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Disability and Non-standard Work Arrangements: Job Preference of People With Disabilities Focusing on Disability Status and Gender

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Why Disability and NSWAs?

- **Non-standard work arrangements**
  - Employment contracts that deviate from standard work structures
    - Workers perform their work full-time on fixed schedules on employers' premises under their direct supervision for indefinite employment terms (Branch & Hanley, 2017; Kalleberg et al., 1997)
- **The disability-nonstandard jobs paradox**
  - People with disabilities (PWD) seem to prefer non-standard work arrangements (NSWAs) to standard jobs
    - In tight labor markets, more PWD work in NSWAs, whereas the opposite is true for PWOD (Schur, 2003; Schur & Kruse, 2021)
  - PWD seem to dislike NSWAs
    - The job satisfaction in NSWAs is lower among PWD; They are more likely to look for another job (Ali et al., 2011; Schur & Kruse, 2021)

Voluntary vs. Involuntary Choice?

- **Research questions**
  - What do people with disabilities look for in their jobs?
  - Are their job preferences similar to or different from those of PWOD?
    - How are the two groups' job preferences similar or different?
- **Study objective**
  - Can NSWAs be effective policy tools to increase employment and job retention rates for PWD as well as providing them with quality jobs?
- **How are they addressed?**
  - Drawing on the precarious work and job quality literature,
    - Identified primary job attributes and working conditions
    - Measured job preferences as
      1. the change in job choice probability according to the change in working conditions
      2. the subjective monetary values of the working conditions

Primary Job Attributes

- **Definition**
  - Publicly available information about a job that is equally disclosed to all job market participants
  - Can be obtained without actually experiencing the job or relying in internal networks
- **How are they obtained?**
  - Reviewed 450 job postings using five key words
    - full-time, part-time, on-call, day labor, temporary work (BLS, 2018; Cappelli & Keller, 2013)

Primary Job Attributes: Definitions and Levels

Primary job attributes	Working conditions
Employment term employment duration with the employer	- Open-ended, permanent ・employment with an indefinite term - Fixed-term, temporary ・contingent employment
Hours worked the number of hours that workers are required to work per week	- Full-time ・contracts that require 35 or more working hours per week and provide fringe benefits - Part-time ・contracts that require 30 or less working hours per week and provide limited or no fringe benefits - Zero-hour contracts ・contracts that neither guarantee the minimum working hours nor oblige workers to fulfill a given task ・allow workers to work for other employers concurrently
Work schedule when working time starts, pauses, and ends in a given workday, and how it is determined	- Fixed ・scheduling arrangements in which workers are required to work a fixed period of time determined by the employer ・workers have little to no ability to determine or change their work schedules - Flexible ・workers can decide when to start, pause, and end their work within their contractual working hours (Beer, 2000)
Work location the place where workers perform their job duties during contractual working hours	- On-site working at designated business sites such as employer's premise, client's or supplier's workplaces, etc. - Home working from worker's home - Hybrid working alternately between a worker's home and designated business sites
Wage earnings from work	- A continuous proportion of worker's hourly wage, ranging from 10% lower to 10% higher than one's current or most recent wage

Hypotheses

1. Employment term

- PWD have greater constraints in labor market participations
- Their higher labor market insecurity will lead to stronger preference for stability in employment

H1: The preference for permanent positions (vs. temporary positions) is stronger for people with disabilities than for people without disabilities

2. Hours worked

- Health issue and earnings limits for disability income supports (Farina et al., 2020; Koumenta & Williams, 2019; Mai, 2017; Schur, 2003; Schur & Kruse, 2021)
- The relative values of shorter working hours and being able to freely adjust working hours will be higher for PWD

H2: The preferences for part-time and zero-hour contracts (vs. full-time) are stronger for people with disabilities

Hypotheses (cont.)

3. Work schedule

- Employer-led schedules can cause greater work-life conflicts; have more negative health consequences (Finnigan & Hale, 2018; Scholarios et al., 2017)
- Utility of scheduling flexibility will be higher for people with important daytime commitments

H3: The preference for flexible schedules (vs. fixed schedules) is stronger for people with disabilities

4. Work location

- Geater challenges with working on designated sites for PWD
  - Commuting difficulties; higher costs; risk of accommodations denial; coworker jealousy (Bureau of Transportation Statistics, 2024; Colella, 2001; Moloney et al., 2019; Schur et al., 2005; Schur et al., 2014)
- The values of work arrangements that alleviate these challenges will be higher for PWD

H4: The preferences for working from home and hybrid working (vs. working on-site) are stronger for people with disabilities

Methods

- **Discrete choice experiments (DCEs)**
  - Elicit participants' preference (de Bekker-Grob et al., 2012; Louviere et al., 2010; see Figure 1)
  - Facilitating respondents' trade-offs
  - 2 sets of 12 binary choice questions
  - Randomly assigned to either set
- **Sample**
  - 1,120 participants were recruited from Prolific
  - Excluded: 31 failed the attention-check question
  - The number of participants = 1,089
- **Disability**
  - one or more disability-type questions; or
  - enrollment in one or more disability insurance programs

An example of choice tasks

Between the following two job options, which one do you prefer?

	Option 1	Option 2
Contract Type	temporary, fixed-term	permanent, open-ended
Hours Worked	zero-hour contract	part-time
Work Schedule	fixed	fixed
Work Location	hybrid	onsite
Hourly Wage	5% lower than current/latest job	10% higher than current/latest job

	Option 1	Option 2
Your Choice:	○	○

0% 100%

→

D-efficient experimental design

D-efficiency: 3.7 (133%)

choice question	block	A1_1	A1_2	A1_3	A1_4	A1_5	A2_1	A2_2	A2_3	A2_4	A2_5
1	1	temporary	full-time	flexible	hybrid	5% lower than current/latest job	permanent	zero-hour contracts	fixed	home	5% higher than current/latest job
2	1	temporary	zero-hour contracts	flexible	home	10% higher than current/latest job	permanent	part-time	fixed	hybrid	10% lower than current/latest job
3	1	temporary	zero-hour contracts	fixed	hybrid	5% lower than current/latest job	permanent	part-time	fixed	onsite	10% higher than current/latest job
4	1	temporary	full-time	flexible	onsite	10% higher than current/latest job	permanent	part-time	fixed	hybrid	10% lower than current/latest job
5	1	permanent	part-time	flexible	onsite	10% higher than current/latest job	temporary	zero-hour contracts	fixed	home	10% lower than current/latest job
6	1	temporary	full-time	flexible	home	5% lower than current/latest job	permanent	part-time	flexible	onsite	10% higher than current/latest job
7	1	temporary	part-time	flexible	onsite	10% higher than current/latest job	permanent	zero-hour contracts	flexible	hybrid	10% lower than current/latest job
8	1	permanent	full-time	flexible	hybrid	10% lower than current/latest job	temporary	part-time	fixed	hybrid	10% higher than current/latest job
9	1	temporary	full-time	fixed	home	10% lower than current/latest job	permanent	zero-hour contracts	fixed	hybrid	10% higher than current/latest job
10	1	permanent	zero-hour contracts	fixed	onsite	10% higher than current/latest job	temporary	part-time	fixed	home	10% lower than current/latest job
11	1	permanent	full-time	fixed	onsite	10% higher than current/latest job	temporary	part-time	flexible	home	5% higher than current/latest job
12	1	temporary	zero-hour contracts	flexible	hybrid	10% higher than current/latest job	permanent	full-time	flexible	home	10% lower than current/latest job
13	2	permanent	part-time	fixed	home	10% lower than current/latest job	temporary	full-time	fixed	hybrid	10% higher than current/latest job
14	2	temporary	full-time	flexible	hybrid	10% lower than current/latest job	permanent	zero-hour contracts	fixed	onsite	10% higher than current/latest job
15	2	temporary	part-time	fixed	onsite	10% higher than current/latest job	permanent	zero-hour contracts	flexible	onsite	10% lower than current/latest job
16	2	temporary	full-time	flexible	home	5% lower than current/latest job	permanent	zero-hour contracts	flexible	hybrid	10% higher than current/latest job
17	2	permanent	part-time	flexible	home	10% lower than current/latest job	temporary	zero-hour contracts	fixed	home	10% higher than current/latest job
18	2	permanent	zero-hour contracts	flexible	onsite	10% lower than current/latest job	temporary	part-time	fixed	onsite	10% higher than current/latest job
19	2	permanent	full-time	fixed	home	10% lower than current/latest job	temporary	zero-hour contracts	flexible	home	10% higher than current/latest job
20	2	permanent	full-time	fixed	hybrid	10% lower than current/latest job	temporary	part-time	flexible	hybrid	10% higher than current/latest job
21	2	permanent	zero-hour contracts	flexible	home	10% lower than current/latest job	temporary	full-time	fixed	hybrid	10% higher than current/latest job
22	2	permanent	part-time	flexible	hybrid	10% lower than current/latest job	temporary	zero-hour contracts	fixed	home	10% higher than current/latest job
23	2	temporary	zero-hour contracts	flexible	hybrid	10% lower than current/latest job	permanent	full-time	flexible	onsite	5% higher than current/latest job
24	2	temporary	full-time	fixed	onsite	10% higher than current/latest job	permanent	part-time	fixed	hybrid	the same as current/latest job

Note 1. A1 and A2 refer to alternatives 1 and 2, respectively.
Note 2. 1, 2, 3, 4, 5 refer to the five job attribute levels: employment security, hours worked, work schedule, work location, hourly wage.

Sample Composition: Status & Gender

- **Sample size**
  - **1,089**
    - PWOD: **705**
    - PWD: **384**

Gender	Disability		
	People without disabilities	People with disabilities	Total
men	355	162	517
	68.67	31.33	100.00
	50.35	42.19	47.47
	32.6	14.88	47.47
women	344	204	548
	62.77	37.23	100.00
	48.79	53.12	50.32
	31.59	18.73	50.32
non-binary	5	16	21
	23.81	76.19	100.00
	0.71	4.17	1.93
	0.46	1.47	1.93
prefer not to answer	1	2	3
	33.33	66.67	100.00
	0.14	0.52	0.28
	0.09	0.18	0.28
Total	705	384	1,089
	64.74	35.26	100.00
	100.00	100.00	100.00
	64.74	35.26	100.00

Sample Composition: Disability type

Gender	Disability type																							
	deaf			blind			cognitive			mobility			selfcare			independent living			social			others		
	no	yes	total	no	yes	total	no	yes	total	no	yes	total	no	yes	total	no	yes	total	no	yes	total	no	yes	total
men	502	15	517	507	10	517	458	59	517	472	45	517	502	15	517	466	51	517	472	45	517	421	96	517
women	532	16	548	538	10	548	478	70	548	479	69	548	536	12	548	476	72	548	492	56	548	410	138	548
non-binary	21	0	21	21	0	21	10	11	21	18	3	21	20	1	21	15	6	21	13	8	21	15	6	21
prefer not to answer	3	0	3	3	0	3	2	1	3	2	1	3	2	1	3	1	2	3	2	1	3	1	2	3
total	1,058	31	1,089	1,069	20	1,089	948	141	1,089	971	118	1,089	1,060	29	1,089	958	131	1,089	979	110	1,089	847	242	1,089

Note. Others indicates an impairment that limits the kind or amount of work, housework, school, parenting, recreation, or other activities one can do.

Analytical Strategies

- **Mixed logit (random parameter logit)**
- **Dependent variable**
  - Job choice (chosen: 1 vs. not chosen: 0)
- **Hypothesis testing**
  - Marginal probability of job choice
    - Two-sample *z*-test
  - Willingness-to-pay (WTP) measure: monetary values of the working conditions

$$\text{Willingness to pay} = -\frac{\beta_{attribute\ level}}{\beta_{wage}}$$

    - Wilcoxon rank sum test (Mann-Whitney test; Hole & Kolstad, 2012; Kim et al., 2012; Train & Weeks, 2005)

Results Marginal Probabilities

			Marginal probabilities		Two-sample z-test
			PWOD	PWD	
Employment term	*H1*	Permanent positions (vs. temporary positions)	.133***	.127***	p = .717
Hours worked	*H2-1*	Part-time (vs. full-time)	-.091***	-.059***	$p < .05$
	H2-2	Zero-hour contracts (vs. full-time)	-.124***	-.085***	$p < .10$ (p = .05)
Work schedule	*H3*	Flexible scheduling (vs. fixed scheduling)	.02**	.026**	p = .538
Work location	*H4-1*	Working from home (vs. working on-site)	.15***	.215***	$p < .05$
	H4-2	Hybrid working (vs. working on-site)	.082***	.111***	p = .18

- All seven attribute levels significantly affect people's job choices
- Job preferences of people with and without disabilities are very similar
  - Both prefer: permanent, full-time, flexible schedules, atypical work locations
- Two groups are different in terms of the degree to which they like or dislike certain attribute levels

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Results Willingness to Pay

			Willingness-to-pay		Mann-Whitney test
			PWOD	PWD	
Employment term	*H1*	Permanent position (vs. temporary positions)	-9.15%	-9.49%	p = .861
Hours worked	*H2-1*	Part-time (vs. full-time)	6.37%	4.47%	$p < .001$
	H2-2	Zero-hour contract (vs. full-time)	9.09%	6.59%	$p < .001$
Work schedule	*H3*	Flexible scheduling (vs. fixed scheduling)	-1.36%	-2%	$p < .001$
Work location	*H4-1*	Working from home (vs. working on-site)	-11.08%	-17.47%	$p < .001$
	H4-2	Hybrid working (vs. working on-site)	-6.08%	-8.92%	$p < .001$

- Economic values of the working conditions are very similar for both groups
- Two groups differ in the amounts of salary they are willing to give up or require as compensation
- For preferred working conditions, PWD are willing to give up larger portions of their salaries
- For disliked working conditions, PWD require less compensation

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Supplementary Analysis

- **Within-group heterogeneity**
  - Individual workers' job preferences vary significantly within each group
  - Percentage of people whose preference are opposite to the mean preference (Hole, 2007)

Percentage of people with the opposite preference = $100 \times \Phi \times (-b_k / s_k)$

(Φ: cumulative standard normal distribution; k: job attribute level; s: standard deviation of a job attribute level)

	Percentages of people with opposite preferences		
	PWOD		**PWD**
Temporary position (vs. permament position)	17.59%	<	20.58%
Part-time (vs. full-time)	18.2%	<	37.3%
Zero-hour contract (vs. full-time)	25.55%	<	31.82%
Fixed scheduling (vs. flexible scheduling)	39.07%	>	36.89%
Working on-site (vs. working from home)	21.44%	>	18.53%
Working on-site (vs. working hybrid)	22.35%	>	18.86%

Summary

- **Temporary positions, part-time, & zero-hour contracts**
  - Precarity rather than flexibility
  - Preference for employment security and financial stability
  - Relative favorability toward these working conditions
    - Higher concentrations may stem from voluntary choice
- **Atypical work locations**
  - Lower rates of remote work are likely a result of involuntary choice due to employment barriers

Implications

- **Disability-nonstandard jobs paradox**
  - Involuntarily choose NSWAs due to employment barriers
  - Choose non-standard jobs for specific working conditions despite other precarious working conditions
- **Additional insights**
  - Benefits of flexible working conditions vary
    - Flexibility in work location vs. flexibility in work schedule
  - Less preferred working conditions may improve disabled workers' economic well-being
- **Policy implications**
  - Part-time and temporary positions may increase labor force participation and employment rates
    - Greater positive effect will be greater for PWD
  - Need for redesigning non-standard jobs
    - Greater employment security, financial stability, and flexibility

Limitations and Future Research

- **Individual characteristics beyond disability status**
  - Disability type and severity

- **Extrapolation of WTP values**
  - WTP values for some working conditions exceed the wage range set for this study
    - Actual values may be lower due to decreasing returns on utility
  - Set broader rages (e.g., -20% to +20%) and/or specify non-linear effect of wage

Conclusion

The demand for quality jobs is universal. Tailoring working conditions to the specific needs of individual employees will enhance their well-being, especially for PWD

Q & A

Thank you very much!

Part I: Results

Mixed logit models

Attributes	Levels	Parameter Estimates			
		People without disabilities		People with disabilities	
		Mean coefficient	SD of coefficient	Mean coefficient	SD of coefficient
Fixed Parameter:					
Wage		.1***	-	.093***	-
		(.005)		(.006)	
Random Parameters:					
Employment security	(temporary positions)	-	-	-	-
	H1 : permanent positions	.93***	.998***	.888***	1.082***
		(.068)	(.057)	(.092)	(.083)
Hours worked	(full-time)	-	-	-	-
	H2-1 : part-time	-.634***	.698***	-.413***	.659***
		(.065)	(.075)	(.085)	(.108)
	H2-2 : zero-hour contract	-.892***	1.356***	-.615***	1.3***
		(.086)	(.085)	(.113)	(.108)
Work schedule	(fixed scheduling)	-	-	-	-
	H3 : flexible scheduling	.14**	.503***	.189**	.564***
		(.046)	(.076)	(.065)	(.107)
Work location	(on-site working)	-	-	-	-
	H4-1 : working from home	1.111***	1.404***	1.656***	1.85***
		(.129)	(.114)	(.194)	(.177)
	H4-2 : hybrid working	0.606***	.797***	.832***	.943***
		(.098)	(.106)	(.137)	(.139)
Number of observations			16,920		9,216
Number of respondents (*N*)			705		384
Log-likelihood			-4,948.0867		-2,767.2824
LR chi^2	value		619.19		422.37
	df		6		6
	p-value		< .001		< .001

Marginal probabilities of job choice

	Marginal probabilities		Two-sample *z*-test
	PWOD	PWD	
Permanent positions (vs. temporary positions)	.133	.127	p = .717
Part-time (vs. full-time)	-.091	-.059	$p < .05$
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Hybrid working (vs. on-site working)	.082	.111	p = .18

- Attribute levels written in paratheses indicate reference attribute levels
- Numbers in paratheses indicate s.e.
- All seven attribute levels significantly affect people's job choices
- Job preferences of people with and without disabilities are similar
- Two groups are different in terms of the degree to which they like or dislike certain attribute levels