



The Labor Market Entry Prospects of People with Visual Impairments

Katharina Diehl

Melvin Vooren, Eline Heppe, Ilja Cornelisz, Chris van Klaveren

Background

- UN - Convention on the Rights of Persons with Disabilities
 - Right to participate in labor markets freely and fully
- Visual impairments (VI)
- RQs:
 1. What are the rates of different labour market outcomes for a subpopulation with VI in NL after graduation compared to a matched sample?
 2. What are the rates of different labour market outcomes as primary sources of income after labor force entry for a subpopulation with VI compared to a matched sample?



Previous Research

- Employment rates
 - 33% to 77% across studies
 - (Heppe et al., 2023; Goertz et al., 2010; Bell and Silverman 2018)
- Sys Rev -> employment ranging from 33% South Korea to 42% in US
 - (Goertz et al., 2010)
- Comparability issues
 - Conceptualizations
 - Selection effects



Methods and Data

Matching

- 2 matching procedures 1) post graduation 2) post employment entry
- Glm propensity scores nearest neighbor
- Matching variables:
 - 1) gender, 2) migration background, 3) educational background, 4) high school GPA, 5) year of graduation, OR in model post employment entry 5) year of first job entry

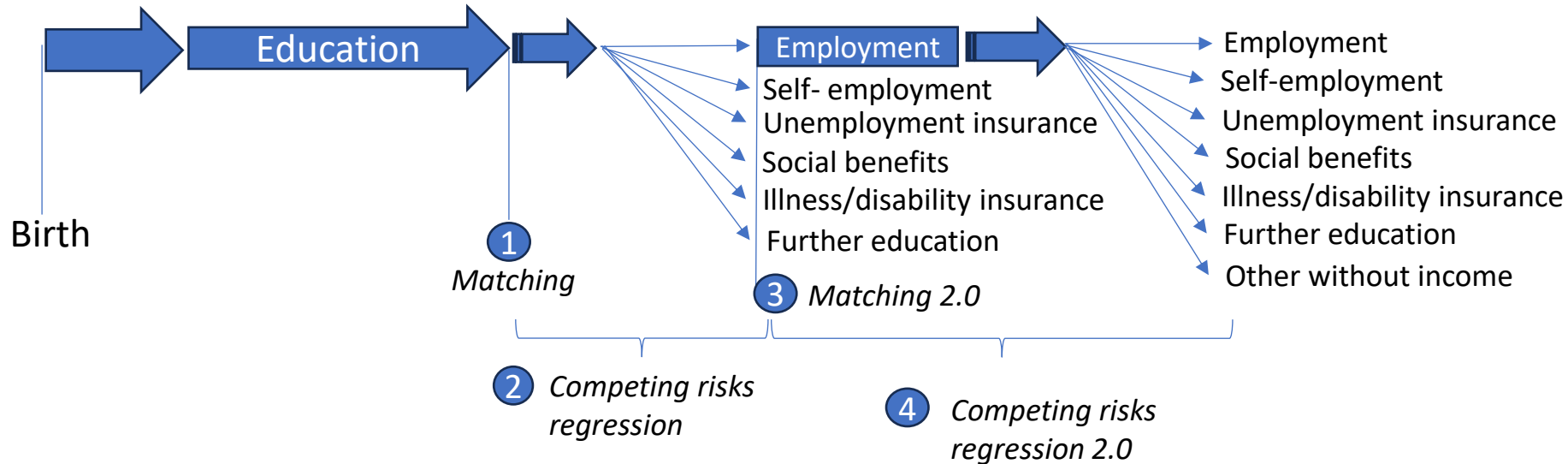
Duration Models

- 2 competing risks regression survival analyses; post graduation and post employment entry
- Fine & Grey model
- Covariates: Matching variables + age & higher order polynomials
- Time dependencies similar

Data

- Register microdata from Statistics Netherlands
- Identify VI sub-population
 - VI-specific reimbursements from health insurance data
- Match VI graduates with non-VI graduates from random sample of 2 million from Dutch general population
- Socio-economic categories -> 1) Employment 2) self-employment, 3) unemployment insurance, 4) social benefits, 5) illness/disability insurance, 6) attending further education, 7) others without income

Methods in a nutshell



Pre-matching characteristics

	general population sample (n = 309,176)	VI subpopulation (n = 2.412)	Combined	p-value
Year of birth	1985.70	1981.10	1985.66	0.0000
Year of graduation	2012.03	2011.28	2012.02	0.0000
Mean age at graduation (years)	26.33	30.18	26.36	0.0000
Gender (%)				
<i>Female</i>	52.75%	56.05%	52.78%	0.0012
<i>Male</i>	47.25%	43.95%	47.22%	0.0012
Level of education (%)				
<i>Low or no info</i>	6.88%	9.37%	6.89%	0.0000
<i>Middle</i>	44.61%	49.67%	44.65%	0.0000
<i>High</i>	48.51%	40.96%	48.46%	0.0000
GPA (mean. 1-10)	6.53	6.50	6.53	0.60
Migration background (%)				
<i>Netherlands</i>	76.04%	77.40%	76.05%	0.1106
<i>First generation</i>	11.25%	9.25%	11.23%	0.0007
<i>Second generation</i>	12.71%	13.35%	12.72%	0.3596

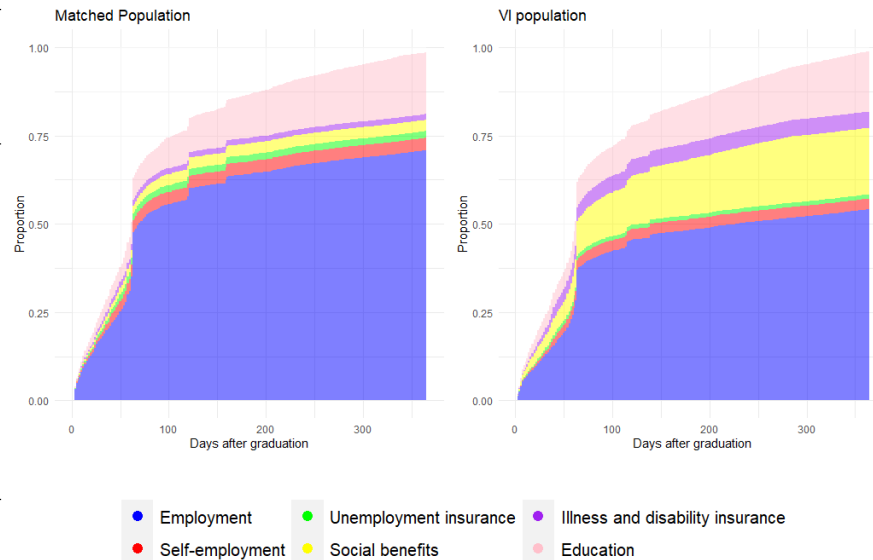
Results

Post-matching characteristics

	Matched sample (n = 2.412)	VI subpopulation (n = 2.412)	Combined	p-value
Year of birth	1983.86	1981.10	1982.48	0.0000 ***
Year of graduation	2011.28	2011.28	2011.28	0.9767
Mean age at graduation (years)	27.42	30.18	28.80	0.0000 ***
Gender (%)				
<i>Female</i>	56.09%	56.05%	56.07%	0.9769
<i>Male</i>	43.91%	43.95%	43.93%	0.9769
Level of education (%)				
<i>Low or no info</i>	9.33%	9.37%	9.35%	0.9606
<i>Middle</i>	49.67%	49.67%	49.67%	1.0000
<i>High</i>	41.00%	40.96%	40.98%	0.9767
GPA (mean. 1-10)	6.50	6.50	6.50	0.9252
Migration background (%)				
<i>Netherlands</i>	77.36%	77.40%	77.38%	0.9726
<i>First generation</i>	9.25%	9.25%	9.25%	1.0000
<i>Second generation</i>	13.39%	13.35%	13.37%	0.9663

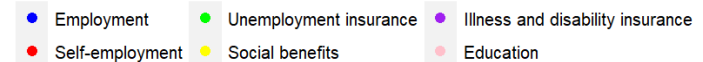
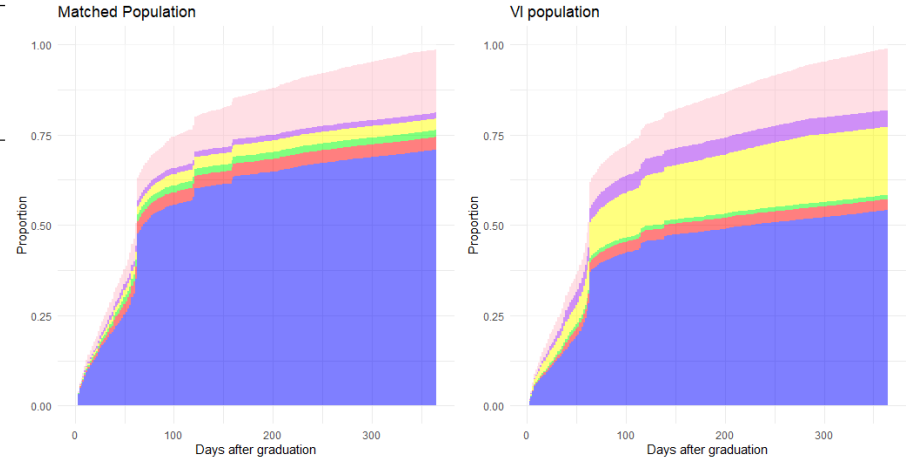
Socio economic outcomes post graduation

	Matched sample (n = 2.412)	VI Subpopulation (n = 2.412)	χ^2	p-value
No change	11.53%	7.22%	23.93	0.000
Employment	65.00%	51.87%	35.89	0.000
Self-Employment	3.23%	2.82%	0.68	0.408
Unemployment insurance	1.29%	1.04%	0.64	0.423
Social benefits	2.78%	17.34%	254.02	0.000
Illness/disability benefits	1.45%	4.32%	34.25	0.000
Attending education	14.72%	15.39%	0.35	0.553
	100.00%	100.00%		



Socio economic outcomes post graduation

	Matched sample (n = 2.412)	VI Subpopulation (n = 2.412)	X ²	p-value
No change	11.53%	7.22%	23.93	0.000
Employment	65.00%	51.87%	35.89	0.000
Self-Employment	3.23%	2.82%	0.68	0.408
Unemployment insurance	1.29%	1.04%	0.64	0.423
Social benefits	2.78%	17.34%	254.02	0.000
Illness/disability benefits	1.45%	4.32%	34.25	0.000
Attending education	14.72%	15.39%	0.35	0.553
	100.00%	100.00%		



Economic outcome →	(1) Employment		(2) Self-employment		(3) Unemployment insurance		(4) Social benefits		(5) Illness and disability insurance		(6) education	
	B (SE)	p	B (SE)	p	B (SE)	p	B (SE)	P	B (SE)	p	B (SE)	p
Visual impairment	-0.455 (0.038)	0.000 ***	-0.340 (0.170)	0.045 *	-0.296 (0.272)	0.28	2.092 (0.247)	0.0000 ***	0.472 (0.202)	0.0200 *	0.119 (0.074)	0.110

Social Benefits program regimes

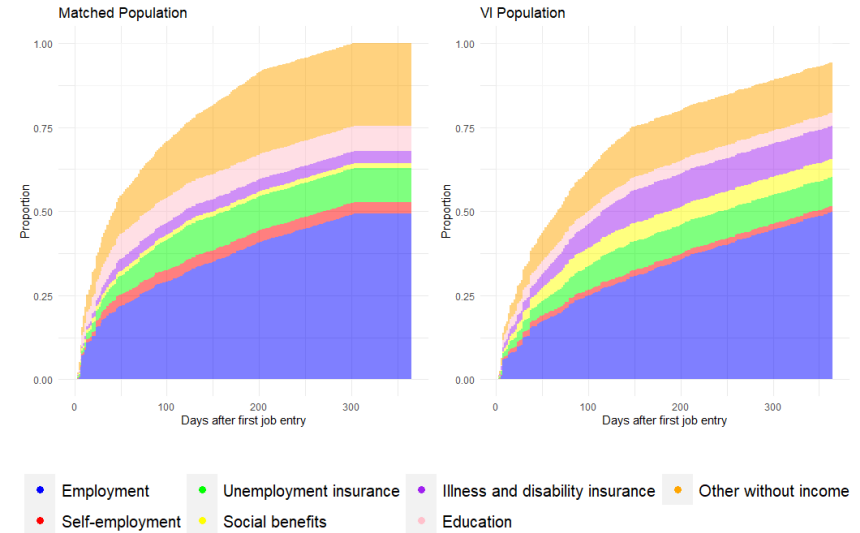
- During observation period policy changes in social benefit program for young people with disability
- Eligibility increasingly stricter
- Changes in 2010 & 2015
- In our data 3 dummies 1) pre 2010, 2) 2010-2015, 3) post 2015

Duration Model 1

Economic outcome →	(1) Employment		(2) Self-employment		(3) Unemployment insurance		(4) Social benefits		(5) Illness and disability insurance		(6) education	
	B (SE)	p	B (SE)	p	B (SE)	p	B (SE)	P	B (SE)	p	B (SE)	p
<i>Visual impairment</i>	-0.455 (0.038)	0.000 ***	-0.340 (0.170)	0.045 *	-0.296 (0.272)	0.28	2.092 (0.247)	0.0000 ***	0.472 (0.202)	0.0200 *	0.119 (0.074)	0.110
					Wajong 2010-2015		0.177 (0.434)	0.68				
					Interaction VI x Wajong 2010-2015		-0.075 (0.432)	0.86				
					Wajong 2015		-0.530 (0.560)	0.34				
					Interaction VI x Wajong 2015		0.127 (0.494)	0.80				

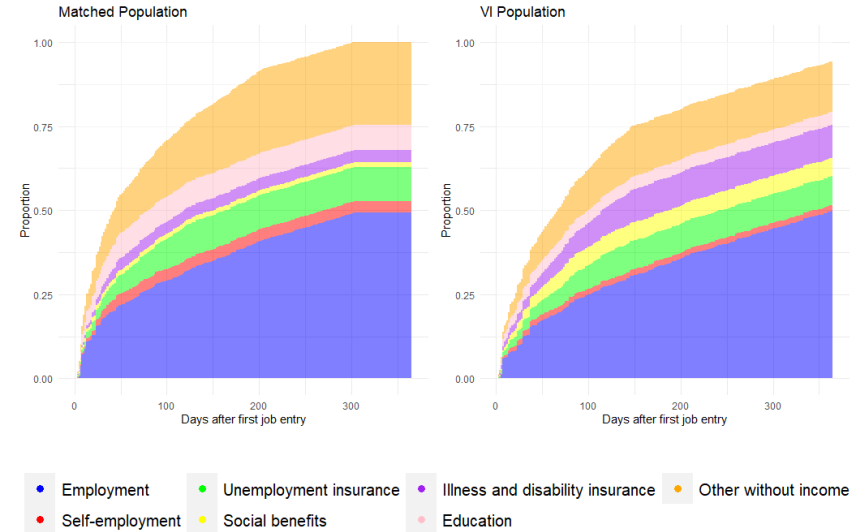
Socio economic outcomes post first employment

	Matched sample (n = 1.252)	VI Subpopulation (n = 1.252)	X ²	p-value
No change	40.10 %	23.56%	53.76	0.000
Employment	29.47%	42.41%	29.16	0.000
Self-Employment	2.08%	1.36%	1.88	0.169
Unemployment insurance	6.07%	6.55%	0.23	0.633
Social benefits	0.89%	4.15%	26.68	0.000
Illness/disability insurance	2.16%	7.51%	37.10	0.000
Attending education	4.78%	3.05%	3.88	0.049
Other without income	14.78%	11.50%	5.11	0.024
	100.00%	100.00%		



Socio economic outcomes post first employment

	Matched sample (n = 1.252)	VI Subpopulation (n = 1.252)	X ²	p-value
No change	40.10 %	23.56%	53.76	0.000
Employment	29.47%	42.41%	29.16	0.000
Self-Employment	2.08%	1.36%	1.88	0.169
Unemployment insurance	6.07%	6.55%	0.23	0.633
Social benefits	0.89%	4.15%	26.68	0.000
Illness/disability insurance	2.16%	7.51%	37.10	0.000
Attending education	4.78%	3.05%	3.88	0.049
Other without income	14.78%	11.50%	5.11	0.024
	100.00%	100.00%		

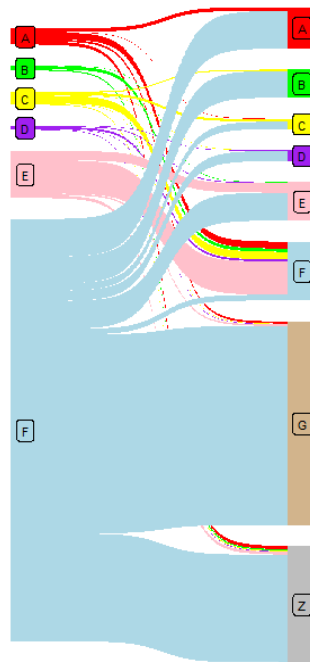


Economic outcome →	(1) Employment		(2) Self-employment		(3) Unemployment insurance		(4) Social benefits		(5) Illness and disability insurance		(6) education		(7) other no income	
	B (SE)	p	B (SE)	p	B (SE)	p	B (SE)	P	B (SE)	p	B (SE)	p	B (SE)	P
Visual impairment	0.073 (0.071)	0.31	-0.974 (0.345)	0.005 **	-0.147 (0.170)	0.390	1.406 (0.336)	0.000 ***	0.667 (0.230)	0.004 **	-0.389 (0.217)	0.073	-0.310 (0.116)	0.007 **

Secondary sources of income of the employed

- More secondary incomes for subpopulation with VI
- More transitions subpopulation with VI

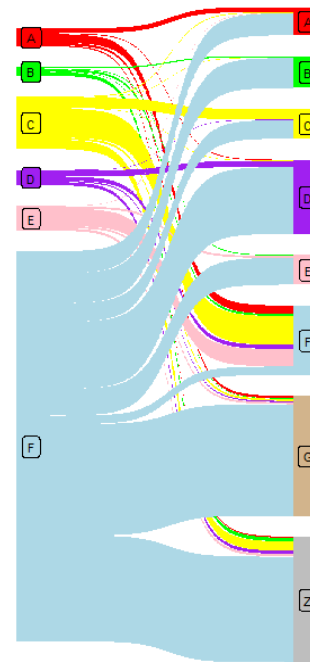
Matched sample



Status 1

Status 2

VI subpopulation



Status 1

Status 2

- A - Self-employment
- B - Unemployment insurance
- C - Social benefits
- D - Illness and disability insurance
- E - Education
- F - No secondary income
- G - No transition
- Z - Out of employment

Discussion And Conclusion

- Model 1 – post graduation
 - Subpopulation with VI lower rates of employment
 - Welfare dependency driven by illness/disability & social benefits
 - No differences in unemployment benefits, self-employment, & education
 - Social welfare reform did not affect social welfare uptake
 - Similar time dynamics for both groups



- Model 2 – post employment entry
 - No group difference in maintaining employment as main source of income; neither for unemployment benefits & education
 - VI shift less into self-employment as main source of income
 - Overrepresentation of illness and disability and social benefits for VI remained
 - Matched sample overrepresented in other without income
 - More transitions in VI
 - Difficulty maintaining job?





Thank you!

Questions and Inputs?

Advanced Quantitative Methods and Analytics for Public Policy Support conference (AQMAPPS II)



October 24 - 26, 2023 – Amsterdam (The Netherlands) **CALL FOR PAPERS**

Join the dialogue and contribute to an inclusive and insightful discussion at the forefront of quantitative methods and analytics for public policy support. We invite scholars from diverse disciplines to share their expertise and perspectives in ongoing work on advancing statistical models, analytics, and quantitative methods as instrumental tools for decision-makers..

Deadline: 15th of June

<https://tinyurl.com/5enazd7a>



- United Nations, (2007). "Convention on the Rights of Persons with Disabilities." European journal of health law 14(3): 281-298.
- Echtelt, P. v., et al. (2019). "Eindevaluatie van de Participatiewet."
- Heppe, E. C. M., van Klaveren, C., Cornelisz, I., Schuengel, C., & Kef, S. (2023). Heterogeneity in social participation among young people with vision impairment. British Journal of Visual Impairment, 02646196231152340.
- Bell, E. C., & Silverman, A. M. (2018). Rehabilitation and Employment Outcomes for Adults Who Are Blind or Visually Impaired: An Updated Report Abstract.
- McDonnall, M. C. (2010). "The employment and post-secondary educational status of transition-age youths with visual impairments." Journal of Visual Impairment & Blindness 104(5): 298-303.
- Fine, J. P. and R. J. Gray (1999). "A Proportional Hazards Model for the Subdistribution of a Competing Risk." Journal of the American Statistical Association 94(446): 496-509.
- Goertz, Y. H. H., van Lierop, B. A. G., Houkes, I., & Nijhuis, F. J. N. Related to the Employment of Visually Impaired Persons: A Systematic Literature Review. Journal of Visual Impairment & Blindness, 10

