Lecture 10: Non-pecuniary Returns to Education

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Oreopoulos and Salvins Introduction

- So far, we have mainly focused on the returns to schooling in terms of income

- Educational attainment increases wages, but why?

  1) Signaling   2) Human Capital

- Study focuses on non-monetary returns to education

Non-Pecuniary Outcomes

- Better decision-making regarding health care and prevention

$$\uparrow Educ \implies \uparrow \text{Interpret health info.}$$

- Better decisions about who to marry (and access to better partners)

$$\uparrow Educ \implies \uparrow \text{Access to more educated partners}$$

- Better decisions about parenting

$$\uparrow Educ \implies \uparrow \text{more educated Kids}$$

- Consumption value of schooling (schooling is fun?)

Challenges to Measuring Non-Pecuniary Returns

Problem is $Corr(YrsEduc, Y) \neq 0$

- Schooling is endogenous to other factors that affect non-pecuniary outcomes

$$Y = \beta_0 + \beta_1 YrsEduc + \varepsilon$$

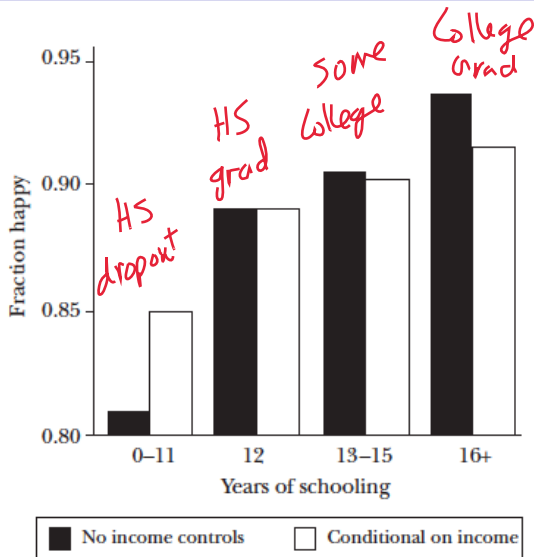- Difficult to measure non-pecuniary outcomes

How to measure Happiness?

- Since schooling affects income, it's hard to tell if schooling is changing outcomes by changing decision-making

$\uparrow Educ \Rightarrow \uparrow Income \Rightarrow \uparrow Happiness$

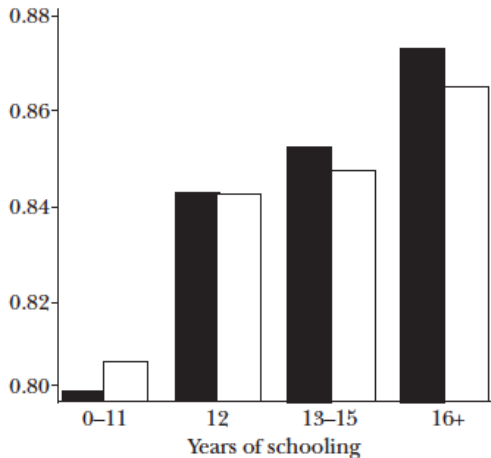# Educational Attainment and Happiness

↑ Educ
⇓
↑ Happiness

HS dropout

HS grad

some College

College Grad

Educational Attainment and Job Satisfaction

C: Satisfied with job
(fraction)

Handwritten annotations:
↑Educ ⇒ ↑ job satisfaction

Better quality job

0.88
0.86
0.84
0.82
0.80

Years of schooling: 0–11, 12, 13–15, 16+

Educational Attainment and Non-labour Outcomes

Handwritten annotations:
↑ Educ. ⇒ ↑ Health
↑ Educ. ⇒ ↓ Divorce
↑ Educ. ⇒ ↓ SpanK — Better parenting
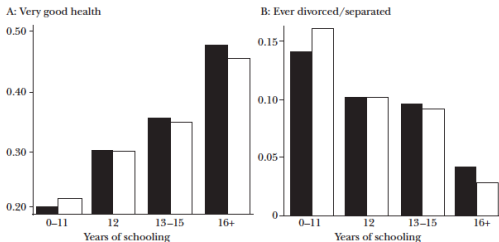
A: Very good health
B: Ever divorced/separated
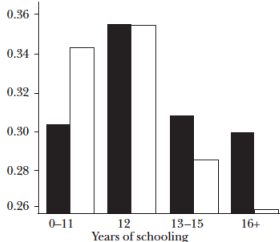C: Favor spanking to discipline child
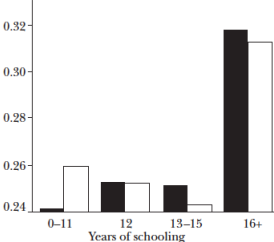D: Believe people can be trusted
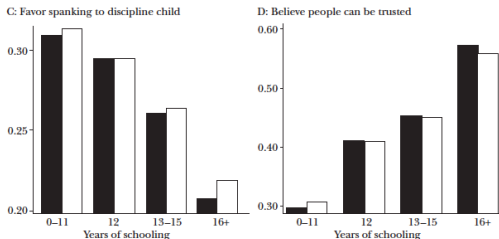
Legend: ■ Before conditioning on income □ After conditioning on income

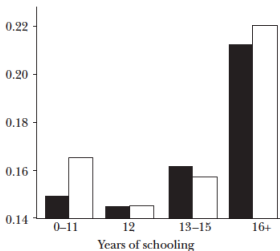# Potential Negative Returns to Education

A: Always feel rushed

B: Want more leisure time

C: Want more time with friends

Years of schooling

Costs

↑ Educ
⇓
↑ Want more leisure time

↑ Educ
⇓
↑ Want time to spend with friends

Impacts of Educational Attainment

- Education is associated with more happiness and job satisfaction

- Education is associated with lower chance of divorce and less child spanking

- Education is also associated with negative returns to non-pecuniary outcomes
  - More educated people want more leisure time and also want to spend more time with friends

$\rightarrow$ Above results are all "descriptive" and not "causal"

Strategy to Measure Causal Impacts of Education

$$Q1 \; Educ < Q2 \; Educ < \ldots < Q4 \; Educ$$

1. Compare outcomes across siblings and twins with different levels of education

① Enter school in year turn 6

② Dropout of school by age 16

2. Compulsory schooling laws as a instrument for educational attainment

$$Y = \beta_0 + \beta_1 \, Yrs \, Educ + \varepsilon$$

$Z = $ Quarter of birth

$Q1 = [Jan, March]$

$\vdots$

$Q4 = [Oct, Dec]$

Causal Returns to Education from Siblings Strategy

Extra yr
of educ by
↑ inwe by
5 % on avg.

Outcome	Mean	[1] Change in mean from 1 year of schooling before conditioning on income	[2] Change in mean from 1 year of schooling after conditioning on income.	[3] Change in mean from 1 year of schooling before conditioning on income	[4] Change in mean from 1 year of schooling after conditioning on income
		Siblings sample		**Twins sample**	
Log annual income	12.0407	0.0517*** (0.0003)	NA	0.0476*** (0.0026)	NA
Unemployed (*share*)	0.07356	–0.0047*** (0.0001)	NA	–0.0047*** (0.0001)	NA
On welfare (*share*)	0.02332	–0.0034*** (0.0001)	NA	–0.0028*** (0.0005)	NA
Disability pension (*share*)[a]	0.1672	–0.01*** (0.0001)	NA	–0.01*** (0.0007)	NA
Divorced (*share*)	0.11413	–0.0023*** (0.0001)	–0.0017*** (0.0001)	–0.0027* (0.0011)	–0.0027* (0.0011)
Spouse's years of schooling[b]	11.8347	0.228*** (0.0019)	0.221*** (0.0019)	0.229*** (0.0173)	0.227*** (0.0175)
First child born when teenager	0.11167	–0.0083*** (0.0002)	–0.0071*** (0.0002)	–0.0041*** (0.0011)	–0.0372*** (0.0012)

Causal Returns to Education from Compulsory Schooling

IV approach (handwritten)

Outcome	Mean	[1]	[2] Change in mean from 1 year of compulsory schooling before income controls
Log weekly income	3.06		0.131 (0.006)***
Log occupational prestige score	3.27		0.063 (0.003)***
Unemployed (*share*)	0.045		−0.005 (0.002)***
On welfare (*share*)	0.019		−0.015 (0.002)***
In jail (*share*)	0.027		−0.006 (0.003)*
In mental institute (share)	0.003		−0.001 (0.000)*
Probability of dying within 10 years[a]	0.11		−0.037 (0.006)***
First child born when teenager (*share*)	0.078		−0.008 (0.002)***
Divorced (*share*)	0.137		−0.01 (0.002)***
Oldest child behind grade level (*share*)	0.199		−0.032 (0.004)***

↑ Yrs Educ. ⇒ ↑ income by 13.1% on avg. (handwritten)

Summary of Oreopoulos and Salvins

- Extra year of education increases wages by 5 to 13 percent on average

- More educated people on average will have more prestigious jobs

- More educated people on average will be less likely to divorce and have more educated partners

- More educated people on average are less likely to be on welfare or go to jail