Women, Family, and Training: Is it too late for learning?

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**ABSTRACT**

Women are typically under-represented among the employed. In particular, young females face a higher probability of entering unemployment rather than finding a job since they are more likely to lack educational credentials and marketable skills. Second chance programs by increasing participants’ human capital and employability skills could be considered a means to bring women back to employment.

**Concerns:** (1) Program evaluations focus on the average program participant–Few studies conduct a gender analysis and even fewer focus on youth. (2) Disregard that the program offers a bundle of services to participants.

**Research Objectives**

(1) Identify and estimate the impact of attaining a degree (GED, vocational, or high school diploma) on female participants’ labor market performance (study period: Q16 after randomization):

- employment probability
- weekly earnings

(2) Address the heterogeneity of participants

- Whites and African-Americans
- High risk: mothers, youth (16-21 years old)

**Job Corps (JC) and NJCS**

JC (the largest training program for low income youth (16-24 old) in the U.S.)

Offers a bundle of services:

- remedial education and vocational training
- job placement services, counseling, etc.

NJCS (randomized evaluation experiment)

- Positive and statistically significant impacts on key labor market outcomes and on education achievements after 3 years.

- Nature of the program: Intensive Educational Curriculum, Open-exit educational philosophy, and self-paced instruction, Residential component [1]

**METHODS**

**Potential Outcomes Framework [2]:**

- Treatment indicator: \( T = \{JC, N_{JC}\} \)
- Degree Indicator: \( S(T) = (S(JC), S(N_{JC})) \in (0, 1) \)
- Outcomes: 4 potential outcomes of the form, \( Y(T, S(T)) \)
  - Observed indicators:
    \[
    S^{\text{real}} = TS(JC) + (1 - T)S(N_{JC})
    \]
    \[
    Y^{\text{real}} = TY(JC) + (1 - T)Y(N_{JC})
    \]

**Random Treatment Assignment**

\[
Y(JC), Y(N_{JC}), Y(JC, S(JC)), S(JC), S(N_{JC}) \perp T
\]

- The average total effect of participating in JC on the students’ outcome is given by:
  \[
  ATE = E[Y(JC, S(JC)) - Y(N_{JC}, S(N_{JC}))]
  \]
  \[
  = E[Y(JC, S(JC)) - Y(JC, S(N_{JC}))] + \text{Net effect}
  \]

**Principal Stratification [3]:**

Individuals are comparable at the stratum level

- would not acquire a credential regardless of \( T \); (n0)
- would acquire a credential regardless of \( T \); (n1)
- would acquire a degree if not in JC; (an)
- would acquire a degree only through JC; (ap).

\[ Degree_{k} = \{E[Y(JC, S(JC))|k] - E[Y(JC, S(N_{JC}))|k]\}, \quad k \in \{0, 1, n1, ap, an\} \]

**Assumptions:**

Individual level Monotonicity of Treatment on Degree Attainment

\[ S(JC) \geq S(N_{JC}) \]

**Weak Monotonicity of Mean Potential Outcomes Within Strata**

- \( a \): \( E[Y(JC, S(JC))|ap] \geq E[Y(JC, S(N_{JC}))|ap] \)
- \( b \): \( E[Y(JC, S(N_{JC}))|ap] \geq E[Y(JC, S(N_{JC}))|an] \)

**Weak Monotonicity of Mean Potential Outcomes Across Strata [4]**

- \( a \): \( E[Y(JC)|n1] \geq E[Y(JC)|ap] \geq E[Y(JC)|n0] \)
- \( b \): \( E[Y(N_{JC})|n1] \geq E[Y(JC, S(N_{JC}))|ap] \geq E[Y(JC)|n0] \)

**Degree Effect [4]:**

\[ DE = \pi_{ap}(E[Y(JC, S(JC))|ap]) - E[Y(JC, S(N_{JC}))|ap]) \]

**RESULTS (4 YEARS AFTER RANDOMIZATION)**

**Conclusions**

- The program is reported to have a significant and positive impact on participants’ future labor prospects (higher employment probability and earnings gains).
- Importantly, we observe a significant and positive effect of obtaining a degree through JC on participants’ labor outcomes
- The effects prevail 4 years after randomization
- Highlight importance in early human capital investment
- We observe heterogeneity between key demographic groups
- Whites and younger participants benefit more from the program and from attaining a degree
- Differences could be attributed to prior education level and job experience
- Novel estimates that provide information useful to “treat” gender blind employment and training programs.

**References**


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