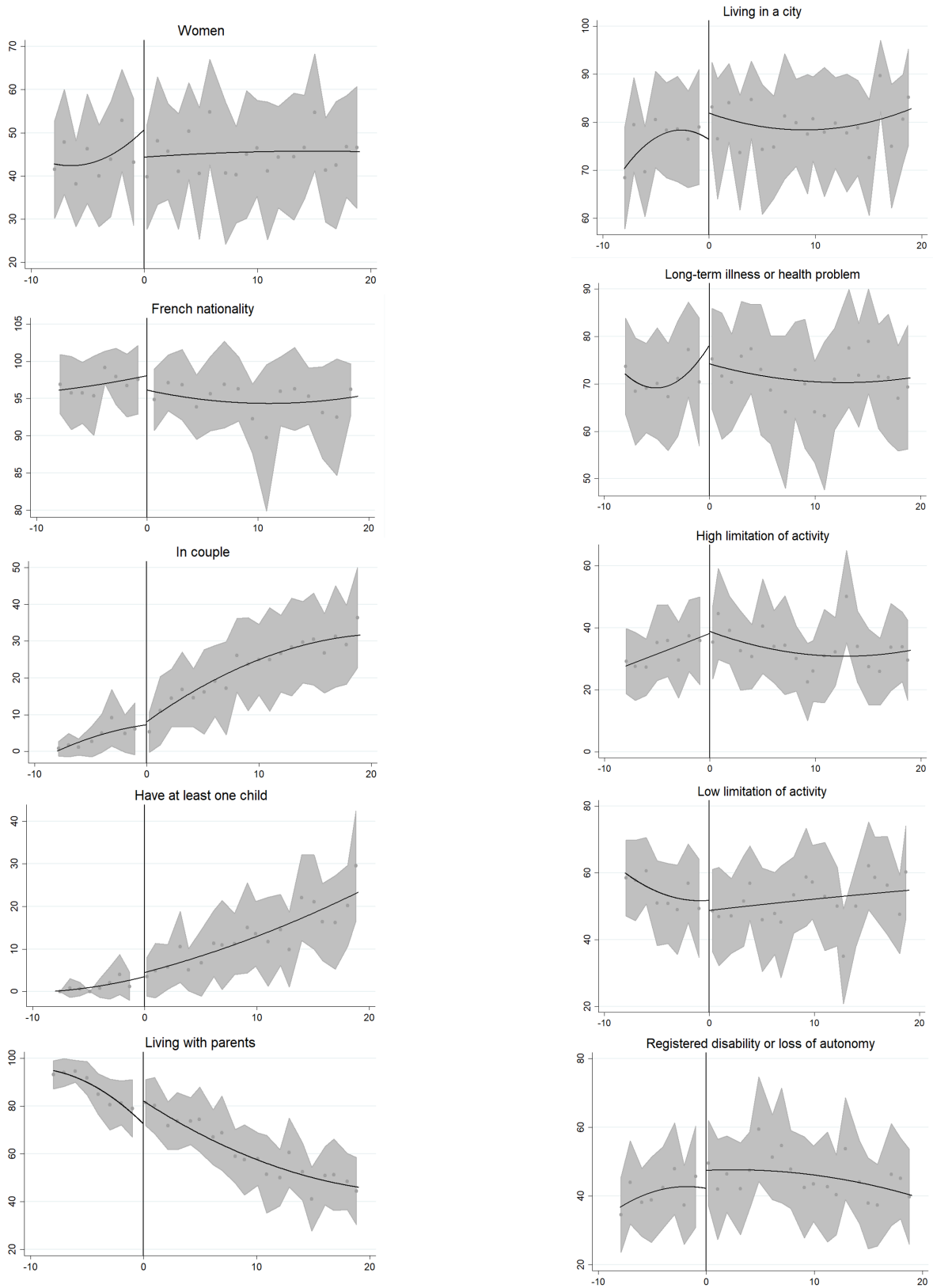
Note: 0 represents the first quarter of age 20. Shaded areas correspond to 99% confidence intervals.

Source: French Labor Force Surveys 2013-2019.

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 the 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 for the assumption we made about the smoothness of the $f(\cdot)$ function. Nevertheless, we include some control variables in our regressions to 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 age 20. Shaded areas correspond to 99% confidence intervals.

Source: French Labor Force Surveys 2013-2019.

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 of benefiting 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 and without control variables. The main estimates are conducted on low-skilled youth with disabilities between the ages of 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 signs 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 when using a linear spline polynomial. We 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 for. Among the different specifications, we choose to favor the linear spline which is the form advised by [Lee & Lemieux \(2010\)](#) because it gives the most conservative effect. The results of the second stage are slightly 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, and this is also the case for individuals under the age of 24 when no controls 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 the findings in previous studies. Using the Bound method, [Maestas et al. \(2013\)](#) found that receipt of the Social Security Disability Insurance (SSDI, the disability insurance program in the United States) is associated with a drop in employment of approximately 28 percentage points in the 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 the Bound approach. They found a smaller response of 6-12 percentage points when a regression discontinuity approach was used 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 employment effect of the AAH, although not notched and providing an income gain for each additional euro earned in wages, appears substantial and not much 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 likely to be particularly sensitive to incentives.

In any case, these results indicate that the absence of a notch in the French disability benefits program is not sufficient to eliminate the work disincentive. This is a different conclusion than the one obtained for the general French minimum income program, where notches were eliminated in a new program design ([Bargain & Doorley, 2011](#)) thereby removing the effect of a slight disincentive to work among low-educated youth that existed in the old program ([Bargain & Vicard, 2014](#)). This difference could be explained by the specificities of the population with disabilities which could induce a more persistent inactivity trap than for the non-disabled population. Indeed, the weakness of the inactivity trap phenomenon obtained for the non-disabled population can be explained by the presence of social pressures that make employment a norm to reach, even if the financial gains it brings are low. This type of phenomenon may be less present for persons with disabilities for whom the social norms regarding employment are different. Moreover, the wages of the low-skilled are more competitive with the minimum social benefits, knowing that the population with disabilities is on average rather low-skilled. They could therefore be more concerned by the trade-off between receiving minimum benefits and income from work.

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. Average marginal effects are presented. Standard errors clustered at age in quarter are in parentheses. Controls are: year and quarter of the survey, gender, nationality and *département* of residence of the individual.

Source: French Labor Force Surveys 2013-2019.

6.3 Robustness

6.3.1 Labor market policies

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

First of all, on the labor supply side, youth can benefit from several types of assisted contracts in the form of work-study programs which include apprenticeship contracts and

work initiation 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 in finding 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 support (e.g. additional aid for training and education with remuneration being maintained during training). They can also benefit from employment assistance (e.g. human and/or material assistance to compensate for their disability).

Employers, and in particular private employers subject to the French employment quota of disabled workers, can also benefit from financial aid when they hire disabled workers (e.g. aid for the reception, integration and professional development of these workers and aid for the adaptation of their work environments). However, this employment quota obligation and these financial supports are not conditional on being over 20 years old. For example, the official disabled worker status which qualifies a person for inclusion in the employment quota of disabled workers is accessible to people over 16 years old, the legal working age.

6.3.2 Manipulation effect

One element for the regression discontinuity design to be valid is that the aggregate distribution of the assignment variable must be continuous around the cut-off.

As stated previously, it is unlikely that the validity of our results could be questioned based on sample selection, since our sample comprises low-skilled youth and, for most people, the level of diploma attained is generally decided before age 20. Another concern could be the possibility of people falsifying their date of birth in the application to gain 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, confirm that the density of the running variable is not affected by the discontinuity. Figure [A1](#) presents the estimated densities of the running variable from local polynomial regression for the two years before and after the cut-off. We observe no graphical evidence of manipulation of the running variable. An equal number of individuals (81) have

one quarter more than 20 years old as those who have one quarter less than 20 years old. The McCrary test confirms the absence of a manipulation effect: the null hypothesis that the density of age is the same just above and below the cut-off cannot be rejected with a p-value of 0.99.

In addition, we decided to retain in our sample those individuals still in education so as to avoid reducing our sample (529 individuals concerned, including 39 AAH recipients). As a robustness check, we reran our estimates by removing these observations. The main results - i.e. those in column 4 - remained similar (Table A1 in appendix), hence the choice to keep these observations.

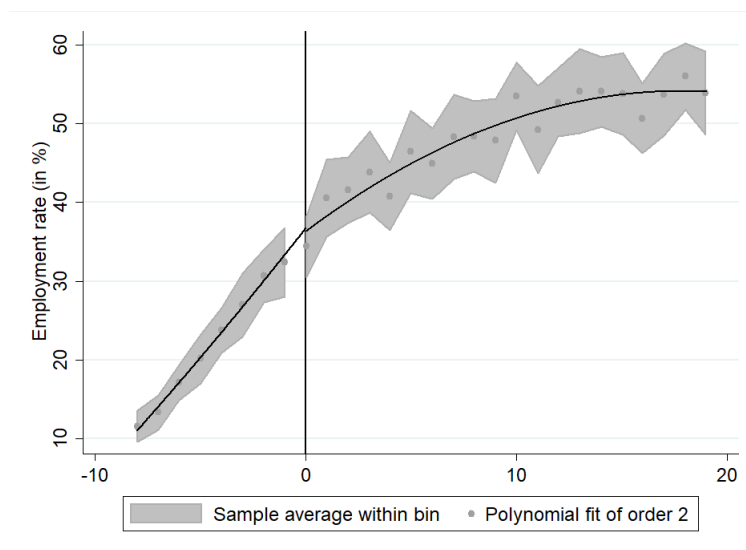
However, as indicated by [Decreuse & Wilemme \(2019\)](#), the impacts of minimum income policies could be underestimated since the search efforts of individuals tend to gradually decrease with age before entitlement when efforts are based on the expected surplus. Indeed, for a person who plans not to work after age 20 because he or she will benefit from the AAH, the incentive to search for a job decreases as age 20 approaches. The discontinuity could, therefore, be reduced. However, we believe that this issue of underestimation is less at stake in our particular case because of the nature of the allowance. The benefit is, in fact, conditioned by age but also by the degree of disability. Except for certain situations of high disability where the uncertainty of obtaining the allowance is low, potential beneficiaries are generally not sure that the administration's assessment of their disability will lead to their eligibility. This should reduce their ability to anticipate the receipt of the allowance by reducing job search efforts before age 20.

6.3.3 Falsification test

As a falsification test, we checked that the age cut-off of 20 years old has no effect on the employment probability of a group that is unaffected 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 presents this relationship. The comparison between the two youth groups (Figure 6) is striking. Contrary to youth with disabilities, there is no sharp decrease in the employment rate at age 20 of the non-disabled group. On the contrary, employment continues 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 age 20. Shaded areas correspond to 99% confidence intervals.

Source: French Labor Force Surveys 2013-2019.

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 GALI.²² The results are presented in Table 2.

We observe that the disincentive to work induced by receipt of the AAH is higher for women than for men.²³ This gender difference may explain why we do not see a completely clear effect in Figure 6. The AAH reduces the probability of employment for women by 43.4 percentage points, whereas we find no significant effect for men. It seems consistent with Simonnet & Danzin's study (2014) on the French minimum income who find did not show any real effect on men. The estimate of the effect on men, however, is highly imprecise as shown by the standard errors, so that we can't conclude that there is no disincentive effect on this

²²The 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 divide the sample into two.

²³The difference is significant at the 5% level according to a Wald test.

population. In any case, this result is in line with previous studies showing that women have the highest elasticity (Eissa & Liebman, 1996; Piketty, 1998; Briard, 2020). More precisely, it is not surprising insofar as people who are more on the margin between employment and non-employment in low-wage jobs, as women, have a particularly high labor supply elasticity. The lack of observations prevented us from studying the effect of the AAH according to the different family configurations (whether the beneficiary is married and/or has at least one child), which can be explained by the young age of the individuals in our sample (age under 25).

We also observe that the disincentive effect is larger for those with a low level of disability (approximated by a low level of activity limitation) than for those with a high level of disability (approximated by a 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 able to work (Hanel, 2012). Moreover, Maestas et al. (2013) showed that receipt of disability insurance decreases by 50 percentage points the employment probability only for those with less severe disabilities. Unlike our study, they find no effect on those with more severe disabilities.

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)	-0.448*** (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. Average marginal effects are presented. 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 residence of the individual.

Source: French Labor Force Surveys 2013-2019.

7.2 Mechanisms

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.

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

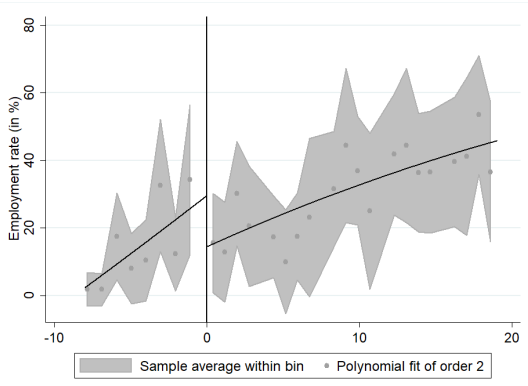
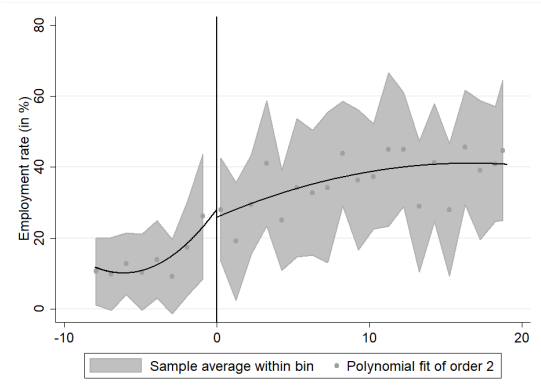


Figure 10. Employment rate of low-skilled young men with disabilities



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

Source: French Labor Force Surveys 2013-2019.

Let us therefore go a little further for this subcategory of the population, by studying the impact of the receipt of AAH on the probability of working part-time, of having an hourly wage higher than the median and of being a job seeker (Table 3).

Beyond the extensive margin, the allowance can also affect the intensive margin by modifying the number of hours of work an individual was willing to offer. However, it is generally not possible to choose the exact number of hours worked, and the decision is mainly between part-time and full-time work. The other two variables (i.e., hourly wage and job search) are related to the mechanisms of the effect. In the standard economic model, individuals choose how much work they want to offer for a fixed level of hourly wage and job search effort. However, both of these factors can be influenced by the allowance. It is therefore interesting to observe whether the effect of the allowance on employment comes only through a change in the number of hours of work offered or also through an increase in the reservation wage or

a decrease in job search effort.

Table 3 shows that the chances of working part-time are increased by 36.5 percentage points (column 2) when these low-skilled 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 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. A possible explanation for this high rate of part-time employment is that it can be a way to reconcile a disability with a professional activity. Besides, 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 and is renewable. In addition to allowing the person's health condition to be adapted to the job, there are some advantages: internal promotion and training rights, the constitution of retirement pension rights, the length of retirement pension insurance and periods of part-time work are counted as full-time for the calculation of advancement (in step and grade). They also benefit from the same leave entitlements.

The allowance does not significantly affect the hourly wage of employed women but significantly reduces the job search efforts of unemployed women by 55.3 percentage points. This indicates that the effect of the AAH on employment is also caused by a reduction in job search effort.

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

	Second stage:					
	Part-time work		Above median hourly wage		Job search	
	(1)	(2)	(3)	(4)	(5)	(6)
Linear Spline	0.439** (0.111)	0.365*** (0.035)	-0.601 (0.422)	0.058 (0.051)	-0.546*** (0.113)	-0.553*** (0.027)
N. Obs	348	348	262	262	1002	1002
Controls	NO	YES	NO	YES	NO	YES

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Average marginal effects are presented. 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 residence of the individual. The results in columns (1) to (4) are obtained from estimates for employed individuals. The results in columns (5) to (6) are obtained from estimates for unemployed individuals. The outcome "Part-time" takes the value 1 when the young woman works part-time and 0 otherwise. The outcome "Above median hourly wage" takes the value 1 when the young woman has an hourly wage above the median of the sample and 0 otherwise. The outcome "Job search" takes the value 1 when the young woman has completed at least one active job search in the previous 4 weeks and 0 otherwise.

Source: French Labor Force Surveys 2013-2019.

8 Conclusion

To combat the precarious situation of persons with disabilities, disability benefit is granted under certain conditions. A few countries, including France, have designed these programs so that it is always financially more advantageous to work even while receiving these benefits. The objective is to promote the inclusion of this population in the labor market while avoiding the creation of an inactivity trap. In this study, we focus on the French allowance scheme for disabled adults (*Allocation aux Adultes Handicapés*, AAH), an original disability benefits program designed to incentivize work. It is one of the largest social assistance programs in France, yet its effects has never been evaluated. We evaluate the effect of this disability benefits program on employment of youth under age 25. To do this, we used an age-related discontinuity in the eligibility criteria: beneficiaries must be at least 20 years old (or at least 16 years old if they live independently of their parents). We used data from the French Labor Force Survey for the years 2013 through 2019 and we focused on low-skilled youth with

disabilities (who have not attained the academic qualification of the *Baccalauréat*, the French high school diploma).

We can draw two main conclusions from our study. Firstly, receiving the AAH has a negative effect on the employment rate of low-skilled youth with disabilities since it decreases their chance of being employed by 27.5 percentage points. This effect is particularly important for woman: about 43 percentage points. 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 women, we observe that the AAH has an effect on both the intensive and extensive margins: receiving these benefits increases the probability of women working part-time by about 36.5 percentage points. The AAH also reduces their job search effort by 55.3 percentage points but has no significant effect on their reservation wage.

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 (i.e. youth with a low level of education), our results also tend to indicate that even a program without a notch, designed to incentivize work, can have a substantial negative impact on labor force participation. A set of public policies have been implemented in recent decades to promote the employment of persons with disabilities, for instance with the obligation to employ disabled workers or the obligation to adapt the workstation in France, but more is needed on the supply and demand side of the labor market together.

The disincentive effect of the AAH may be due to a difference in social norms regarding employment between persons with and without disabilities, but also to the small gap between the AAH and the wage that recipients could expect from a job. A solution could be to reduce the trade-off between the AAH and work income. This could be done by improving their level of qualification, in order to qualify for higher wages and service occupations, and thus promote equal opportunities. In order to increase their level of qualification, public policies could operate at three levels: improve inclusion in the education system, promote support in the transition from school to the labor market (by further developing internships and apprenticeships, but also to set up a support service for the transition to employment²⁴)

²⁴In 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.

and promote vocational training. These policies should target the most incentive-sensitive population to counteract the disincentive effect of the AAH: young women 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.

In addition to promoting the inclusion of low-skilled youth with disabilities and (quasi) financial independence, promoting their employment could also benefit to companies that could 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 variable GALI used to define the disabled population, which is declarative. Furthermore, we do not know the degree of disability of the individuals studied, nor whether they are able to work. Since we used the regression discontinuity method, our results are only valid for the population around the cut-off (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 quite 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 and of the steps to take to apply, etc.). The AAH will therefore be likely to have different effects on an older population. Finally, this study does not examine the effects of the AAH on employment according to different family configurations (marital status and parenthood). We leave these lines of inquiry for future studies.

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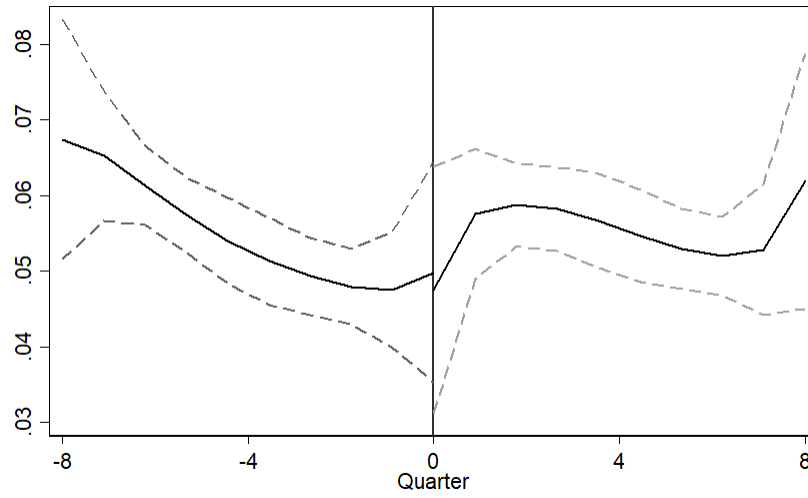
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Appendix

Figure A1. Density of the running variable



Note: 0 represents the first quarter of 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 cut-off. The dashed lines are confidence intervals at the 99% level.

Source: French Labor Force Surveys 2013-2019.

Table A1. 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. Average marginal effects are presented. Standard errors clustered at the age in quarter are in parentheses. Controls are: year and quarter of the survey, gender, nationality and *département* of residence of the individual.

Source: French Labor Force Surveys 2013-2019.