

How does disability affect school-to-work transitions? Evidence from a French labour market integration survey

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Abstract: Young people with disabilities face major challenges when they leave school and enter the labour market, hindering their professional trajectories and social integration from the start of their adult lives. The aim of this paper is to investigate the school-to-work transitions and early employment trajectories of young workers with disabilities. Using a survey following a cohort of French young workers exiting education in 2013 on their first three years on the labour market, I estimate the effect of disability on the probability of finding a (stable) job using duration models. I use several disability indicators to explore how the different definitions affect the results. Overall, I find that disability increases the duration of the transition to (stable) employment at the beginning of the career. This effect is higher when the disability is administratively recognised than when self-reported. I also show that the gap between disabled and non-disabled workers is somewhat lower among the most educated, and is higher for women than for men. Besides, mental disabilities appear to be more detrimental on the school-to-work transitions than other types of disabilities.

Keywords: disability, school-to-work transitions, labour market inequalities, access to employment, duration models

JEL Classification: C41, I14, I24, J14, J24

Introduction

People with disability account for around 15% of the working age population in OECD countries. While increasing over time, their employment rate remains low, around 45% against 70% for people without disability (OECD 2022), despite the implementation of public policies to promote their access to employment in many countries. More generally, disabled workers face lower labour market prospects (see Jones 2008 for a detailed review), not only in terms of employment (French and Song 2014; Lechner and Vazquez-Alvarez 2011; Schur et al. 2013), but also in terms of earnings (Baldwin and Johnson 2000; Jones et al. 2006) and employability (Baert 2016; Bellemare et al. 2023; L'Horty et al. 2022). This can be related to individual limitations in the access to jobs (related to the physical or mental ability to perform some tasks), individual choices or self-selection in particular type of contracts (Hotchkiss 2004; Schur 2002), lower incentives to stay on the labour market because of public transfers or benefits (Bound and Waidmann 1992; Chareyron and Mahmoudi, 2022; Gruber 2000), or discrimination, notably because of a lower productivity expected by employers (see e.g., the meta-analysis by Lippens et al. 2023). In this context, school-to-work transitions, which are already complex for people without disability, could be even more so for young disabled people (Taylor et al. 2021), with potential negative consequences on their career in the long term (von Wachter 2020). This is reflected by the higher-than-average unemployment rate of disabled people aged between 15 and 24, which was around 34% in 2020, compared with an average of 21% for the same age group as a whole.

The stakes involved in integrating young disabled people into the labour market are high, because of the significant long-term costs both for the individual in terms of social inclusion, and for society as a whole, especially due to the financial burden on social security systems (Luecking and Wittenburg 2009; Taylor et al. 2021; Wittenburg et al. 2013). Many countries have introduced programmes to support the employment of individuals with disability, on both the supply (dedicated employment agency services, access to work accommodations) and demand (hiring subsidies, quota policies) sides. In particular, programmes aiming to support disabled young people' transition to adulthood have a positive long-term effect on their labour market outcomes (Dean et al. 2019). Empirical evidence however suggests that supply side policies are not sufficient (Wittenburg et al. 2013) and that demand side policies can even have adverse effects on employment (Barnay et al. 2019; Jiménez-Martin et al. 2019).

The aim of this work is to document how school-to-work transitions are affected by disability, by conducting a survival analysis on the access to (stable) employment. Using the *Génération 2013* survey from Céreq (French Centre for Studies and Research on Qualifications), I follow a sample of young people exiting the regular educational system in 2013 until 2016. This enables to draw up the profile of the school-to-work transitions over the 36 months following graduation. I estimate the effect of disability on the probability of finding

a (stable) job using duration models. I distinguish between educational levels, as disabled workers are on average less educated than the others (Schur et al. 2013). I also estimate a model allowing to explore the differences between types of disability, as different impairments may entail different difficulties in the professional life. Moreover, some disabilities, such as mental illness, are associated to strong stigma effects on the labour market (Hipes et al. 2016), while others tend to have lower detrimental effects, such as hearing impairments (Boman et al. 2015).

This study contributes to the understanding of how disability affect labour market positions, a topic which remains understudied in the literature, especially looking at young workers. I find that disability increases the duration of the transition to (stable) employment at the beginning of the career. While this effect is higher when the disability is administratively recognised, I find a significant negative effect regardless of the disability indicator. This implies that some individuals suffer from adverse effects on employment because of their health status without being eligible to disability benefits in compensation. I also evidence disparities by educational level, the gap between disabled and non-disabled workers being somewhat lower among the most educated. Besides, mental disabilities appear to have a greater negative impact on the school-to-work transitions than other types of disabilities.

This paper is organised as follows. Section “Background” provides a review of the literature and an overlook on the French institutional context regarding disability. Section “Methodology” presents the data and the econometric model, and provides some descriptive statistics. Section “Results” exposes and discusses the results. Section “Conclusion” concludes.

Background

Literature review

This work is at the crossroads of the literature on school-to-work transitions on the one hand, and on disability and the labour market on the other hand.

School-to-work transitions are the subject of an abundant literature in labour economics (see Pastore 2015; Ryan 2001, for reviews on this topic), because of the difficulties encountered by young people at the beginning of their careers. Indeed, young workers entering the labour market suffer from lower professional perspectives (Bell and Blanchflower 2011; Blanchflower and Freeman 2000). They are more often unemployed and more often work in precarious and/or lower quality jobs, notably because of their lack of professional experience (Topel and Ward 1992). Young workers also face a higher competition on the labour market (Dolado et al. 2000), often to the detriment of people socially disadvantaged (Caroleo et al. 2020; Ryan, 2001). School-to-work transitions tend to be faster for more educated workers (Pastore et al. 2021) and for those with work experience in parallel of their studies (Bonnal et al. 2002). Since they are on average less educated (Schur et al. 2013), have issues with internships during their studies (Cunnah 2015) and suffer from exclusion at school (Le Laidier 2015), young disabled individuals might experience additional challenges when entering the labour market.

A strand of the literature about disability and the labour market uses correspondence tests to evidence hiring discrimination on the basis of disability (see e.g., Ameri et al. 2018; Baert 2016; Bellemare et al. 2023; Hipes et al. 2016; L’Horty et al. 2022; Ravaud et al. 1992, about different types of disabilities in various countries). Results are fairly unanimous: signaling a disability significantly reduces the probability of a positive callback. However, the magnitude of the discrimination varies with the disability, but also depending on the occupation (Bellemare et al. 2023; Ravaud et al. 1992) or the qualification of individuals (Ameri et al. 2018). Another part of the literature focuses on the effects of disability on earnings and employment (Baldwin and Johnson 2000; Jones et al. 2006; Lechner and Vazquez-Alvarez 2011). Most studies evidence a wage penalty towards disabled workers, even after controlling for differences of productivity. The effect of disability on employment is also negative, with an over-representation of disabled workers in atypical (part-time, temporary, etc.) contracts (Hotchkiss 2004; Schur 2002). Part of this negative effect on employment can be attributed to public policies increasing disability benefits (Bound and Waidmann 1992; French and Song 2014; Gruber 2000), although Acemoglu and Angrist (2001) show that this occurs only in conjunction with other factors, such as legal constraints on the adaptation of the workplace.

The French institutional context

In France, 2.7 million people have a registered disability, representing 6.5% of the working age population (15-64 years old). While the incidence of disability increases with age, around 8% of disabled people are under 30. Regardless of their age, the law of February 11, 2005, aims to ensure that people with disabilities have the same access to fundamental rights as people without disability, in all aspects of daily life.

In terms of education, the law of July 8, 2013, lays the foundations for an “inclusive school”, stating that any child must have access to education and school life in the same conditions as any other child. To achieve this, schools must adopt measures and adjustments (for instance, providing human support, adapting timetables or school equipment). As a result, the number of disabled children attending regular schools has risen over the last 20 years, from 134,000 in 2004 to 384,000 in 2020 (IGF & IGESR 2022), and around 80,000 were enrolled in medical-educational institutions (French Ministry of Education data). However, the reality of inclusive education appears to be mixed: the accessibility adjustments remain insufficient and sometimes irrelevant (Le Laidier 2015), human support is limited (IGF & IGESR 2022) and children with disability are often discriminated against at school (Bouvier and Niel 2010). Besides, students with disability remain underrepresented in higher education (Ebersold et al. 2016). Around 40,000 students were enrolled in public universities in 2020 (MESR-SIES 2023), half of them studying Humanities. They were overrepresented in the first cycle (Bachelor’s degree), but largely underrepresented in Master’s degrees and PhD. Moreover, despite the increasing number of disabled children in education, they still are more likely to end up as NEET (Mauro and Mitra 2020), i.e. Not in Employment, Education or Training.

On the labour market, both quota and anti-discrimination policies are implemented to improve the access to employment of people with disability. Similar to what is expected from schools, companies must adopt “necessary and appropriate” measures to facilitate the access of disabled workers to jobs (workstation adaptation, etc.) since the law of February 11, 2005, otherwise it would be considered as discrimination. There are also institutions aiming to support disabled people integration on the labour market. The *Cap Emploi* services, associated to the French employment agency, are designed to help people with disabilities find and keep jobs. Disabled workers can also be eligible to subsidised contracts, which reduce the cost for companies to hire them. Besides, the law of July 10, 1987, states that all establishments, public or private, with 20 or more employees have to hire at least 6% of disabled workers. Since the law of September 5, 2018, this 6% quota must be applied at the scale of the companies, whether they have one or several establishments. If this obligation is not met, companies must pay a financial penalty in the form of a contribution to an organisation working for the social and professional integration of disabled people. Still, many companies prefer to pay this penalty rather than employing disabled workers (Barnay et al. 2019): in 2022, workers with disability represented only 3.5% of the total workforce of eligible companies (Collet 2023).

Methodology

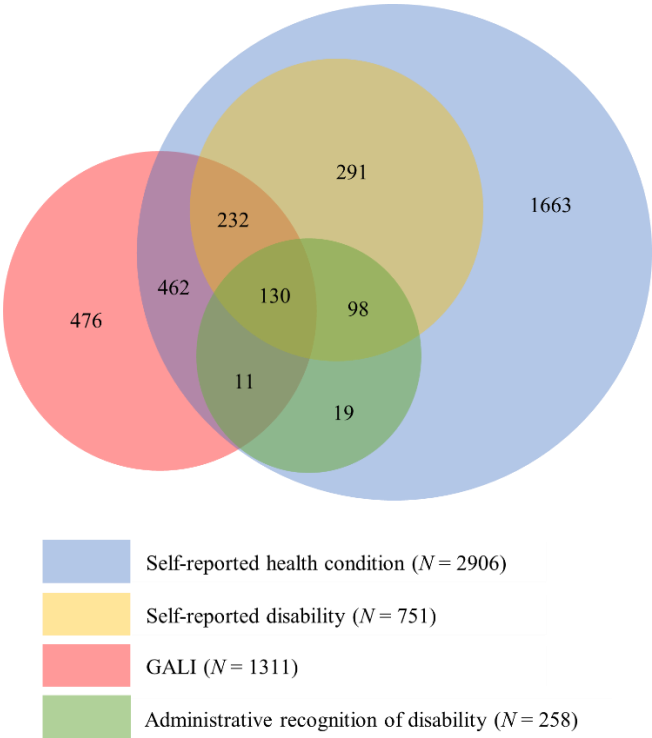
Data

In this work, I use data from the *Génération 2013* survey from Céreq, which documents the entry and the trajectories during the first years on the French labour market of around 20,000 individuals who left school for the first time between October 2012 and October 2013. This dataset provides sociodemographic information about individuals (gender, age, social origin, education), as well as a monthly professional calendar of their successive labour market positions between graduation and the time at which they were interrogated. This specific wave of the survey also contains information about disability, enabling to study its effects on school-to-work transitions. I study the impact of disability on the access to the first job, and more specifically the monthly probability of finding a job, over the 36 months following graduation. I consider both the transition to any first job and the transition to the first stable job, i.e., the first job with a permanent work contract.

There are multiple definitions of disability, based on a variety of criteria, which shed light on its different aspects. I consider four different approaches to explore how the definition of disability can affect the results. The first two definitions are based on direct self-assessments of individuals about their health. I consider (1) individuals who report having a long-term health condition and (2) individuals who specifically report having a disability. The third indicator that I use is the Global Activity Limitation Indicator (GALI), which provides a reliable indicator of disability based on indirect self-assessment of individuals about limitations they encounter in their daily life (Van Oyen et al. 2006, 2018). Using this indicator, individuals are considered

as disabled if they declare being limited in their activities for at least six months. Finally, I build a dummy variable of disability based on the administrative recognition of disability. Using this information, I consider individuals as disabled if they have the legal “Recognition of the Status of Worker with Disability” (RSWD) and/or if they perceive disability benefits. In the main specification, I use a dummy variable equal to one if the individual is disabled according to any of these indicators. I then run a heterogeneity analysis (Section 4.3) to explore how the definition of disability affects the results. I exclude from the analysis the 22 individuals whose disability appeared during the school-to-work transition period (i.e., after graduation), as the mechanisms at stake might be different from those for people suffering from long-term disability. Statistically, this could also create a break in their probability of finding a job, which violates the assumptions of the model. The number of disabled workers according to each disability indicator is reported in Figure 1. The different definitions of disability do not perfectly overlap: only 130 individuals are considered as disabled according to all four indicators. Moreover, a large part of individuals self-reporting a disability or a limitation (GALI) are not administratively recognised as such.

Figure 1 - Number of disabled workers by disability indicator



Source: Author's calculation based on *Génération 2013* data.

Model and variables

I use a parametric duration model to analyse the effect of disability on school-to-work transitions. Such models are widely used to study unemployment duration (see e.g., Kiefer 1988

or Lancaster 1979), but the framework can easily be transposed to the study of school-to-work transitions (Manacorda et al. 2017; Pastore et al. 2021; Salas-Velasco 2007).

Based on the goodness-of-fit criteria (AIC and BIC) and the observed data (see the Kaplan-Meier functions in Figures 2, 3 and 4), I use a Weibull distribution. The hazard ratio can thus be written as:

$$h(t_i) = \exp(X_i\beta) p t_i^{p-1}$$

where p is a shape parameter of the duration dependence. If p is greater than one, there is a positive duration dependence, i.e., the hazard ratio increases over time, which implies that the probability of finding a job increases with time. Conversely, if p is lower than one, the instantaneous probability of finding a job decreases over time. All estimations of the model are corrected for unobserved heterogeneity (see $\ln(\theta)$ in Tables 3, 4 and 6), as it generally affects the sign of the duration dependence (Heckman and Borjas 1980; Pastore et al. 2021). This observation is confirmed in the present paper, although it has to be noted that it does not substantially change the results about the effect of disability¹. In this duration model, the effect of the covariates X_i is expressed as a hazard ratio. Similarly to p , a value lower (greater) than one associated to a regressor implies a negative (positive) effect on the instantaneous probability of finding a job, and therefore a longer (shorter) duration until employment.

I include as covariates the gender and age of individuals (at the time of graduation), as well as information about their family background (Caroleo et al. 2020). I include three dummy variables about the parents' occupations: the first equal to one if both parents are managers or professionals, the second equal to one if one parent is manager or professional, the third equal to one if at least one parent is associate manager/professional. I distinguish between four educational levels: absence of diploma (the reference category), secondary education, short-cycle tertiary education (two to four years) and long-cycle tertiary education (five years or more). Finally, I include fixed effects for the region (NUTS2 area) where individuals graduated, to take into account the economic conditions on the regional labour market of entry (Pastore et al. 2021). Unfortunately, the data do not include information about whether individuals with disability work in the protected sector, i.e., in companies with an adapted work environment and hiring specifically disabled workers, or in ordinary companies, which prevents me from exploring this dimension.

Descriptive statistics

Table 1 reports descriptive statistics about the sample. There is no major difference between disabled and non-disabled individuals regarding age and family background. Men are slightly overrepresented among disabled workers. The stronger differences are observed regarding the educational level of individuals. Consistent with previous evidence (Ebersold et al. 2016; Schur et al. 2013), tertiary education graduates are underrepresented among people with disability:

¹ Results without correction for frailty are not reported, but can be provided upon request.

while 60% of the non-disabled workers have a higher education degree, they are only around 45% among workers with disability. Although slightly higher than for non-disabled workers, the absence of diploma is not the norm either among people with disabilities: an important share of disabled people has a secondary degree as their highest level of qualification (around 40% against 35% for non-disabled workers). A large part of individuals in the sample is employed three years after their entry on the labour market, but this share is lower for disabled workers than for non-disabled ones (-8 percentage points). However, for those in employment, job characteristics do not vary much between workers with and without disability: disabled workers are slightly less likely to be in a permanent contract and to work full time, and more likely to work in the public sector, but the gap remains low (around 2 percentage points).

Table 1 - Descriptive statistics

	Non-disabled		Disabled	
	Mean	S.E.	Mean	S.E.
Woman	0.495	0.004	0.461	0.001
Age	22.52	0.027	22.36	0.011
<i>Education</i>				
No degree	0.052	0.004	0.072	0.001
Secondary education	0.354	0.004	0.409	0.001
Short-cycle tertiary education	0.330	0.004	0.309	0.001
Long-cycle tertiary education	0.264	0.003	0.210	0.001
<i>Family background</i>				
Both parents managers	0.172	0.003	0.158	0.001
One parent manager	0.305	0.004	0.297	0.001
One parent associate manager	0.072	0.002	0.070	0.001
No parent (associate) manager	0.451	0.004	0.525	0.002
<i>Type of disability</i>				
Physical disability			0.209	0.001
Sensorial disability			0.117	0.001
Mental disability			0.091	0.001
Other disability			0.568	0.001
<i>Professional position after three years</i>				
Employed	0.786	0.001	0.709	0.001
Permanent job	0.750	0.001	0.729	0.002
Working full-time	0.804	0.001	0.778	0.002
Working in the public sector	0.335	0.001	0.352	0.002
N	16,570		3,382	

Source: Author's calculation based on *Génération 2013* data.

Note: Types of disability sum to less than one as individuals considered as disabled using GALI are not invited to report the kind of limitations they encounter.

Tableau 2 - Descriptive statistics - by disability indicator

	Self-reported health condition		Self-reported disability		GALI		Admin. recognition of disability	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Woman	0.460	0.009	0.555	0.018	0.452	0.002	0.523	0.031
Age	22.45	0.066	22.08	0.139	22.37	0.018	22.93	0.264
<i>Education</i>								
No degree	0.070	0.008	0.11	0.015	0.078	0.002	0.094	0.022
Secondary education	0.395	0.009	0.503	0.018	0.450	0.002	0.484	0.031
Short-cycle tertiary education	0.315	0.009	0.250	0.016	0.277	0.002	0.267	0.028
Long-cycle tertiary education	0.220	0.008	0.136	0.013	0.195	0.002	0.155	0.023
<i>Family background</i>								
Both parents managers	0.160	0.007	0.149	0.013	0.160	0.002	0.151	0.022
One parent manager	0.297	0.008	0.270	0.016	0.289	0.002	0.275	0.028
One parent associate manager	0.071	0.005	0.061	0.009	0.067	0.001	0.078	0.017
No parent (associate) manager	0.472	0.007	0.520	0.018	0.484	0.002	0.496	0.019
<i>Type of disability</i>								
Physical disability	0.242	0.008	0.431	0.018	0.301	0.002	0.395	0.030
Sensorial disability	0.136	0.006	0.278	0.016	0.087	0.001	0.283	0.028
Mental disability	0.105	0.006	0.218	0.015	0.112	0.001	0.295	0.028
Other disability	0.662	0.009	0.377	0.018	0.314	0.002	0.349	0.030
<i>Professional position after three years</i>								
Employed	0.709	0.001	0.614	0.003	0.675	0.002	0.528	0.005
Permanent job	0.725	0.002	0.745	0.005	0.738	0.003	0.732	0.009
Working full-time	0.773	0.002	0.762	0.005	0.766	0.003	0.729	0.009
Working in the public sector	0.351	0.002	0.303	0.005	0.326	0.004	0.385	0.010
N	2906		751		1311		258	

Source: Author's calculation based on *Génération 2013* data.

Note: Types of disability can sum to more than one as individuals can report several health conditions; types of disability sum to less than one for GALI as these individuals are not invited to report the kind of limitations they encounter.

Table 2 details the descriptive statistics depending on the disability indicator. Women are slightly underrepresented among individuals with a self-reported health condition and using the GALI, and overrepresented among individuals with a self-reported or administratively recognised disability. The different indicators also consider different individuals based on the type of disability. Among individuals with a self-reported health condition, two thirds declare an undefined form of disability. Workers with sensorial (visual impairment, hearing impairment, speech impairment) or mental disabilities are underrepresented using GALI. However, it may be due to the fact that the 476 individuals in the category who do not also self-report a health condition are not invited to answer about the kind of limitations they encounter in their everyday life. Overall, physical disabilities appear to be the most common form of impairment in the sample. Finally, there are strong disparities in employment depending on the disability indicator: while 70% of the individuals with a self-reported health condition are employed three years after graduation, only half of those with administrative recognition of their disability are. Nevertheless, there is no major difference in job characteristics for those in employment. This might seem surprising, especially for workers with an administrative

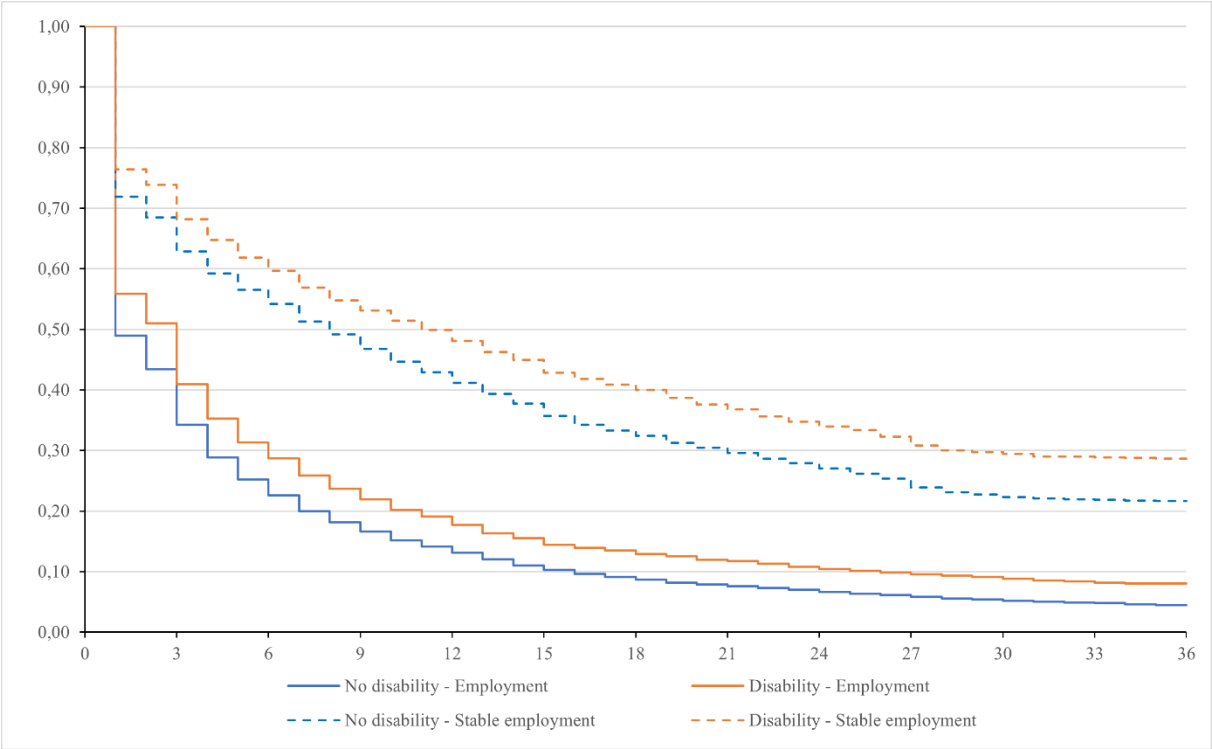
recognition, since they are eligible to adaptations of their work time. However, this suggests that, when they hire disabled workers, companies recruit in priority those who need smaller adaptations of their job.

Results

Kaplan-Meier estimates

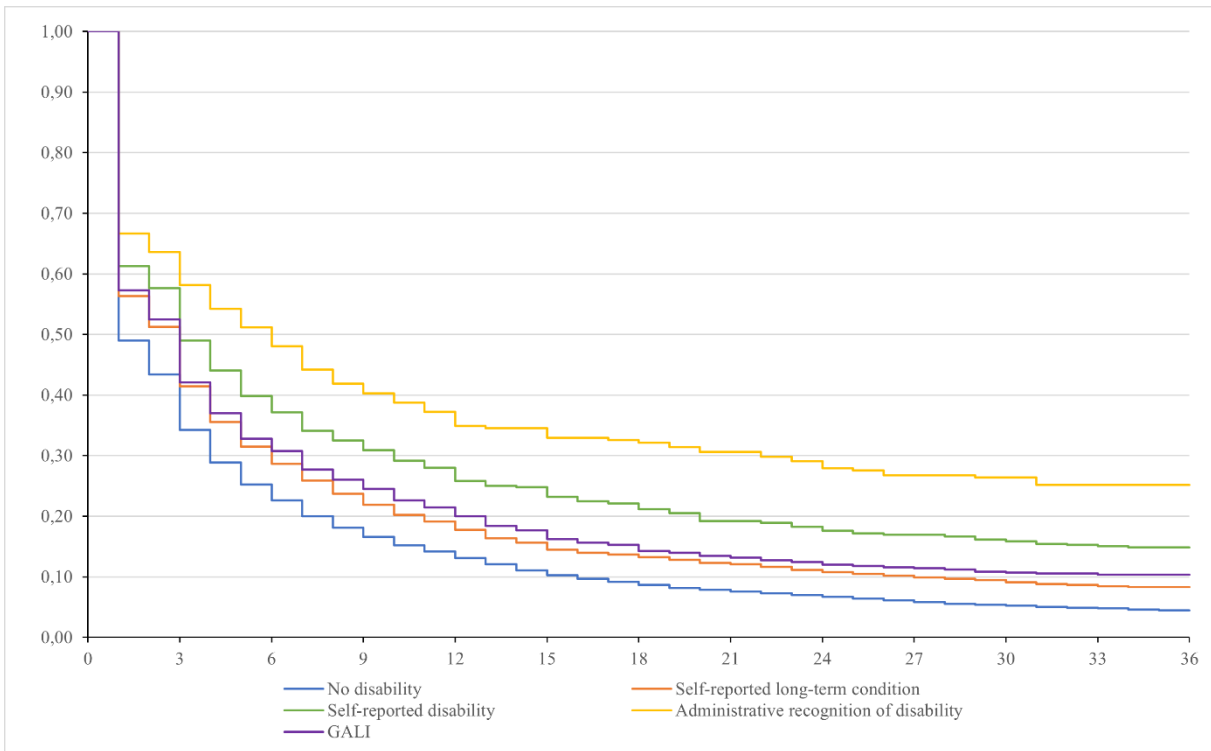
Figure 2 displays the Kaplan-Meier non-parametric survivor functions of individuals with and without disability, for the access to employment and the access to stable employment. Kaplan-Meier estimates correspond to the probability of still being looking for a job a given number of months after graduation (i.e., after time $t = 0$). Among graduates without disability, only 5% are still looking for a first job 36 months after graduation; among disabled individuals, this share is around 8%. The timing of the transition also varies between people with and without disability: it takes only one month to have half of the non-disabled workers to find a job, this duration is three times higher for disabled workers. Transitions to stable employment are slower, which is related to the relatively high occurrence of temporary contracts at the beginning of the career for all young workers (see e.g., Pastore, 2015). After 36 months, almost 80% of the non-disabled workers found a permanent job, against around 70% for disabled workers.

Figure 2 - Kaplan-Meier survivor functions



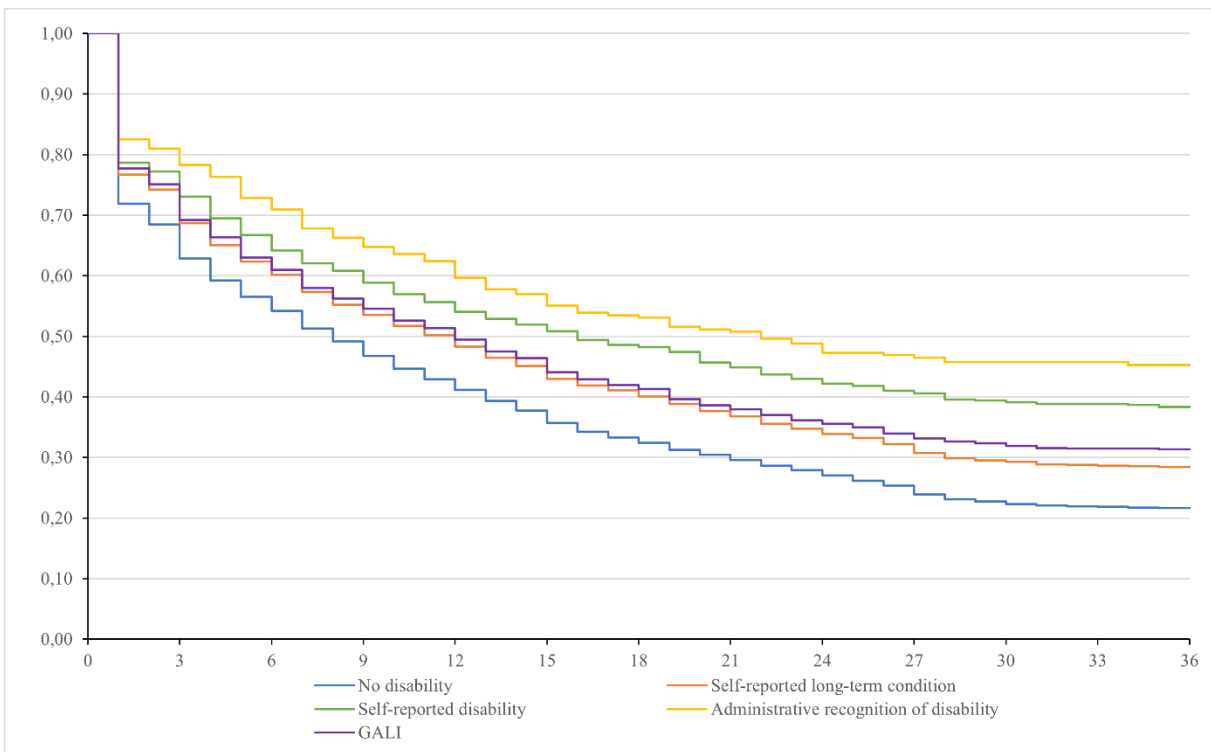
Source: Author’s calculation based on *Génération 2013* data.

Figure 3 - Kaplan-Meier survivor functions by disability status - Transitions to employment



Source: Author's calculation based on *Génération 2013* data.

Figure 4 - Kaplan-Meier survivor functions by disability status - Transitions to stable employment



Source: Author's calculation based on *Génération 2013* data.

To complete the picture, Figures 3 and 4 display the Kaplan-Meier functions, respectively for the access to employment and the access to stable employment, depending on the disability indicator. There are important differences between the different approaches: the share of individuals still looking for a first job 36 months after graduation ranges from 10% to 25% depending on the definition. Transitions are faster for individuals who self-report a disability or a health condition than for workers who have an administrative recognition of their disability (six months for the probability to be below 0.5 for administrative recognition, against three months with the other indicators). Although they do not include the same individuals (see Figure 1), the GALI and self-reported health condition indicators show very similar timings of entry on the labour market.

Effects of disability on the duration of the school-to-work transitions

Table 3 – Determinants of access to employment – Hazard ratios

	(1) Full sample	(2) Education		(3) Gender	
		(a) Low	(b) High	(a) Women	(b) Men
Disability	0.748***	0.691***	0.796***	0.697***	0.800***
Woman	1.008	1.169***	0.891***	-	-
Age	1.042***	1.053***	1.017***	1.034***	1.052***
<i>Education (ref: No degree)</i>					
Secondary education	5.145***	4.564***	-	4.355***	7.098***
Short-cycle tertiary education	8.981***	-	1.361***	6.194***	14.695***
Long-cycle tertiary education	6.034***	-	<i>Ref.</i>	5.151***	8.363***
<i>Family background (ref: No parent manager)</i>					
Both parents managers	1.249***	1.415***	1.160***	1.238***	1.256***
One parent manager	1.171***	1.217***	1.103***	1.162***	1.161***
At least one parent associate manager	1.229***	1.343***	1.133***	1.252***	1.206***
Constant	0.018***	0.019***	0.200***	0.028***	0.009***
ρ	1.293	1.210	1.373	1.285	1.310
$\ln(\theta)$	0.788***	0.970***	0.697***	0.858***	0.727***
Region fixed-effects	Yes	Yes	Yes	Yes	Yes
Log-likelihood	-31,285.99	-13,632.76	-17,404.24	-15,474.94	-15,739.32
AIC	62,639.97	27,329.53	34,872.47	31,015.88	31,544.65
BIC	62,967.60	27,621.32	35,151.84	31,311.50	31,839.26
N	19,434	8,085	11,349	9,499	9,935

*** indicates significance at the 1% level, ** at the 5% level and * at the 10% level.

Source: Author's calculation based on *Génération 2013* data.

Tables 3 and 4 display the effects of the different variables on school-to-work transitions, respectively for the access to employment and the access to stable employment. Overall, coefficients are consistent with previous literature (Caroleo et al. 2020; Pastore et al. 2021), with the exception of gender. Indeed, I do not find any significant effect of gender while the literature generally evidences longer transitions duration for women. The coefficient of interest is the one associated to disability. I evidence a significant negative effect of disability on school-

to-work transitions. Hazard ratios are lower than one, meaning that disability reduces the instantaneous probability of finding a (stable) job, and therefore increases the duration between graduation and the first job: the probability of finding a (stable) job is around 25% lower for workers with disability.

Table 4 – Determinants of access to stable employment – Hazard ratios

	(1) Full sample	(2) Education		(3) Gender	
		(a) Low	(b) High	(a) Women	(b) Men
Disability	0.752***	0.663***	0.814***	0.685***	0.805***
Woman	0.971	0.949	0.977	-	-
Age	1.069***	1.074***	1.055***	1.052***	1.099***
<i>Education (ref: No degree)</i>					
Secondary education	4.437***	4.201***	-	3.908***	5.097***
Short-cycle tertiary education	7.364***	-	1.035	5.930***	8.622***
Long-cycle tertiary education	6.718***	-	<i>Ref.</i>	7.100***	6.098***
<i>Family background (ref: No parent manager)</i>					
Both parents managers	1.294***	1.542***	1.204***	1.383***	1.225***
One parent manager	1.131***	1.185***	1.075*	1.222***	1.044
At least one parent associate manager	1.117***	1.158	1.064	1.160*	1.086
Constant	0.007***	0.009***	0.055***	0.010***	0.003
ρ	1.147	1.079	1.188	1.133	1.169
$\ln(\theta)$	1.624***	1.833***	1.500***	1.680***	1.589***
Region fixed-effects	Yes	Yes	Yes	Yes	Yes
Log-likelihood	-33,343.43	-13,168.67	-20,049.90	-16,258.01	-17,035.90
AIC	66,574.85	26,401.34	40,163.80	32,562.01	34,137.79
BIC	67,112.04	26,717.62	40,475.32	32,886.49	34,460.92
<i>N</i>	19,434	8,085	11,349	9,499	9,935

*** indicates significance at the 1% level, ** at the 5% level and * at the 10% level.

Source: Author's calculation based on *Génération 2013* data.

Since individuals with disability are on average less educated, I run separate duration models distinguishing between low education (secondary education or lower, columns 2a in Tables 3 and 4) and high education (tertiary education, columns 2b). Overall, disability appears to be less disadvantageous for more educated workers. This seems especially true regarding the access to stable employment, the gap in hazard ratios between educational levels being greater than for access to employment. However, it does not imply that having a higher degree improves the labour market prospects and school-to-work transitions of disabled workers, as it might reflect a selection effect depending on the seriousness of their disability: individuals with less severe impairments could be both more likely to pursue longer studies and to find a job more easily. Moreover, even if hazard ratios are higher for more educated workers, they remain lower than one, which implies a negative effect on the probability to find a (stable) job in comparison with non-disabled workers.

I also explore the heterogeneity of the effect of disability across gender. Separate results for women and men are reported respectively in columns 3a and 3b in Tables 3 and 4. For both

access to employment and access to stable employment, I find strong differences between men and women. Disability has a negative effect for both genders, however, the penalty associated to being disabled on the probability of finding a (stable) job is around 20% for men, while it is over 30% for women. This is consistent with previous evidence, which found that women with disability face a “double penalty” on the labour market (Jones et al. 2006). Besides, although not the main interest of this paper, it is worth noticing that women also appear to benefit less from education than men.

Heterogeneity by disability indicator

As shown in Figure 1, disability indicators do not perfectly overlap. Therefore, I estimate the duration models using the different disability variables. Those results are reported in Table 5. As for the access to employment, hazard ratios are similar for workers reporting a long-term health condition or a limitation (GALI), with a probability about 30% lower than for non-disabled workers. The effect is higher for self-reported disability, probabilities of finding a job being about half of those of non-disabled workers.

Table 5 – Effects of disability on school-to-work transitions – by disability indicator – Hazard ratios

	(1) Full sample	(2) Education		(3) Gender	
		(a) Low	(b) High	(a) Women	(b) Men
<u>Access to employment</u>					
Any disability	0.748***	0.691***	0.796***	0.697***	0.800***
Self-reported long-term condition	0.730***	0.681***	0.767***	0.673***	0.788***
Self-reported disability	0.505***	0.507***	0.490***	0.489***	0.519***
GALI	0.679***	0.670***	0.679***	0.664***	0.693***
Administrative recognition of disability	0.255***	0.223***	0.298***	0.197***	0.328***
<u>Access to stable employment</u>					
Any disability	0.752***	0.663***	0.814***	0.685***	0.805***
Self-reported long-term condition	0.739***	0.669***	0.780***	0.670***	0.794***
Self-reported disability	0.573***	0.557***	0.570***	0.547***	0.591***
GALI	0.698***	0.651***	0.726***	0.633***	0.747***
Administrative recognition of disability	0.368***	0.308***	0.419***	0.306***	0.417***

*** indicates significance at the 1% level, ** at the 5% level and * at the 10% level.

Source: Author’s calculation based on *Génération 2013* data.

Note: For sake of clarity, only coefficients of interest (related to disability) are reported in this table. All estimations include control variables for gender, age, education, family background and region fixed effects.

The strongest effect is observed for workers with an administrative recognition of their disability, with the instantaneous probability dropping by around 75%. At first, the gap with the other definitions of disability might seem surprising. However, this result is in line with L’Horty et al. (2022), who evidence greater hiring discrimination for workers with RSWD. One hypothesis is that administrative recognition could be the sign of more serious disabilities with stronger limitations, reducing the employability of those workers. Moreover, from the supply

side, administratively recognised disabled workers are the only ones eligible to disability benefits. Therefore, there might be less incentive (because of lower financial constraints) to find a job for this specific category (Chareyron and Mahmoudi, 2022). The negative effect of disability appears to be lower for the access to stable employment, especially regarding the administrative recognition of disability.

Heterogeneous effects by gender do not vary much across disability indicators. Men invariably have higher hazard ratios than women, and therefore lower penalties on the instantaneous probability of finding a (stable) job. Overall, effects by educational levels are also consistent with those obtained with the main specification. Nevertheless, when observed through GALI or self-reported disability seems to be slightly more detrimental for more educated workers. This might suggest that the limitations associated with these indicators are less compatible with higher skilled jobs. In particular, half of the workers with self-reported disability report mental and sensorial impairments, which are associated to limitations to execute cognitive tasks, more frequent in higher skilled jobs.

Effects of types of disability

Finally, I want to explore the effects of different forms of disability on school-to-work transitions. I therefore run a model including binary variables for physical disabilities (motor impairments and muscular disorders), sensorial disabilities (visual impairment, hearing impairment, speech impairment), mental disabilities and other disabilities, regardless of the disability indicator. Those results are reported in Table 6.

Unsurprisingly, all types of disability are associated with longer school-to-work transitions. However, there is a strong heterogeneity between the different forms of impairment: while physical (and other) disabilities only have moderate negative effects on the probability of finding a job (between -10% and -15%), mental disabilities reduce that same probability by almost two thirds. This is in line with the results of Helgesson et al. (2017), who showed that mental disorders were associated to a strong risk of labour market marginalisation. Interestingly, the negative effect of physical disability disappears when focusing on low education workers (as, to some extent, the effect of sensorial disabilities, which is only barely significant at the 10% level). The opposite could have been expected, as low skilled jobs are often associated with manual tasks, apparently less compatible with motor impairment. On the contrary, the hazard ratio associated to mental disability is higher for more educated workers, meaning that the penalty on the probability of finding a job is lower. This might reflect that psychological impairments allowing to pursue longer studies are less severe and affect less negatively the school-to-work transition. I also observe differences across gender. The effect of physical disability is not significant for men, while it is for women. On the contrary, sensorial impairments are less detrimental for women than for men (-20% against -30% on the instantaneous probability of finding a job).

Table 6 – Determinants of access to employment – Effects of types of disability – Hazard ratios

	(1) Full sample	(2) Education		(3) Gender	
		(a) Low	(b) High	(a) Women	(b) Men
<i>Type of disability</i>					
Physical disability	0.886**	0.957	0.791***	0.841**	0.931
Sensorial disability	0.761***	0.814*	0.744**	0.799**	0.714***
Mental disability	0.355***	0.272***	0.453***	0.288***	0.424***
Other disability	0.854***	0.825***	0.878***	0.794***	0.908*
Woman	1.010	1.172***	0.892***	-	-
Age	1.043***	1.054***	1.019***	1.035***	1.055***
<i>Education (ref: No degree)</i>					
Secondary education	5.137***	4.560***	-	4.343***	7.065***
Short-cycle tertiary education	8.932***	-	1.377***	6.166	14.497***
Long-cycle tertiary education	5.955***	-	Ref.	5.081***	8.180***
<i>Family background (ref: No parent manager)</i>					
Both parents managers	1.258***	1.438***	1.163***	1.247***	1.263***
One parent manager	1.175***	1.233***	1.100***	1.169***	1.162***
At least one parent associate manager	1.232***	1.342***	1.135**	1.248***	1.216***
Constant	0.017***	0.018***	0.188***	0.027***	0.009***
ρ	1.296	1.213	1.376	1.287	1.314
$\ln(\theta)$	0.789***	0.969***	0.698***	0.855***	0.731***
Region fixed-effects	Yes	Yes	Yes	Yes	Yes
Log-likelihood	-31,235.15	-13,602.06	-17,383.08	-15,445.36	-15,716.22
AIC	62,544.30	27,274.12	34,836.16	30,962.71	31,504.45
BIC	62,900.84	27,593.26	35,141.73	31,285.21	31,825.84
<i>N</i>	19,434	8,085	11,349	9,499	9,935

*** indicates significance at the 1% level, ** at the 5% level and * at the 10% level.

Source: Author's calculation based on *Génération 2013* data.

Conclusion

This work aimed to assess how disability affects school-to-work transitions of young workers. Using parametric duration models on a sample of young workers entering the labour in 2013, I estimate the effect of disability on the probability to find a (stable) job. I evidence an unambiguous negative effect of disability on these probabilities, which implies longer durations between the entry on the labour market and the first job. This underlines the difficulty for disabled youth to enter the labour market, despite the important number of policies implemented over the last decades. Besides, the magnitude of the effect strongly varies depending on the disability indicator. Administratively recognised disabilities have the strongest negative effects on employment, probably related to stronger impairments and/or disincentives due to disability benefits. However, the negative effect is also significant for individuals reporting a limitation or a health condition without being administratively recognised, who cannot claim disability benefits or workplace accommodation. For those individuals, difficulties to enter the labour market are therefore not compensated and might result in social marginalisation in the long term. Regarding demographics, the penalty associated to disability appears to be stronger for

women than for men, and slightly lower for more educated workers. Finally, there are strong disparities depending on the type of impairment. While physical disabilities are associated to rather limited penalties, mental disabilities drastically decrease the probability of finding a job.

This work still has some limitations. In particular, the absence of information about the severity of the disability does not allow to explore this dimension, nor the selection bias that could arise when distinguishing between educational levels. Besides, this work focuses on disabled young people exiting the “standard” scholar system, leaving aside those leaving medical-educational institutions. Finally, there is no information available about whether the professional inclusion of disabled workers occurs in the protected sector (companies designed to specifically hire disabled workers with an adapted work environment) or the regular labour market, which leaves room for future research.

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