How Do Older Workers Use Nontraditional Jobs?

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The role of nontraditional jobs has gained increased attention.

- Workers who use these jobs which often lack benefits frequently may save little for retirement and are vulnerable to health shocks.
- Workers who use these jobs briefly, as a stop-gap or a bridge to retirement, likely suffer little.
- Our question: how do older workers use nontraditional jobs in their 50s and early 60s?



The literature is not clear about how older workers use these jobs.

- Some research suggests workers use them as a stepping stone to retirement (e.g., Johnson and Kawachi, 2007; Quinn et al. 2009; or James et al. 2011).
- Others suggest workers may use them more permanently or become stuck in these kinds of jobs (e.g., Fournier, 2011; Barbieri and Scherer, 2015).



This paper used sequence analysis to see how workers actually use these jobs.

- For each wave of the *Health and Retirement Study* (HRS), workers are identified as in a traditional job, a nontraditional job (defined in the next section), not working, or retired.
- Sequence analysis identifies workers with similar patterns of employment and groups them together.
- These sequence groups characterize how workers use nontraditional jobs.



An example of Sequence Analysis could be helpful to get started.

Employment Sequences for Hypothetical Workers

	Age						
	50	52	54	56	58	60	62
Worker A	Т	Т	Ν	Ν	Т	Т	R
Worker B	Т	Т	Ν	Т	Т	Т	R
Worker C	Т	Т	Ν	Ν	Ν	U	R

In the example:

- "T" indicates traditional work;
- "N" indicates nontraditional work;
- "U" indicates not working; and
- "R" indicates retired.

CENTER for Source: Authors' illustration.

In this example, Worker A and B may be grouped together – their sequences are one "move" apart.

Example of Modification Type 1:

A "Substitution" of One State for Another Turns Sequence B into to Sequence A

	Age						
-	50	52	54	56	58	60	62
Worker A	Т	Т	Ν	Ν	Т	Т	R
Worker B	Т	Т	Ν	ŦN	Т	Т	R
Worker C	Т	Т	Ν	N	Ν	U	R

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Worker C might be assigned to a different sequence – it takes more moves to make them look like Worker A.

Example of Modification Type 2: Two "Insertions" and Two "Deletions" Turn Sequence C into Sequence A



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The sequence analysis requires a definition of nontraditional work.

- The paper defines it as any job lacking both health insurance and retirement benefits.
- In addition to exploring *how* these jobs fit into workers latecareer employment patterns, it also explores *who* uses them.
- Finally, it examines the relationship between using these jobs and retirement outcomes.



According to the CPS, the "no benefit" definition is broader than most of those based on the employer-employee relationship...

Percentage of Workers Ages 50-62 in "Nontraditional" Jobs by Definition



Notes: "Gig" definition as in Ferrell and Grieg (2016) and covers all workers. "1099" workers defined as in Collins et al. (2019) and applies to all workers. "Contingent" (BLS), "Alternative" (BLS), "No benefits", and "Contingent" (GAO) were calculated by the authors and apply to workers age 50-62.

Sources: Farrell and Grieg (2016); Collins et al. (2019); and authors' calculations from CPS May (2017).

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...but also captures more of the vulnerable workers that are of concern to researchers.

Select Characteristics of Workers Ages 50-62 in Nontraditional Jobs, 2017

	"Alternative"	No benefits
	BLS	minus BLS
Average tenure	11 years	6 years
Household income		
10th percentile	\$22,500	\$17,500
25th percentile	45,000	32,500
Median	67,500	55,000
Demographics		
At least some college	65%	52%
Non-white	20	34

Note: The "no benefits minus BLS" column consists of those workers without benefits who are not already captured under the BLS definition. *Source:* Authors' calculations from CPS May (2017).



The project uses a sample of HRS respondents observed from ages 50-62.

Sample Restrictions

Restriction	Sample
Total HRS sample	37,495
Born from 1939 to 1954 and observed at 52	11,732
Live to age 62	10,940
Not dropped by the HRS	10,097
Report working with income	8,513
Have less than three missing observations	5,030
Work at least once between ages 50 and 62	4,174

CENTER for Source: Authors' calculations using Health and Retirement Study (HRS) (1992-2016).

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The output of the sequence analysis is groupings of similar patterns.

- In the HRS, our definition of nontraditional job encompassed 16.9 percent of jobs, slightly less than the CPS.
- The sequence analysis indicated five sequence groupings were the optimal number.



Two of the five groupings involve individuals who work inconsistently, while the other three involve consistent employment.

Grouped Sequences of Older Workers' Work Histories from Ages 50-62



CENTER for Source: Authors' calculations using HRS (1992-2016).

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With respect to *how* nontraditional jobs are used, most nontraditional jobs are found in the "Mostly nontraditional" group.

Share of Nontraditional Jobs Falling into Each Sequence Group



CENTER for Source: Authors' calculations using HRS (1992-2016).

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With respect to *who* uses nontraditional jobs, workers using them frequently seem only slightly more vulnerable than other groups.

Older Workers' Demographics by Sequence Group

	Sequence group					
-	Early	Weak	Mostly non-	Mostly	All	
Demographics at ages 50-52	retirement	attachment	traditional	traditional	traditional	
Share of total sample	21%	16%	11%	26%	26%	
Female	62	65	55	55	52	
Non-white	22	24	24	18	16	
College graduate	22	24	21	28	39	
Married	82	81	76	81	82	
Has pension wealth						
DB pension	32	20	13	32	29	
DC pension	26	20	12	27	33	
Number of health conditions	1.1	0.9	0.7	0.7	0.6	
Median wealth						
Financial	\$15,488	\$11,051	\$9,127	\$17,898	\$21,477	
Housing	\$93,052	\$80,540	\$70,530	\$81,088	\$93,052	



Source: Authors' calculations using HRS (1992-2016).

A closer look using Latent Class Analysis shows workers using these jobs frequently consist of three different groups.

- 15 percent of the group were high school dropouts.
- 36 percent were married with an earning spouse and thus may not have required a traditional job.
- 49 percent were solo earners who were reasonably welleducated – it was unclear why they were in nontraditional jobs so often.



The regression suggests a relationship between frequent nontraditional work and low retirement income.



Relationship between Sequence Group and Retirement Income at Age 62

Notes: Solid bar indicates significance at the 5-percent level, dashed at the 10-percent level. Regression also controls for race, gender of respondent, education, marital status, and health status.

Source: Authors' calculations using HRS (1992-2016).

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Conclusion

- Nontraditional work is mostly used consistently, rather than as a stop gap or transition to retirement.
- Those working nontraditional jobs frequently end up with less retirement income, even controlling for other factors.
- Some of these workers seem to fall into this pattern because they are less educated, while others have earning spouses.
- Focusing on how well-educated solo earners sort into these patterns would be valuable.



Appendix



Optimal Matching Analysis (OMA) is used to calculate sequence similarities.

- To group sequences together, sequence analysis requires a single index of similarity between employment patterns.
- To accomplish this aim, OMA assigns a "cost" to each of the two movements that can turn one sequence into another:
 - "Substitutions," which replace one state with another; and
 - "Insertions/deletions" which place a state within a sequence and/or remove a state from a sequence and often occur simultaneously.



In assigning costs of these modifications, we follow the literature.

- The cost of each substitution is based on the observed probability of people transitioning from one state to another – e.g., transitions from retirement to traditional work are less likely and thus costly.
- The cost of each insertion/deletion is assigned one tenth the cost of the maximum substitution.



After OMA, sequences are grouped together.

- The end result of OMA is a pairwise distance matrix, which contains the sum of the modifications for each sequence relative to every other sequence.
- A Hierarchical Cluster Analysis uses this matrix to detect groupings among the individual sequences, with the goal of minimizing differences *within* and *across* groups.
- The number of groups was chosen to maximize the ratio of across to within group variation in distances (the Caliniski-Harabasz Index) and that resulted in interpretable sequences.

Finally, a regression is performed to see how the sequences relate to retirement resources. $R_{i,62} = \beta_0 + \sum_{j=2}^{K} \gamma_j S_{i,j} + X'_{i,50}\beta + \delta H_{i,50} + \tau_i + \varepsilon_i$

- $R_{i,62}$ is the log of income from defined benefit pensions, Social Security, and annuitized defined contribution and financial wealth at age 62,
- $\gamma_j S_{i,j}$ represents the percentage change in retirement income associated with a sequence (relative to a base).
- $X'_{i,50}$ is a vector of demographic controls, and $H_{i,50}$ an index of objective health measures.

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Aside from the addition of a "very early retirement sequence," a narrower definition produced similar sequences.

Grouped Sequences of Older Workers' Work Histories from Ages 50-62 Narrow Definition of Nontraditional Work



Source: Authors' calculations using HRS (1992-2016).

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