Happy Birthday Bob!
How Do Pre-Retirement Job Characteristics Shape One’s Post-Retirement Cognitive Performance?

Discussion by

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Interested in the relationship between retirement and cognition

But “Treatment effects” suggests causality

Treatment is retirement

Probability of treatment: Propensity score $p(X)$

Confounders: variables that affect the probability of treatment (retirement) and the outcome (cognition)

Required assumption: $X$ includes all confounders.
Framework of regression

cog = βRet + X_1β_1 + X_2β_2 + u
Ret = γcog + X_2γ_2 + X_3γ_3 + v

γ = 0
Data on X_2
(If not cog = βRet + X_1β_1 + ε and Ret correlated with ε.)
(Because studying Δcog would want restrictions on time series properties of u and v)

It was because of the suspicion that γ ≠ 0 and that X_2 not fully observable that instrumental variables was used by Rohwedder and Willis (following Perleman).
What are patterns in data that lend (or subtract) plausibility to assumptions of this paper?
Scaling of scores, age 51-68

Cognition scores

<high school     12.4
high school      15.5
some college     16.6
college graduate or more 18.0

Transitions
Work-to-work
Work-to-not work
Not work-to-work
Not work-to-not work

Cognitive scores before and after transition
Cognitive scores by two-wave labor force transition. Scores prior to transition. Those not working have 2 points lower.
Cognitive scores by two-wave labor force transitions. Scores prior to transition.  **Work-to-work versus work-to-not work**
Cognitive scores by two-wave labor force transitions. Scores prior to transition. Not work-to-work
Cognitive scores by two-wave labor force transitions. Scores before and after transition. Work-to-work versus not work-to-not work
Change in scores by labor force transition. Work-to-work versus not work-to-not work

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Simulated and cross-section scores
Change in scores by labor force transition: work-to-work versus work-to-not work

Work-to-not work: -0.34; work-to-work: -0.15
Summary

Not-work to not-work
  • Lower levels
  • Greater decline than work-to-work

Work to not-work
  • Lower levels while working
  • Slightly greater decline than work-to-work
Corresponding health changes

Self-rated health
1 = poor
2 = fair
3 = good
4 = very good
5 = excellent
Self-assessed health score by labor force transition. Score prior to transition.
Self-assessed health score by labor force transition. Score prior to transition. **Work-to-work versus work-to-not work**

Work-to-not work had lower scores prior to transition
Self-assessed health score by labor force transition. Score prior to transition. Not work-to-work had higher scores than not work-to-not work prior to transition.
Self-assessed health score by labor force transition. Score prior to and after transition. Work-to-work versus not work-to-not work.
Change in self-assessed health score by labor force transition. **Work-to-work versus not work-to-not work**

Work-to-work: -0.07; Not work-to-not work: -0.04
Simulations of health trajectories
Self-assessed health score before and after labor force transition. **Work-to-work versus work-to-not work**
Change in self-assessed health score by labor force transition.  *Work-to-work versus work-to-not work*

Work-to-work: -0.07; work-to-not work: -0.16;
Summary of health

Not-work to not-work
- Lower levels
- Smaller decline than work-to-work

Work to not-work
- Lower levels while working
- Greater decline than work-to-work
Relationships between
- working, retirement and cognition
- working, retirement and health
similar.
I very much like classifying jobs as to

Cognitive complexity
Mechanical demands

Greater decline when retiring from low cognitive jobs
Similar to results of Gwen Fisher *et al.* (2014)

Greater decline when retiring from highly mechanical jobs
What are characteristics of workers in those jobs?

- Lower SES?
- Associated with greater propensity for health shocks and worse health shocks?

Have controls adequately accounted for differences?
Sample selection: FFFF versus FFRR

Severe but good idea
Establish plausibility of hypotheses in simplified setting
Framework of regression

\[ \text{cog} = \beta \text{Ret} + X_1 \beta_1 + X_2 \beta_2 + u \]
\[ \text{Ret} = \gamma \text{cog} + X_2 \gamma_2 + X_3 \gamma_3 + v \]

Need
\[ \gamma = 0 \]
Data on \( X_2 \)

- Have adequately accounted for \( X_2 \) ?
- \( \gamma = 0 \) ?
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My conclusion

Important first step.

Would like to think of IV strategy