Job Insecurity Measures as Predictors of Workers' Compensation filing

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Background: Job insecurity

- Globalization resulted in labor market flexibility
- Low control over work
- Potential stressors: work conditions characterized by widespread uncertainty
- Related to job satisfaction, organizational commitment, trust, health, performance, turnover intention.

Workplace injuries/illnesses and Workers' comp filing

- 55,000 deaths (eighth leading cause) and 3.8 million disabling injuries/year
- Estimated costs range between $128 billion and $155 billion/year
- MSDs: Most common type of injury among NLSY 79 respondents
- Percentages of people who never file WC range between 35% to 79%

Research Questions

- How do different job insecurity measures at different levels predict the workers' compensation filing outcome?

Study Design and Population

- Conduct longitudinal analysis and estimate the effects of job insecurity on WC filing behavior using NLSY79
- 3,280 persons involving 5204 workplace injury/illness during 1988 to 2000 (9 rounds interviews, 9 points of time, cover 13 years) among the NLSY 79 cohort

NLSY 79 Data

- The National Longitudinal Survey of Youth
- Rich, nationally representative data source with individual-level: 12,686 sample of people who were between the ages of 14 and 22 in 1979
- Not dependent upon self-report of disability or of WC receipt

Why NLSY 79?

- Significant limitation of the BLS survey using OSHA logs
  - exclude gov't workers and the self-employed
  - not captured if not reported by workers/supervisors (underreporting barriers)
- Population-based survey allows analysis of all workplace injuries, including unclaimed injuries
- 80.1% retention rate in 2000

Hypothesis

The workers with low job security (measured by odd job and unemployment experience) are less likely to file workers' comp when experienced injury/illness.

Analyses

GEE Logistic Regression

$$\text{logit}(y) = \log(y/(1-y)) = \beta_0 + \beta_1 JI + \beta_2 X + \beta_3 S$$

Panel data Analysis

$$Y_{ijt} = \beta_0 + \beta_1 JI_{ijt} + \beta_2 X_{ijt} + \beta_3 S_{ijt} + e_{ijt}$$

for $i = 1, \ldots, 3280$ injured workers, $j =$ occupation

$t = 1, \ldots, 9$ years

Y_{ijt} : Whether or not File WC JI_{ijt} : Job Insecurity S_{ijt} : Severity

X_{ijt} : Individual Characteristics (Sex, Race, Age, Education, Occupation)

Key Variables

- Dependent : Probability of WC filing P(CLAIM |injury) =1
- Independent:

  - Job insecurity: Having an odd job and/or recent unemployment exp

  - Severity: No. of day missed (>5+ days)

  - SES: Education (<high school), Low income (< 20000USD))

Covariates

- Occupation and industry variables

  - Classify risk categories using the 1970 U.S. Census

  - JCQ Decision latitude linked measures (psychosocial factor at occupational level)
- Demographic characteristics: age, gender, race, marital status, region, residence
- Type of injury/illness (acute/chronic)

Results: Characteristics of injured

- Age (23~43, Average 31 year-old)
- Sex (Female 38%), Race (Black 23%), Region (Rural 24%)
- Education (< 12, 70%)
- Government (15%) Self-employed (5%)
- Manufacturing (23%) Operative (21%)
- Job Insecurity Group (17.9%, odd job 2%)
- Injury (92%) Illness (8%)
- WC filing (56%) WC Compensated(26%)

No. of Injury/Illness & WC filing

Year	Injury/Illness	filing	Collect	%Filing	%Collect
1988	845	403	188	47.7	22.3
1989	610	337	149	55.3	24.4
1990	620	352	173	56.8	27.9
1992	557	341	175	61.2	31.4
1993	446	248	115	55.6	25.8
1994	455	247	110	54.3	24.2
1996	606	362	156	59.7	25.7
1998	560	332	151	59.3	27.0
2000	505	299	139	59.1	27.5
Total	5204	2921	1356	56.1	26.1

Odds Ratios of job insecurity for filing

Year	OR (95% C I)	Adjusted OR(95% C I)
88	0.53 (0.18_1.58)	0.59 (0.32_1.07)
89	0.89 (0.29_2.76)	0.79 (0.41_1.52)
90	0.26 (0.09_0.76)*	0.37 (0.19_0.71)*
92	0.62 (0.20_1.94)	0.70 (0.36_1.34)
93	0.40 (0.13_1.21)	0.56 (0.27_1.18)
94	0.06 (0.01_ 0.51)*	0.54 (0.24_1.21)
96	0.22 (0.04_1.14)	0.43 (0.20_ 0.93)*
98	0.70 (0.23_ 2.17)	0.79 (0.38_1.64)
00	1.79 (0.35_ 9.28)	1.43 (0.26_7.77)

Panel Data Analysis

Variable	Estimate	S.E	t-value	Pr > |t|
Intercept	0.45 * (0.46)	0.02 (0.02)	26.16 (26.54)	<0.0001
Job Insecurity (JI=odd job) (JI=odd+unemp)	-0.18* (-0.12*)	0.05 (0.03)	-3.97 (-4.28)	<0.0001
Education (X)	0.04* (0.04*)	0.02 (0.02)	2.89 (2.95)	0.004 (0.0032)
Severity (S)	0.27* (0.27*)	0.02 (0.02)	18.80 (18.91)	<0.0001

Odds Ratios of covariates for filing

Covariates	OR (95% C I)	Adjusted OR(95% C I)
Job insecurity	0.55 (0.34_0.89)*	0.75 (0.63_0.90)*
Income (Low <20000 USD)	0.81 (0.71_0.93)*	0.83 (0.72_0.95)*
Severity (High > 5 missed days)	1.75 (1.64_1.86)*	1.77 (1.66_1.89)*
Education (Low < 12 grade)	1.04 (0.92_1.18)	1.05 (0.93_1.18)
Industry (Manufacturing)	0.98 (0.90_1.06)	0.99 (0.91_1.07)
Occupation (Manual job / Low DL)	1.02 (0.90_ 1.16)	1.02 (0.90_ 1.16)
Acute injury	8.76 (6.52_11.8)*	8.76 (6.51_11.77)*
Region (West)	1.14 (1.07_ 1.22)*	1.15 (1.07_ 1.22)*
Sex, Race, Age, Residence	1.01 (0.99_1.03)	1.01 (0.99_1.02)

Results: Correlations between odd job and other job insecurity measures

JI	Gamma	OR (odd job vs. JI measure)	JI	Gamma	OR (odd job vs. JI measure)
Unemp exp (recent) (time t-2)	 0.57 0.54	 2.94(2.44_3.55) 2.58(2.11_3.14)	JCQ DL linked	0.33	1.36(1.26_1.46)
Cum. total unemp exp	0.45	2.27(1.86_2.77)	No-health insurance	0.79	8.44(6.10_11.7)
Local Unemp Rates	0.38	1.90(1.64_2.18)	No-union member	0.53	3.45(1.88_6.33)
JCQ job security linked	0.25	1.34(1.25_1.44)	Temp contract	0.96	48.9(40.5_59.2)

OR of job insecurity measures for filing (GEE Logistic Regression)

Job insecurity measure	OR with occupation (Risk)	OR with occupation (DL)
Unemployment experience - recent (time t-1) - time t-2 (Psychosocial/Ind. Level)	 0.79 (0.65_0.96)* 0.84 (0.67_1.04)	 0.79 (0.66_0.96)* 0.83 (0.67_1.03)
- Cumulative total exp for study period (13yrs) (Work History level)	0.94 (0.83_1.07)	0.94 (0.83_1.07)
Unemployment rate (Macro/Local Economy level)	1.05 (0.91_1.21)	1.04 (0.90_1.20)

Job insecurity measure	OR with occupation (Risk)	OR with occupation (DL)
JCQ job insecurity linked measure	1.02 (0.96_1.09)	1.04 (0.97_1.12)
JCQ decision latitude (Occup/Psycho level)	1.01 (0.96_1.06)	1.01 (0.95_1.06)
No-union membership	0.76 (0.61_0.95)*	0.77 (0.62_0.96)*
No-health insurance		
Odd job	0.50 (0.42_0.58)*	0.50 (0.43_0.58)*
(Organizational level)	0.55 (0.34_0.89)*	0.55 (0.34_0.88)*
Combined measure	0.75 (0.63_0.90)*	0.75 (0.63_0.90)*
(Both odd Job and recent unemp exp)		

Strength and Weakness

- Allow analysis of all workplace injuries, including unclaimed injuries.
- Analyze psychosocial factors,all industries and health outcomes
- Examine different types of job insecurity measures
- Closed cohort- not include immigrant workers- underestimate incidence

Conclusion and Discussion

- The workers with low job security (measured by odd job and unemployment experience) are less likely to file workers' comp when experienced injury/illness.
- Workers with low job security need to be protected from any reprisal action against their employment when they were filing workers' comp