

EDLD651 Final Paper

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Note to everyone. I added our research question as an object so that we can use them in inline codes.

Introduction

When discussing minimum wages and its economic impact, most research focuses on the impact of employment (Neumark and Wascher 2003). Card (1995) suggests that growing up in an area near or around a college potentially has a direct effect on wage earnings. The assumption is made that people earn higher wages based on the amount of schooling they have completed (Dearden, Ferri, and Meghir, n.d.). For this study, we want to determine if college proximity and the education level of parents have an impact on wage earnings.

The purpose of this study is to understand the relationship between parents' education, geographic locations (i.e., proximity to college), and participants' education and income. Specifically, given the relationships among these factors in previous literature, we sought to answer:

1. What is the relationship between parent education and participant's education?
2. What is the relationship between parent education and participant's wage?
3. Is there a difference in wage depending on whether you lived near a college?

Table 1: Table 1: Demograpnics

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
Participant Education (Yrs)	11	0	13.9	2.3	8.0	13.0	18.0
Participant Wage (cents/hr)	659	0	614.6	263.9	112.0	577.0	2404.0
IQ Score	92	0	102.4	15.4	50.0	103.0	149.0
Age of Participant	11	0	28.4	3.0	24.0	28.0	34.0
Paternal Education (Yrs)	20	0	10.5	3.1	0.0	10.0	18.0
Maternal Education (Yrs)	20	0	10.8	2.8	0.0	12.0	18.0

Method

The current study is a secondary data analysis from the National Longitudinal Survey of Young Men (NLSYM), which started in 1966 with 5525 young men between the ages of 14 and 24 in the United States. The current study looks at a subset of this data collected in 1976.

Participants

3010 young men were included in this study. Table 1 provides demographic data of our sample. The average age of our participants in 1976 were 28.12 ($SD = 3.14$) with an average of 13.26 years of education ($SD = 2.68$). The average education of the parents of the participants were 10.16 years of education ($SD = 3.13$). Interestingly, during a time when education disparity between gender was large, paternal ($M = 3.27$, $SD = 3.27$) and maternal education ($M = 2.99$, $SD = 2.99$) was similar in our sample.

As is true for many longitudinal studies in the mid-1960s (Card 1995), our data is not a random, representative sample of the United States population. Data was collected from neighborhoods with a high concentration of non-White residents. In the 1960s, black represented 10% of the US population (Census1961?); however, in our study, 23.36% of our sample were black.

Measures

In this study, we examined participants' responses to question regarding their age, ethnicity, IQ score, parent's education (both maternal and paternal), current level of participant education, participant's current wage, and proximity to college. The age variable is a continuous variable measured in number of years ($range = 24- 34$), and the ethnicity is a binary categorical variable in which participants were asked whether they identify as black. The IQ score variable is a continuous variable ($range = NA- NA$). Participant and parental education were asked in number of years (continuous variable). Participant current wage was asked as cents earned per hour ($range = 100- 2404$). Lastly, participants were asked whether they live near a 4-year college, community college, both, or neither.

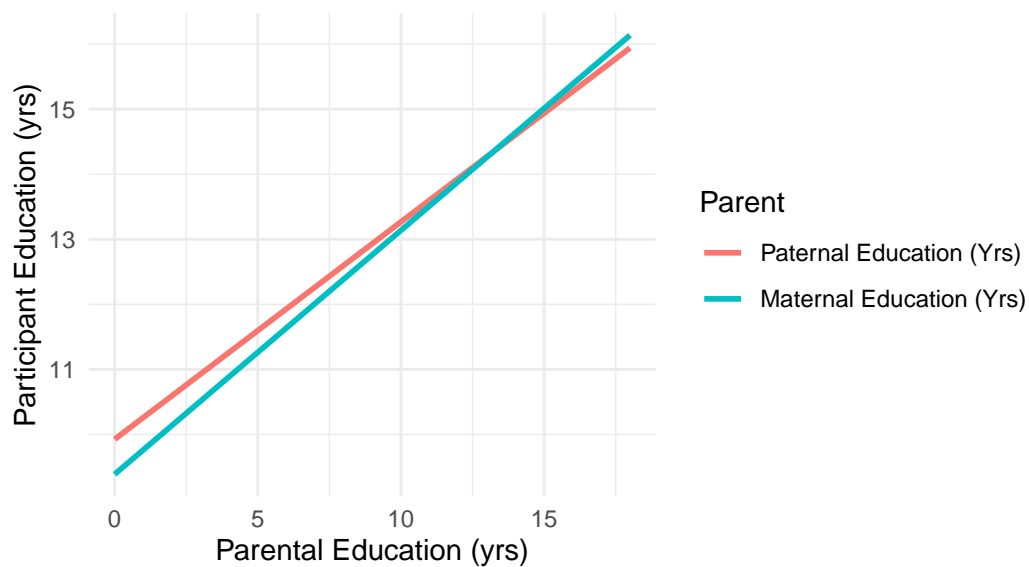
Statistical Analyses

There were no missing data in our variables, except for in the IQ scores. However, since IQ scores were included to provide demographic information, there were no need to impute data for missing data. To answer our first research question (e.g., What is the relationship between parent education and participant's education?) descriptively, we plotted the relationship between parent and participant's education and displayed the fitted linear line. To answer our second research question (e.g., What is the relationship between parent education and participant's wage?) descriptively, we plotted the relationship between parent's education and

participant's education and displayed the fitted linear line. Lastly, to answer our third research question (e.g., Is there a difference in wage depending on whether you lived near a college?) descriptively, we calculated participant's wage based on their response to living proximity to college and plotted the information as a violin graph.

Results

Figure 1: Relationship between Parent and Participant Education
From 1976 Survey



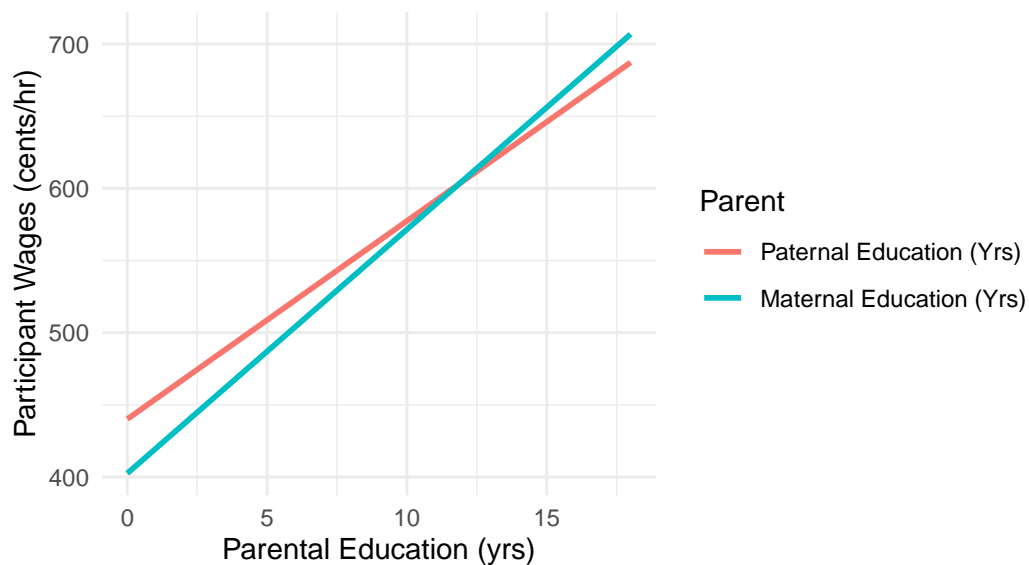
	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	3.7658964	0.18613840	20.23170	4.152925e-88
ed76	0.4822928	0.01375664	35.05892	3.384440e-245

Table 2: Table 1. Model of the relationship between parents' education and participants' education

	Model
(Intercept)	3.766*** [3.401, 4.131]
Participants' education	0.482*** [0.455, 0.509]
Num.Obs.	6020
R2	0.170
R2 Adj.	0.169
AIC	29 726.2
BIC	29 746.3
RMSE	2.86

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Figure 2: Relationship between Parent Education and Participant Wages
From 1976 Survey



	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	8.921523946	0.0958856223	93.04340	0.000000e+00
wage76	0.002150147	0.0001511596	14.22435	3.471789e-45

Table 3: Table 2. Model of the relationship between parents' education and participants' wages

	Model
(Intercept)	8.922*** [8.734, 9.109]
Participants' wages	0.002*** [0.002, 0.002]
Num.Obs.	6020
R2	0.033
R2 Adj.	0.032
AIC	30 646.0
BIC	30 666.1
RMSE	3.08
+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001	

```
prox_wage <- schoolingsub1 %>%
  group_by(near_college) %>%
  summarize(avg_wage = mean(wage76, na.rm = TRUE)/100) %>%
  rename("Proximity to College" = near_college, "Participant Average Wage per Hour" = avg_wage)
  kable(col.names = c("Proximity to college", "Participant wages"),
        digits = 1,
        booktabs = TRUE)
```

Plot 1 reflects a linear regression model of participant education as a function of parental education. Although we have not performed a complete analysis on these descriptive statistics, our model may indicate a positive correlation between parental education and participant education.

Plot 2 also indicates a possible positive correlation between parental education and participant wages, shown in cents/hour. Further statistical testing would be required to verify this.

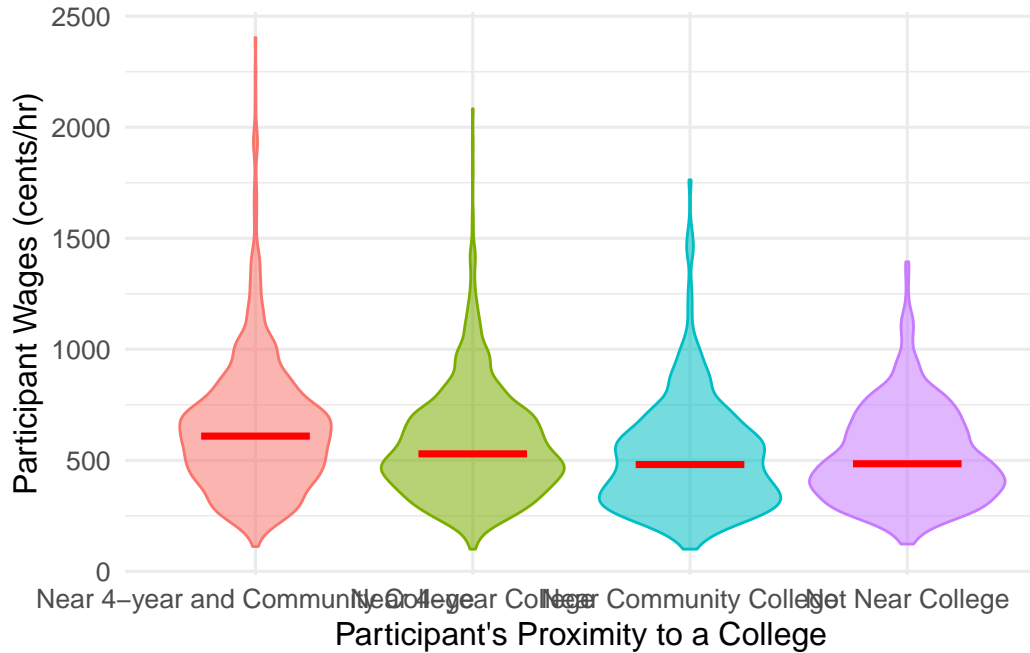


Table 2 displays the participant's proximity to a college alongside their average wage per hour. Those participants who lived near both a four-year and a community college had the highest average wage per hour, at \$6.45. According to the [Department of Labor](#), the minimum wage in the USA in 1976 was \$2.30 per hour, which means that these participants' wages were 2.8043478 times higher than the minimum wage.

Those who resided near only a 4-year college had slightly lower average wages, at approximately \$5.68/hr.

Those who were not near any college had marginally higher average wages (\$5.18/hour) than those near a community college, at \$5.13 per hour.

Card, David. 1995. "Using Geographic Variation in College Proximity to Estimate the Return to Schooling, Aspects of Labour Market Behaviour: Essays in Honour of John Vanderkamp. Ed." *LN Christofides, EK Grant, and R. Swidinsky*.

Dearden, Lorraine, Javier Ferri, and Costas Meghir. n.d. "THE EFFECT OF SCHOOL QUALITY ON EDUCATIONAL ATTAINMENT AND WAGES." *THE REVIEW OF ECONOMICS AND STATISTICS*.

Neumark, David, and William Wascher. 2003. "Minimum Wages and Skill Acquisition: Another Look at Schooling Effects." *Economics of Education Review* 22 (1): 1–10. [https://doi.org/10.1016/S0272-7757\(02\)00006-7](https://doi.org/10.1016/S0272-7757(02)00006-7).