

Referee Report

We made our edits below thanks to the feedback from Professor Anderson, Professor Tombarge, and other professors that visited our poster presentation, teaching assistants, and classmates

- Narrowed our focus onto the impact of having a bachelor's degree on individual income
- Integrated the relevance and research question sections into the introduction (Page 3)
- Fixed formatting issues, syntax problems, and improved the overall writing quality
- Identified the General Social Survey data as a pooled cross-sectional data (Page 5)
- Introduced OLS regression between bachelor and income by family income (Page 7, Page 9)
- Noticed the potential impact of 2008 financial crisis and segmented data into before, during, and after for OLS regression (Page 3, Page 6, Page 8)
- Introduced Probit Model to examine the impact of bachelor on lifting individuals from low-income group to high-income group. (Page 6, Page 7)
- Included comparison between bachelor's degree, associate, and high school (Page 3, Page 6, Page 10)
- Removed the respondent's prestige score variable from the regression to alleviate the endogeneity problem (Page 13-21: Appendix A-D)

EDUCATION: THE MOST CRUCIAL FACTOR TO FINANCIAL SUCCESS?

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April 11, 2023

Acknowledgements: We wish to thank—without in any way implicating them in our errors—Professor Anderson, Professor Tombarge at the Writing Center, as well as various classmates and professors that visited our poster presentation and made helpful suggestions

Introduction

The United States has poured many resources into increasing the real wages of workers across the country. However, how do they know where to dedicate their efforts? Using this research, the key factors in determining one's income will be discovered. If the government can determine that a bachelor's degree is the most crucial determinant for one's income, then the promotion of higher education should be supported, as well as scholarships, trade schools, and other methods that could push students through education programs. If other factors like race and sex are more important, then opportunities for marginalized groups need to be supported. For example, if being a woman is the greatest determinant of low income, opportunities for women need to be greatly improved to solve income inequality issues.

The Federal Government has made a push for more students to earn a bachelor's degree. Recently, the government announced a plan to alleviate student debt and cancel up to \$10,000 for those who make less than \$150,000 annually, thus encouraging people who otherwise couldn't afford to go to college to invest and earn a higher income as a result (The White House, 2022). This push makes sense, as the average American with a bachelor's degree today earns \$80,500 per year, whereas a student with only a high school degree on average earns about \$40,000 (Chang, 2022). This wage premium of a bachelor's degree has also been steadily increasing over time in the United States (Golden & Katz, 2007). The government has clearly identified bachelor's degrees as a key determinant for one's income, so they are dedicating resources to supporting students through higher education.

Our research question is as follows: Can a bachelor's degree eliminate the influence of individual and family characteristics on income? We hypothesize that if a respondent has a bachelor's degree, they can overcome influences from their individual and family characteristics.

Theory

Human-capital theory states that individuals are able to acquire new skills through education and thus become more productive. Meanwhile, together with the marginal-benefit theory of wages, education achievements matter for one's income level because firms are incentivized to only pay a workers' marginal product of labor to maximize their profits. As the worker's productivity grows, the worker's output rises and they enjoy a higher level of income. As a result,

individual education E_i is the variable of our key interest, family characteristics FC_i , and individual characteristics IC_i order to determine one's income.

$$I_i = f(E_i, FC_i, IC_i) \quad (1)$$

Respondents who have received a bachelor's degree have productive skills in their area of expertise, which leads to a higher income. However, many other variables tend to have an impact on the individual income. We included various control variables to help determine the true effects of education on income. These variables are grouped into two sets: individual characteristics and family characteristics. The individual characteristics are factors specific to the individual that would affect their own income, whereas family characteristics identify the situation the individual was born into. Soft skills are often influenced by the family background, and having soft skills such as confidence and communication allows them to succeed even more in the workplace. Educated parents, who are financially stable, are more likely to focus on cultivating their children's soft skills. As a result, children of well-educated parents tend to have an advantage in both academics and soft skills.

Literature Review

Our paper was influenced by some of the current literature on intergenerational success and the relationship between education and income.

An intergenerational correlation of 0.58 between parental income and children's adult earnings was estimated by Behrman and Taubman (1990). Hill and O'Neill (1994) demonstrated that parents pass on certain soft skills to their children that can increase children's incomes, using the Becker-Tomes model. Ermisch and Francesconi (2001) found that family backgrounds can influence the success and educational attainments of children, using the British Household Panel Study data. Our probit regression analysis contributes to our understanding of how low family income influences the likelihood of upward mobility to a high-income group for individuals with a bachelor's degree, by examining probabilities.

Some studies suggest that negative intergenerational pattern can be altered with education. Torche (2011, 2014) found and replicated the conclusion that a bachelor's degree can eliminate the influence from the family background. Our regression analysis includes new control variables,

such as religious affiliation strength and family size. Another contribution of our paper is the use of the probit model to compare the impact of family income on upward mobility to a high-income group for individuals with different levels of education, including bachelor's degree, associate degree, and high school education.

Data Description

Our dataset consists of four groups of variables: income, education, individual characteristics, and family characteristics ([Appendix E](#)). Our pooled cross-sectional data has been collected by the GSS and spans 2006-2014.

The dependent variable is respondents' income. The variable exhibits a reasonable distribution without any heavy skewness. However, the earning variable used is limited in precision as it is given from the survey as a categorical variable measured by different income intervals. In order to fix this issue, we have replaced each interval with the median value of the interval. For example, for the \$5,000-\$10,000 interval, we have replaced the income for those respondents with \$7,500. The income minimum is \$500 and reaches the maximum of \$200,000. The median income of our sample is \$32,500, which is representative of the United States national median income of \$33,195 (during the 2006-2014 period) (FRED, 2018). This accuracy in our data tells us that our results have the potential to be externally valid, applying to individuals outside of our data set.

We included a dummy variable for whether or not the respondent has earned a bachelor's degree. In our dataset, 18% of respondents have earned a bachelor's degree, which is closely representative of the U.S. national average. In 2021, 23% of Americans had earned their bachelor's degree (Bureau, 2022). This dummy variable is our key independent variable that we will use to interpret the results and the effects of a bachelor's degree on one's income.

In order to see the true effects of the bachelor's degree, we added various control variables to the regression. Our IC_i control variables include respondent's marital status, age, sex, race, region, strength of religious affiliation, health condition, and drug use.

The FC_i control variables used are respondent's number of brothers and sisters, parental education, region of residence when respondent was 16, family income when respondent was 16, whether or not their parents were born in the United States, mother's occupational prestige, and

father's occupational prestige. These variables will all affect the coefficients on the bachelor's degree variable, but we will not interpret these results.

During the time span of data, the financial crash of 2008 took a toll on many families, and data results may have affected individuals differently during the crash. Due to this issue, we have also included time fixed effects to mitigate the effects of economic shock to our dataset.

The survey nature also induces potential priming bias and reporting precision for a variety of factors. In terms of the religious affiliation question, people may skew their answers out of exaggeration or modesty. Similar to most other research, the data quality problem has been challenging in terms of collecting a totally random sample. Such concern applies to the regression analysis as the data is sourced from a social survey. The availability of data is also vital for minimizing the omitted variable bias. The presence of omitted variable bias is still likely in our regression analysis, undermining the correlation coefficient. However, the large sample size of our data set, the use of certain regression strategies, and reputation of the GSS mitigate the effects of these potential data errors

Estimation Strategy

This paper uses the Ordinary Least Squared (OLS) regression model and probit model to estimate the bachelor's degree's impact on an individual's income. The regression analysis starts with the full sample and then digs into the sub-samples with separate regressions. Control variables are added to minimize the omitted variable bias. Time fixed effects are also included in the regressions with more than one year of data. Our regression analysis includes four parts: general analysis, 2008 financial crisis analysis, comparison between high family income and low family income group, significance of having a bachelor's degree for low family income group.

A general OLS regression is the introductory regression analysis of how a bachelor's degree influences the individual income. Similarly, with a binary dependent variable of respondent's income group, probit regression is applied to observe on average how much more likely an individual with a bachelor's degree can move up to high-income group. However, a general overview is not likely sufficient to guide us to draw specific conclusions and produce policy recommendations. Regressions based on specifically segmented sub-samples are used to identify how a bachelor's degree impact on individuals' income varies across time and groups.

Firstly, we segment the data into three groups: before, during, and after the 2008 financial crisis to evaluate how the crisis may influence the return from having a bachelor's degree. OLS regression is performed to allow for a comparison and identify the role of the 2008 financial crisis.

The second segmentation is based on family income when the respondent was 16: above-average and below-average. We then compare the results from the two OLS regressions to explore how family incomes influence the return from having a bachelor's degree.

In order to test the theory of intergenerational success, the probit regression focuses strictly on the below-average family income group to find the effect of a bachelor's degree on raising one of these individuals from the lower-class to the upper-class. To see how crucial a bachelor's degree is, we also run the probit regression on the associate's degree and high school degree to test the true effect of the bachelor's degree

One potential limitation in our estimation strategy is the effect of changing societal standards (Hill & O'Neill, 1994). For example, the changing rate of religious affiliation and female employment could be factors that cannot be controlled for. The financial crisis could also have significant effects on the way that people are spending money. People might be more frugal and avoid investing in education because of the economic shock. Solon's research in 1992 demonstrates the negative effects of taking data from only one source. In order to truly see the effects of education, we would have to take a wider range of years with hyper specific income figures to give us more accurate results.

Regression Analysis

General OLS and Probit Regression Analysis

Regressions Result Table 1		
VARIABLES	(1) OLS	(2) Probit
bachelor	\$11,724*** (1,503)	0.604*** (0.0977)
Constant	-4,471 (5,769)	0.322** (0.161)
Observations	3,676	5,079
R-squared	0.130	

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Complete regression table can be found in [Appendix A](#)

The regression in Table 1 includes our whole range of years, our bachelor's degree dummy variable, and the list of control variables, including yearly fixed effects. With this regression, we see that on average the presence of a bachelor's degree results in an increase in yearly salary of \$11,724, which is a statistically significant coefficient. The change in income is also clinically significant, with the change in income roughly bringing the respondent from the 25th to 50th percentile in income, or from lower class to middle class. However, there are also other variables, like sex, race, father's degree, and mother's job prestige score that are significant that could be affecting the change. With this regression, we see that while bachelor's degrees are important, and are definitely an important factor in determining one's income, factors like individual characteristics and family characteristics must also be accounted for.

In Table 1, Column 2, we introduced the binary independent variable of the income group for the probit regression, which is divided by the sample's median income value. The income group variable equals to 1 if respondents belong to the high-income group. We used the probit model to regress the income group variable on the bachelor's degree with the list of control variables and time fixed effects. Respondents, whose education attainment is higher than bachelor, are also excluded from the regression. The estimated coefficient of 0.604 is reasonable, with a confidence interval ranging from 0.412 to 0.795, and a statistically significant p-value of 0 at the 1% level (Table 1 Column 2). The positive sign also matches with our expectation. Having a bachelor's degree is, on average, associated with a 72.57% chance of moving up from the low-income group to the high-income group, after converting the coefficient into a probability value using a z-table. This probit model demonstrates that when controlling for all other factors, a bachelor's degree is extremely useful for moving to the high-income group.

Before, During, and After 2008 Financial Crisis

Regressions Result Table 2			
VARIABLES	(1) OLS Before 2008 Crisis	(2) OLS During 2008 Crisis	(3) OLS After 2008 Crisis
bachelor	\$15,425*** (2,878)	\$12,103*** (3,678)	\$10,402*** (2,028)
Constant	5,117 (21,403)	5,298 (13,801)	-4,277 (7,021)
Observations	917	634	2,125
R-squared	0.126	0.149	0.132

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Complete regression table can be found in [Appendix B](#)

In order to examine the effects of a bachelor's degree over time, especially since our dataset includes the financial crash of 2008, we next segmented the data by year to see the effect of the Great Recession. We have broken up our time-segmented regressions into three groups: before the recession, during the recession, and after the recession. When running the before recession regression, we found that on average, the presence of a bachelor's degree increases average annual income by \$15,425, which is statistically significant and clinically significant, again, because it would move the respondent from the 25th to the 50th income percentile (See Column 1 in Table 2). During the recession, we found that on average, the presence of a bachelor's degree increases the average annual income by \$12,103, which is statistically significant and clinically significant (See Column 2 in Table 2). After the recession, we found that on average, the presence of a bachelor's degree increases the average annual income by only \$10,401, which is statistically significant, but less clinically significant (See Column 3 in Table 2). An increase of \$10,401 is only roughly 20% of a standard deviation, compared to pre-recession, where the income change was roughly 40% of a standard deviation. By segmenting this data, we have found that the value of a bachelor's degree has decreased over time, which could possibly be an effect of the Great Recession. If firms had less money to pay their employees during and shortly after the Great Recession, wages across the county would decrease, including those that have earned their bachelor's degrees. Throughout these years, however, the presence of a bachelor's degree is somewhat significant, and variables

like sex are statistically significant, which shows that income is determined from a bachelor's degree, but also a variety of individual and family characteristics.

Effect of Bachelor's Degree by Family Income Group

Regressions Result Table 3		
VARIABLES	(1)	(2)
	Below Average Family Income Group	Above Average Family Income Group
bachelor	\$20,910*** (1,611)	\$23,165*** (3,089)
Constant	9,663 (5,935)	23,070* (13,506)
Observations	2,492	675
R-squared	0.151	0.231

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Complete regression table can be found in [Appendix C](#)

We ran separate regressions using our dummy variable with the two income groups in order to test the difference in the effect of a bachelor's degree for a low-income versus a high-income person. As shown in Table 3, with p-values of zero, both regressions show strong statistical significance at the 1% level. A bachelor's degree is associated with an average increase in income of \$20,910.66 for respondents from a below-average family income group, and \$23,165.22 for respondents from an above-average family income group (See Table 3). Compared with the income variable's standard deviation of 39467.67 (See Appendix), bachelor's degree impact on individual income is clinically significant regardless of the family income situation since the coefficient sizes are more than half of one standard deviation.

Interestingly, with same control variables, people from high family income backgrounds have 22% more return from a bachelor's degree. This may arise from variances in the social connections between high-income and low-income families. For example, if someone comes from a high-income family, they or their parents may have more connections in the professional world that would highly benefit and improve the income of one who has earned their bachelor's degree. The high-income parents could also instill soft skills in their children from their experience in the professional world that would highly benefit a bachelor's degree recipient.

The value of a bachelor's degree may also vary depending the quality of the institution that the respondent receives their bachelor's degree from. A low-income family may opt for a cheaper school, perhaps in-state, that doesn't have the same educational returns as an out-of-state institution. High-income families have the resources to send their children to much more expensive schools, that perhaps benefit the respondent more in the professional world, leading to an increased income.

Bachelor's, Associate's, High school for Below-average Family Income Group

Regressions Result Table 4			
VARIABLES	(1) Probit Bachelor	(2) Probit Associate	(3) Probit High School
Bachelor	0.480*** (0.0603)		
Associate_JC		0.111 (0.0690)	
High_School			-0.190*** (0.0711)
Constant	0.286* (0.156)	0.0893 (0.159)	0.399** (0.202)
Observations	4,062	4,062	2,844

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Complete regression table can be found in [Appendix D](#)

Since we also have data on specific level of educational attainment for the respondent, we are able to determine the probability that someone coming from a low-income family background is able to reach the high-income group based on their degree. Specifically, we looked at high-school graduates and associate's degree/junior college graduates. The bachelor's degree turns out to be the only statistically significant variable with a positive sign compared with associate and high school. Having a bachelor's degree on average brings about a 68% chance of moving up in income group. Meanwhile, an individual with a high school degree on average has a 42% chance of entering the high-income group. Notably, an associate's degree, which requires similar time and resources as a bachelor's, seems unable to lift people up to a higher income group as the p-value is not significant at 10% level and a confidence interval ranges from negative to positive values.

Controlling for individual and family characteristics, a bachelor's degree has a 26% higher chance than a high school degree to move an individual up to an above-average income group.

Conclusion

Through our research, we found that the presence of a bachelor's degree is highly significant in determining one's income. Our bachelor's degree was statistically significant throughout all of our regressions, which proves its importance. We also learned that people are a lot more likely to jump into the high-income group by obtaining their bachelor's degree than associate and high school, but those who come from higher-income families do see better returns on their educational investment than those who come from low-income families. That said, the government should continue to push students to obtain their bachelor's degrees through scholarship programs and sponsorships. Families should also be education-focused, pushing their children to obtain their bachelor's degrees. The overall goal should be to push students, no matter their individual or family backgrounds, to earn their bachelor's degrees to maximize their income levels.

The largest limitations we faces surrounded the data. First, the income data only spanned 2006-2014, which doesn't show long-term effects of the value of a bachelor's degree. The General Social Survey is also a pooled cross-sectional data instead of a panel data, which may undermine our estimation strategy and thus regression analysis. Our income data also isn't very specific, as we were forced to use the median of the income interval given by the GSS to estimate the effects of the bachelor's degree. The family income data was also vague, as the answers spanned from "far below average" to "far above average." The distinctions between these groups were important in our regressions, as we segmented data based on these labels, but to each respondent, the difference between "far below average" and "below average" can be rather arbitrary. If we had access to IRS data or some sort of hyper specific government panel data, our regressions and results could have been much more accurate, but we feel that with the analyses used, we provide a fairly accurate estimation of our research question.

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Appendix A

VARIABLES	(1) OLS	(2) Probit
bachelor	11,724*** (1,503)	0.604*** (0.0977)
o.year_1	-	-
year_2	-1,362 (1,926)	-0.0966* (0.0569)
year_3	938.0 (2,094)	-0.0708 (0.0619)
year_4	-48.47 (2,065)	-0.167*** (0.0609)
year_5		-0.121** (0.0614)
papres10	165.1*** (54.69)	-0.000956 (0.00174)
mapres10	168.2*** (55.07)	-0.00240 (0.00172)
marital_status	10,331*** (1,258)	0.151*** (0.0396)
male	17,443*** (1,247)	0.261*** (0.0391)
white	3,826** (1,634)	0.152*** (0.0490)
two_parents16	6,971* (3,573)	0.0781 (0.102)
o.single_parent16	-	-
US_parents	-1,186 (1,740)	0.0559 (0.0536)
E_N_central	5,133* (3,045)	-0.0506 (0.0759)
E_S_atlantic		-0.0903 (0.100)
Middle_atlantic	10,540*** (3,253)	0.146* (0.0842)
Mtn	5,263 (3,405)	-0.0185 (0.0894)
New_engl	6,680* (3,863)	-0.0561 (0.113)
Pacific	10,692*** (3,137)	0.0664 (0.0787)
S_Atlantic	5,785* (2,974)	-0.0905 (0.0721)

W_N_Central	2,040 (3,576)	-0.131 (0.0968)
o.W_S_Central		-
degree_number		-0.0717* (0.0430)
familyincome16_number		0.0186 (0.0222)
family16_numbers	-207.7 (641.4)	0.00304 (0.0182)
padeg_number	1,627*** (542.9)	0.0298 (0.0182)
madeg_number	-378.6 (557.7)	-0.0230 (0.0188)
religious	1,744 (1,296)	0.113*** (0.0400)
great_health	3,212*** (1,242)	-0.111*** (0.0386)
drug_history	-6,419* (3,888)	0.0529 (0.113)
o.E_S_atlantic	-	
W_S_Central	6,403* (3,359)	
o.year_5	-	
year_6	4,968** (1,969)	
Associate_JC		
Constant	-4,471 (5,769)	0.322** (0.161)
Observations	3,676	5,079
R-squared	0.130	

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix B

VARIABLES	(1) Before 2008 Crisis	(2) 2008 Crisis	(3) After 2008 Crisis
bachelor	15,425*** (2,878)	12,103*** (3,678)	10,402*** (2,028)
drug_history	2,970 (7,540)	-15,966 (9,801)	-7,927 (5,197)
great_health	1,366 (2,403)	4,864 (2,993)	3,546** (1,679)
religious	4,053 (2,469)	-1,961 (3,131)	1,881 (1,766)
madeg_number	-380.9 (1,079)	-1,559 (1,400)	-213.2 (746.7)
padeg_number	680.9 (1,038)	1,749 (1,315)	2,089*** (741.2)
family16_numbers	-241.3 (1,983)	-1,720 (1,518)	-334.9 (811.3)
US_parents	-317.7 (3,601)	222.6 (4,275)	-1,530 (2,279)
o.single_parent16	-	-	-
two_parents16	-6,731 (18,043)	3,023 (8,588)	8,330** (4,141)
white	4,345 (3,252)	5,799 (3,924)	3,175 (2,191)
male	17,934*** (2,420)	20,442*** (2,987)	16,523*** (1,685)
marital_status	5,465** (2,427)	8,065*** (2,994)	13,157*** (1,707)
mapres10	163.5 (112.0)	119.2 (133.5)	180.8** (72.75)
papres10	134.3 (108.7)	200.8 (137.8)	159.7** (72.33)
E_N_central	11,470* (6,056)	-2,113 (7,631)	5,346 (4,018)
o.E_S_atlantic	-	-	-
Middle_atlantic	12,463* (6,384)	9,929 (7,888)	10,362** (4,367)
Mtn	12,662* (6,695)	-345.5 (8,667)	4,612 (4,497)
New_engl	12,625 (7,693)	6,741 (10,307)	5,380 (5,020)
Pacific	17,577***	4,798	10,183**

	(6,199)	(7,731)	(4,164)
S_Atlantic	10,856*	3,691	4,724
	(5,896)	(7,327)	(3,946)
W_N_Central	10,858	-7,900	1,764
	(7,322)	(8,833)	(4,681)
W_S_Central	10,692	2,901	6,598
	(6,672)	(8,273)	(4,472)
Constant	5,117	5,298	-4,277
	(21,403)	(13,801)	(7,021)
Observations	917	634	2,125
R-squared	0.126	0.149	0.132

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix C

VARIABLES	(1) Below Average Income Group	(2) Above Average Income Group
bachelor	20,910*** (1,611)	23,165*** (3,089)
o.year_1	-	-
year_2	-3,901** (1,861)	642.3 (4,121)
year_3	-2,243 (2,049)	-910.8 (4,456)
year_4	-3,933* (2,035)	-1,399 (4,324)
year_5	-5,659*** (2,040)	670.1 (4,634)
drug_history	-3,824 (3,968)	3,404 (7,523)
great_health	2,110* (1,282)	-1,835 (2,812)
religious	820.7 (1,337)	1,202 (3,009)
madeg_number	-1,558** (633.3)	-2,104* (1,119)
padeg_number	-420.7 (626.4)	1,702 (1,039)
family16_numbers	210.9 (624.7)	-888.7 (1,605)
US_parents	-7.406 (1,816)	-4,520 (4,044)
o.single_parent16	-	-
two_parents16	6,916** (3,524)	-4,326 (8,135)
white	5,443*** (1,655)	-414.4 (3,886)
male	14,751*** (1,289)	23,611*** (2,861)
marital_status	5,525*** (1,308)	11,906*** (2,893)
mapres10	59.62 (57.02)	-53.26 (130.5)
papres10	107.8* (59.93)	-47.81 (113.6)
E_N_central	-612.6 (3,462)	8,853 (7,776)

E_S_atlantic	-2,134 (4,115)	
Middle_atlantic	3,321 (3,657)	7,096 (8,569)
Mtn	870.8 (3,838)	20,315** (8,300)
o.New_engl	-	
Pacific	2,947 (3,554)	18,684** (7,840)
S_Atlantic	-866.9 (3,426)	11,593 (7,660)
W_N_Central	-4,385 (3,935)	5,225 (9,412)
W_S_Central	5,339 (3,743)	8,345 (8,458)
o.E_S_atlantic		-
New_engl		8,686 (9,102)
Constant	9,663 (5,935)	23,070* (13,506)
Observations	2,492	675
R-squared	0.151	0.231

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix D

VARIABLES	(1) Probit Bachelor	(2) Probit Associate	(3) Probit High School
High_School			-0.190*** (0.0711)
o.year_1	-	-	-
year_2	-0.0934 (0.0629)	-0.101 (0.0625)	-0.0999 (0.0747)
year_3	-0.0578 (0.0693)	-0.0643 (0.0689)	-0.0858 (0.0809)
year_4	-0.162** (0.0683)	-0.171** (0.0679)	-0.203** (0.0790)
year_5	-0.127* (0.0678)	-0.127* (0.0674)	-0.191** (0.0790)
papres10	-7.69e-05 (0.00199)	0.00173 (0.00198)	-3.65e-05 (0.00242)
mapres10	-0.00249 (0.00189)	-0.000327 (0.00188)	-0.00257 (0.00225)
marital_status	0.138*** (0.0440)	0.169*** (0.0437)	0.116** (0.0514)
male	0.252*** (0.0436)	0.244*** (0.0433)	0.192*** (0.0508)
white	0.176*** (0.0536)	0.186*** (0.0533)	0.199*** (0.0619)
two_parents16	0.0842 (0.101)	0.119 (0.101)	0.136 (0.124)
o.single_parent16	-	-	-
US_parents	0.0482 (0.0594)	0.0451 (0.0591)	0.109 (0.0710)
E_N_central	-0.0371 (0.0840)	-0.0269 (0.0834)	-0.0443 (0.0962)
E_S_atlantic	-0.131 (0.110)	-0.134 (0.110)	-0.0469 (0.126)
Middle_atlantic	0.153* (0.0925)	0.195** (0.0917)	0.123 (0.108)
Mtn	-0.0893 (0.101)	-0.0572 (0.100)	-0.117 (0.118)
New_engl	-0.105 (0.128)	-0.0160 (0.127)	0.0624 (0.158)
Pacific	0.00226 (0.0874)	0.0406 (0.0868)	0.0107 (0.101)
S_Atlantic	-0.135* (0.0794)	-0.126 (0.0789)	-0.143 (0.0912)

W_N_Central	-0.131 (0.106)	-0.0953 (0.106)	-0.0379 (0.124)
o.W_S_Central	-	-	-
o.degree_number			-
familyincome16_number			-0.0167 (0.0353)
family16_numbers			0.0136 (0.0221)
padeg_number	0.0165 (0.0220)	0.0320 (0.0216)	0.0113 (0.0289)
madeg_number	-0.0202 (0.0222)	-0.00860 (0.0220)	-0.0167 (0.0282)
religious	0.115*** (0.0443)	0.131*** (0.0441)	0.134*** (0.0520)
great_health	-0.110** (0.0428)	-0.0775* (0.0426)	-0.125** (0.0503)
drug_history	-0.0525 (0.128)	-0.0870 (0.127)	-0.0308 (0.139)
bachelor	0.480*** (0.0603)		
Associate_JC		0.111 (0.0690)	
Constant	0.286* (0.156)	0.0893 (0.159)	0.399** (0.202)
Observations	4,062	4,062	2,844

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix E

Variable	Name	Category
Income_numbers	Individual income	Dependent variable
bachelor	Whether or not the respondent has a bachelor's degree	Independent Variable
Associate_JC	Whether or not the respondent has an associate or junior college degree	Independent Variable
High_School	Whether or not the respondent only has a high school degree	Independent Variable
year_1	2006	Time Fixed Effect
year_2	2008	Time Fixed Effect
year_3	2010	Time Fixed Effect
year_4	2012	Time Fixed Effect
year_5	2014	Time Fixed Effect
mapres10	Mother's Occupation Prestige Score	Control
marital_status	Respondent's marital status	Control
male	If the respondent is a male	Control
white	If the respondent is white	Control
two_parents16	If the respondent has two parents at the age of 16	Control
US_parents	If both respondent's parents are born in the US	Control
degree_number	The respondent's educational attainment level	Control
familyincome16_number	The respondent's family income level at the age of 16	Control
family16_numbers	The number of brothers and sisters living in the respondent's family at the age of 16	Control
padeq_number	Father's educational attainment	Control
madeq_number	Mother's educational attainment	Control
religious	Whether or not the respondent identifies as religious	Control
great_health	Whether or not they have good health	Control
drug_history	Whether or not the respondent has a drug history	Control
E_N_central	East North Central	Region at time of response
E_S_atlantic	East South Atlantic	Region at time of response

Middle_atlantic	Middle Atlantic	Region at time of response
Mtn	Mountain	Region at time of response
New_engl	New England	Region at time of response
Pacific	Pacific	Region at time of response
S_Atlantic	South Atlantic	Region at time of response
W_N_Central	West North Central	Region at time of response
W_S_Central	West South Central	Region at time of response