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ESSAYS ON EDUCATIONAL ATTAINMENT AND LABOR OUTCOMES

By

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I dedicate this dissertation to my parents, Aaron & Kimberly Burgin, who taught me to pursue a life with no ceiling. I also dedicate this dissertation to my two sisters, Alisha and Asia Burgin, together we form an unbreakable sister circle. I love you all.

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ABSTRACT

My dissertation includes three essays on educational attainment and labor outcomes, where each paper details an interesting topic related to education. Chapter 1 is the introduction of my dissertation. In Chapter 2, I estimate the correlation between parental wealth and educational attainment across age groups of 0-5, 6-10, 11-14, 15-18, and 19-25. Chapter 2 matches individual data to their corresponding family data. The data is compiled from the Panel Study of Income Dynamics to explore whether parental wealth during childhood correlates to the individual's educational attainment. I hypothesize that wealth has a positive relationship to educational attainment and that parental wealth during these age groups of childhood is an essential driver of differences in achievement later in life. My analysis concludes that parental wealth has a statistically significant correlation to educational attainment. When analyzed across age groups, parental wealth has the most substantial relationship to ages 0-5, the individual's early childhood education years.

In Chapter 3, I explore the relationship of spousal education on labor outcomes for women using data from the National Longitudinal Survey of Youth 1979. The main research question is whether the husband's level of education correlates to the wife's earnings. The sample includes controls for race and educational level for the females. Additionally, for comparison, my analysis is also estimated for men. Then, the additional regressions compare how spousal education correlates to females' earnings versus how spousal education correlates to earnings for males. I find that the perceived benefits of marriage are more robust for men and women.

In Chapter 4, I analyze academic achievement and efficacy in the Lake Wales Charter School System of Lake Wales, Florida. I use school-level data to conduct a difference-in-

difference estimation of Lake Wales Charter Schools compared to Polk County Public Schools. Additionally, I run a difference-in-difference estimation for the Lake Wales Charter School system up to four years post-implementation. Chapter 5 is the conclusion of my dissertation.

CHAPTER 1

INTRODUCTION

Education is widely viewed as a primary indicator of an individual's life chances and is considered a strong predictor of an individual's future and well-being. According to the *Pew Research Center*, regardless of the rise in college graduates' issues- such as substantial student loan debt, students with college degrees still outperform non-college graduates in numerous areas (Pew, 2014). Pew's analysis shows that individuals with a bachelor's degree earn 40% more annually than individuals with a high school diploma. Individuals who achieve only a high school diploma face unemployment at almost three times the rate of individuals who earn a bachelor's degree. Finally, their analysis finds that those who earn only a high school diploma are more likely to become poverty-stricken. This information is within Figure A.1: *Disparity among Millennials Ages 25-32 By Education Level in Terms of Annual Earnings,* located within Appendix A. Educational attainment, particularly at the college level, is directly related to heightened employment outcomes, increased earnings, and reduced poverty probability.

As education is one of the primary indicators of an individual's life chances, the importance of educational attainment cannot be understated. Exploring educational attainment is complex. There are internal and external factors related to the individual's educational attainment and life chances. Internal factors that may often influence educational attainment and life chances are intellectual ability and ambition. My dissertation examines some of the external complexities of education that may impact an individual, such as parental wealth (explored in Chapter 2), spousal education (explored in Chapter 3), and educational institutions (explored in Chapter 4). Each chapter of my dissertation discusses one of these complexities. Each of these dynamics in education is complex and interestingly extends beyond the individual's internal

abilities. Thus, it is critical to understand how these factors may relate to the educational attainment and success of the individual.

Chapter 2 explores the individual's parental wealth during childhood (age groups of 0-5, 6-10, 11-14, 15-18, and 19-25) on their educational attainment during years 25-36. It analyzes the individual's family dynamics and parental wealth on their attained education level. In Chapter 2, the external factors are family dynamics and parental wealth. My analysis considers the parental wealth during these ages to examine when parental wealth correlates to the individual most. Chapter 3 analyzes the relationships of a husband's education on his wife's earnings. Thus, the chapter discusses whether the external factor of the females' spouse's education correlates to her own ability to earn. Chapter 4 analyzes the Lake Wales Charter School system's students relative to Polk County Public Schools students, and this final chapter examines the external factors -the institutional structures on the child's educational attainment. Chapter 4's study explores comparisons between students within the Lake Wale Charter School System and students in the remaining Polk county cities, excluding Polk County Charter Schools.

CHAPTER 2

PARENTAL WEALTH ON EDUCATIONAL ATTAINMENT

I further research by analyzing whether educational attainment varies based on parental wealth at different ages in childhood. Thus, I estimate parental wealth's correlation to educational attainment in the presence of age groups 0-5, 6-10, 11-14, 15-18, and 19-25. The study presented herein will check for robustness using a box-cox transformation of the dependent variable, ordered logistic regression, and probit estimations. In addition, I include demographic controls for family dynamics during childhood. The controls are the parent's race, locational region during childhood, age of both the head of household and individual, parental education, number of siblings, and gender of both the head of household and individual. Finally, I replicate Duncan et al. (1998)'s model for age groups.

2.1 Introduction

Wealth accumulates all past savings, transfers, and net shocks to income and consumption (Kennickell,1999). Shocks to income and consumption may be events such as unemployment or financial risks.[1] "Wealth brings security, choices of where to live, protection from the stresses of short-term unemployment and other emergencies, ability to fund a college education, and a psychological, as well as, financial investment in a community." (Easton-Brooks, Davis 2007). Income alone does not provide a complete picture of economic well-being, as income only examines the flow of resources during a given point in time and not the total

[1] Jones, Janelle. "The racial wealth gap: How African-Americans have been shortchanged out of the materials to build wealth." Economic Policy Institute, www.epi.org/blog/the-racial-wealth-gap-how-african-americans-have-been-shortchanged-out-of-the-materials-to-build-wealth/. Accessed 29 Aug. 2017.

stock of financial resources. Parental wealth, also referred to as the economic well-being of a child's parents, allows families to transfer resources that have been saved and earned in the past to meet demands in the future. One primary demand is education. "Wealth is iterative: It provides people with the necessary initial capital to purchase an appreciating asset, which in turn generates more and more wealth, passed from one generation to the next." (Hamilton and Darity, 2017).

The socioeconomic gaps in education and wealth have been long-standing. Research has found that race is a primary source of income and wealth inequality. The existence and persistence of the racial wealth gap/inequality have not been disputed (Chiteji 2010; Leigh 2006). Data from the Pew Research Center (2014) states that in 1989, the median wealth of White households was 17 times the median wealth of Black households. In 2010, the median wealth of White households was eight times more than the median wealth of Black households. In 2013, the median wealth of White households was 13 times more than the median wealth of Black households. The Pew Research Center also states that racial wealth inequality has increased since 2007. Specifically, it has recently reached its highest point since 1989. (Kochhar & Cillffo, 2017)

Data from the 2015 Current Population Survey (CPS) conveys that the gap between the college completion of non-Hispanic Whites and non-Hispanic Blacks has remained constant since 1988, with the gap between the groups ranging from 11 to 14 percent. The gap between Hispanics and non-Hispanic Blacks has widened. In 1988, Hispanics' and non-Hispanic Blacks' college completion was relatively the same. As of 2015, the gap between the college completion of non-Hispanic Blacks and the college completion of Hispanics grew to 7 percent. This information is in Figure B.1 *Racial Disparities in Educational Attainment* (See Appendix B*)*.

The CPS also showed that college enrollment eclipses college completion, with Asians historically leading college enrollment followed by non-Hispanic Whites, non-Hispanic Blacks, and Hispanics. I seek to explore the relationship between parental wealth and educational attainment in the presence of such disparities.

I will estimate parental wealth's correlation to educational attainment. The main research question is, does parental wealth correlate with educational attainment? Do these relationships vary according to the level of parental wealth at different points/ages in childhood? The results are across the race and gender of the parent and the regional location lived during the individual's childhood. The rest of the paper is as follows: (2.2) literature review, (2.3) contributions, (2.4) data, (2.5) methodology, (2.6) results, (2.7) replicated methodology, (2.8) probit regressions, (2.9) robustness checks, and (2.10) conclusions.

2.2 Literature Review

Duncan et al. (1998) analyzed the total pre-tax income of all family members during childhood on life chances. In their analysis, life chances are educational attainment and non-marital fertility. They utilize the Panel Study of Income Dynamics data on individuals born between 1967 and 1973 and estimate these relationships in the presence of age groups of 0-5, 6-10, and 11-15. For example, an additional $10,000 in family income is positively correlated to an increase in educational attainment by three months for ages 0-5 and increases in educational attainment by 2-3 weeks for ages 6-10. Thus, within their analysis, achievement in education is a function of the family income.

Using data from the Panel Study of Income Dynamics, Conley (2001) estimates parental net worth on three educational attainment measures: total number of years of schooling, post-

secondary years of education, and college attendance. Parental net worth in 1984 is matched to the individual's educational outcomes in 1995 when the individual's age ranges from 19-30. Conley finds that doubling parental net worth is associated with an increase in the total number of years of schooling by about a month and a half and increased post-secondary years of education by about a month and a half. Additionally, the doubling of net worth increased the probability of attending college by 8.3 percent points.

Nam and Huang (2011) analyze the relationship between parental economic resources and their children's educational attainment. Parental economic resources include income, net worth, liquid assets, and homeownership. They compare two cohorts from the Panel Study of Income Dynamics using a probit estimation. The first cohort was 15-17 years old in 1984. The second cohort was 15-17 years old in 1994. The total number of students in 1984 was 390, and the total number of students in 1994 was 308, for a total of 698 individuals. An increase in net worth from zero to $30,000 is correlated with an increased chance of graduating from college by six percentage points for the 1984 cohort. There were no robust correlations to the 1994 cohort. An increase in liquid assets improved a child's chance of attending college by 17 percentage points in the 1984 cohort and had little relation to the 1994 cohort.

Ku and Plotnick (2003) analyze children's educational attainment from welfare families. The authors match individuals' educational attainment by age 19 to whether their parents received welfare receipts from birth to age 15 years of the child. The receipt of welfare was a poverty indicator. There are two educational attainment measures: the number of completed years of school and high school graduation. There are two welfare receipts: the number of years on welfare and the average annual welfare income over the entire span of the individual's childhood (15 years). The authors implement three age groups: birth to 5 years old, age 6 to age

10, and finally age 11 to 15. The study used data from 1968-1997 of the Panel Study of Income Dynamics. The study finds a significant negative relationship between educational attainment and welfare receipts. Receipts to the parents during ages eleven to fifteen had the most significant correlation to educational attainment, reducing high school completion by 0.205 percent.

In Zhan and Sherraden (2003), research on female parents found that their assets were positively related to their children's educational attainment. The results indicated that the probability of high school graduation for children whose mothers have savings of $3,000 or more is 1.3 times higher than the probability of children without savings. Morgan and Kim (2006) analyze young adult cohorts' educational attainment patterns. The two cohorts of young adults were 17-21 in 1986 (cohort one) and 1996 (cohort two), compiled using data from the Survey of Income and Program Participation; the authors found a relatively small increase in college entry for the wealthy. For cohort one, college enrollment's relative odds increased from 0.876 to 1.353. However, they could not attribute this increase to resources or family background.

2.3 Contributions

I further the current literature by estimating the relationship of parental wealth on educational attainment across age groups. This chapter explores whether there is variation in educational attainment according to the level of parental wealth at different ages of childhood. This type of study is less explored in current literature. According to Easton-Brooks, Davis (2007), wealth provides the most accurate picture of the family's economic well-being. Both Duncan et al. (1998) and Ku and Plotnick (2003) include age groups in their analysis. However, neither methodology seeks to measure if parental wealth correlates to educational attainment.

Duncan et al. (1998) analyze the correlation between family income and educational attainment, and Ku and Plotnick (2003) analyze welfare receipts on educational attainment. Again, neither utilize parental wealth. In Duncan et al. (1998), they use all earners' income in the household; they do not seek to define a parent-child relationship. Income only examines the flow of resources during a given point in time and not the total stock of financial resources. Thus, including a measure of wealth will allow for a better analysis of the financial picture.

Additionally, Duncan et al. (1998) include all family members in the income measure but limit all parent demographics to the maternal parent. Thus, paternal parent demographic information is omitted from his model. Duncan et al. (1998) and Ku and Plotnick (2003) use age groups from birth to 15. Thus, I extend the use of age groups by an additional decade. The extension will allow the study to explore the early adulthood of the child/individual, allowing for a more robust and complete analysis. Finally, I clearly define the parent-child relationship.

Conley (2001) does not analyze the relationships over time and does not include age groups. Conley matches the family data in 1984 to the individual data in 1995. Nam and Huang (2011) and Morgan and Kim (2006) each compare cohorts for their estimations, but the methodologies do not include age groups. Zhan & Sherraden (2003) also do not use parental wealth to measure wealth. Zhan and Sherraden (2003) analyze savings on educational attainment. I further the literature on the relationship between educational attainment and parental wealth across age groups.

My analysis's primary educational outcome is the highest level of education the individual obtains. Duncan et al. (1998) use years of education in one model and high school graduation in a subsequent model. Ku and Plotnick (2003), Morgan and Kim (2006), and Zhan and Sherraden (2003) each utilize high school graduation as the educational outcome. Nam and

Huang (2011) and Conley (2001) each utilize college attendance as the educational outcome. This study will further current literature using a more comprehensive educational attainment range as the primary dependent variable measure. In this study, the educational attainment outcome ranges from primary education to advanced post-secondary education. I expand the educational outcomes using additional measures (high school completion, college attendance, and college graduation) in the probit estimations.

2.3.1. Wealth Matters & The Importance of the Age Groups

There is an assumption that the most predictive years on an individual's post-secondary success and life chances are the secondary years of education, 6th grade through 12th grade. Much of the literature focuses on assessing the individual's environment during these years. However, as in Duncan et al. (1998), the author's results concluded that the most predictive and impactful years (parental wealth on educational attainment) were ages 0-5. An individual whose parents have higher parental wealth at birth may have increased life chances than an individual whose parents obtained their wealth in the individual's later years. I seek to determine during what years is parental wealth most critical to the individual's educational success.

The inclusion of age groups is a vital contribution of this chapter and allows for an analysis that explores a larger span of the individual's childhood. Wolfe et al. (1996) tested the ability of shorter, constrained observational durations to accurately and consistently describe the entire childhood experience. Their estimation finds that analyzing family circumstances during limited childhood sections may produce biased results and weak proxies. Furthermore, "window variables describing intermittent events and discontinuous periods of more persistent characteristics may fail to correspond to variables describing the entire childhood experience."

(Wolfe et al., 1996). Window variables are observational snapshots: short periods or snapshots of one year. Such analysis may produce inferences that may be misleading.

Ku and Plotnick (2003) note the possible bias caused by analyzing shorter observational periods and sought to further literature by including age groups within research subject areas less explored in related literature. Duncan et al. (1998) and Ku and Plotnick (2003) analyze more extended childhood periods and find results that vary during the changing age groups and throughout the individual's overall childhood experience. I seek to find the age groups where parental wealth has the most substantial impact. There is a need to produce studies that analyze longer durations of childhood. The individuals are ages 25-36. The individual's educational outcomes from ages 25-36 matched to their childhood circumstances from birth to age 25. Thus, the individual's entire childhood (parental data and family data) up to age 25 are analyzed across the individual's outcomes beginning at age 25, providing a seamless observational duration and a comprehensive analysis.

2.4 Data

I use biennial data from the Panel Study of Income Dynamics from 1999-2017 on individuals and their families. The study updates the data used in previous works by over 20 years. The Panel Study of Income Dynamics (PSID) is a longitudinal panel survey of American families conducted by the Survey Research Center at the University using 5,000 families. The PSID measures socioeconomic factors over families' life course and multiple generations. Within the PSID data set, individual data may be matched to family data, allowing for a robust cross-sectional analysis. Here, parental wealth (and other family data during childhood) is matched to young adult educational outcomes and characteristics (see Figure B.2). During 1984, 1989, 1994, and 1999, parental wealth includes information on the household head. The head of

the household can be male or female. Wealth is the sum of values seven asset types: (1) home equity, (2) the net value of vehicles or other assets 'on wheels, (3) the net value of farm or business assets, (4) value of shares of stock in publicly held corporations, mutual funds or investment trusts, including stocks in IRAs (IRAs asked separately in 1999), (5) value of checking and savings accounts, money market funds, certificates of deposit, savings bonds, Treasury bills, other IRAs (IRAs asked separately in 1999), (6) value of other investments in trusts or estates, bond funds, life insurance policies, special collections, (7) value of debts other than mortgages, such as credit cards, student loans, medical or legal bills, personal loans. In this analysis, the amount of wealth ranges from -$89,815 to $1,836,320. The number of children in the household is the individual/young adult's siblings.

2.4.1. Sample

The sample is an overlapping panel of young adults and their parents[2]. The young adults are 25 – 36 years of age for each year of the study, yielding 42,812 observations. This sample is an overlapping panel of the same individuals observed (interviewed by PSID) from 1999-2017. For example, the sample includes young adults 25 – 36 years of age in 1999. For 2000, persons 24 years of age in 1999 are included, and persons 36 in 1999 are dropped from the sample. Demographic information is not included on the head of the household's spouse. The relationship between the head of the household's spouse and the child/individual is challenging to define. However, wealth information is captured on the head of the household and their spouse within the parental wealth variable. Again, the head of the household can be male or female. In

[2] The parent-child relationship is defined as: genetic son or daughter, adopted son or daughter, step-son or step-daughter by a legal spouse, and son or daughter by cohabiting partner (co-habitation must have occurred for at least 12 months)

the PSID dataset, the parent's race is a proxy for the individual's race. Thus, to estimate racial disparities, the parent's race is included. In this sample, the racial groups are non-Hispanic White, non-Hispanic Black, and Hispanic. Due to a low number of observations, other racial groups (Asian, American Indian, and 'Other') are removed. Table 2.2: *Characteristics* denotes the characteristics (observations, mean, standard deviation, minimum, and maximum for all variables). The mean data is weighted to re-balance the data, account for attrition and non-response, and obtain accurate, descriptive statistics.

2.4.2. Measurements

This study generates a combined wealth variable from 1984, 1989, 1994, and 1999 across the five age groups to create the interaction variables. Recall, the age range for the individuals observed in this sample is 25-36. For example, let's construct the 0-5 age group,

A person between 0-5 in 1984 is 21-26 in 2005, and their educational attainment is observed from years 2005-2015 when they are between ages 25-36.

A person between 0-5 in 1989 is 20-25 in 2009, and their educational attainment is observed from years 2009-2017 when they are between ages 25-36.

A person between 0-5 in 1994 is 21-26 in 2015, and their educational attainment is observed from years 2015-2017 when they are between ages 25-36.

A person between 0-5 in 1999 is not observed.

This measurement is conducted for ages 0-5, 6-10, 11-14, 15-18, and 19-25 during each year of 1984, 1989, 1994, and 1999. It is complied across each age group, meaning the age group of 0-5 is combined parental wealth during ages 0-5 in 1984, 1989, 1994, and 1999. The code for each age group is in Table 2.1: *Age Group Overview*. A graphical demonstration of the creation

of the 0-5 age group is provided in Figures B.4, B.5, B.6, and B.7. Again, the age group variable is an interaction between the parent's wealth and the individual's age/child during that year. The education of the parent is a primary parental demographic control. Parents' education is the number of college years in 1999 (where the individual and family data begins). If the parent has a high school diploma or less, then the number of college years is 0.

Table 2.1: Age Groups Overview

Individual's age in 1984 (Example: a person who is between 0-5 in 1984 will be between 15-20 in 1999)										
	1999	**2001**	**2003**	**2005**	**2007**	**2009**	**2011**	**2013**	**2015**	**2017**
0 - 5				21-26	23-28	25-30	27-32	29-34	31-36	
6 - 10	21-25	23-27	25-29	27-31	29-33	31-35	33-37	35-39		
11 - 14	26-29	28-31	30-33	32-35	34-37	36-39				
15 - 18	30-33	32-35	34-37	36-39						
Individual's age in 1989 (Example: a person who is between 0-5 in 1989 will be between 10-15 in 1999)										
	1999	**2001**	**2003**	**2005**	**2007**	**2009**	**2011**	**2013**	**2015**	**2017**
0 - 5						20-25	22-27	24-29	26-31	28-33
6 - 10				22-26	24-28	29-30	28-32	30-34	32-36	34-38
11 - 14		23-26	25-28	27-30	29-32	31-34	33-36	35-38		
15 - 18	25-28	27-30	29-32	31-34	33-36	35-38				
Individual's age in 1994 (Example: a person who is between 0-5 in 1994 will be between 5-10 in 1999)										
	1999	**2001**	**2003**	**2005**	**2007**	**2009**	**2011**	**2013**	**2015**	**2017**
0 - 5									21-26	23-28
6 - 10						21-25	23-27	25-29	27-31	29-33
11 - 14				22-25	24-27	26-29	28-31	30-33	32-35	34-37
15 - 18		22-25	24-27	26-29	28-31	30-33	32-35	34-37	36-39	
Individual's age in 1999 (Example: a person who is between 0-5 in 1999 will be between 0-5 in 1999)										
	1999	**2001**	**2003**	**2005**	**2007**	**2009**	**2011**	**2013**	**2015**	**2017**
0 - 5										
6 - 10									22-26	24-28
11 - 14							23-26	25-28	27-30	29-32
15 - 18					23-26	25-28	27-30	29-32	31-34	33-36

Table 2.2: Characteristics

Variable	Observations	Mean	Std. Dev	Min	Max
Age (Individual)	42,812	30.30	3.42	25	36
Gender (Individual)	42,812	1.53	0.4986	1	2
Years of Education (Individual)	40,465	13.61	2.17	1	17
Non-Hispanic White Parent	40,975	0.5550	0.4978	0	1
Non-Hispanic Black Parent	40,975	0.3429	0.4746	0	1
Hispanic Parent	40,975	0.0607	0.2388	0	1
Age of Parent in 1999	40,975	38.011	11.15	17	90
Parental Education in 1999	40,975	1.29	1.76	0	5
Parental Gender in 1999	40,975	1.27	0.4449	1	2
Number of Siblings in HH	40,975	1.53	1.38	0	9
Northeast Region in Childhood	40,975	0.0006	0.2518	0	1
Northcentral Region in Childhood	40,975	0.1288	0.3350	0	1
South Region in Childhood	40,975	0.2596	0.4384	0	1
West Region in Childhood	40,975	0.4188	0.4933	0	1
Parental Wealth Control Variables					
Wealth of Parent in 1984	35,019	5,618	17,698	-49,799	932,650
Wealth of Parent in 1989	32,912	8,870	41,484	-77,989	1,461,000
Wealth of Parent in 1994	37,897	10,027	31,566	-29,600	720,600
Wealth of Parent in 1999	40,975	12,718	55,518	-89,815	1,836,320
Wealth Ages 0-5	17,956	4,708	12,674	-69,150	316,850
Wealth Ages 6-10	26,420	7,234	21630	-89.815	1,130,000
Wealth Ages 11-14	25,757	9,848	30,350	-89.815	1,836,320
Wealth Ages 15-18	23,779	13,733	54,977	-29,600	1,836,320
Wealth Ages 19-25	23,478	10,663	49,114	-29,400	1,461,000
Data from Panel Study of Income Dynamics, 1999-2017					

Source: Author's calculations, Panel Study of Income Dynamics, 1999 – 2017. All individuals are 25 – 36 years of age during the survey year.

2.5 Methodology

I estimate whether the student's educational attainment is impacted by parental wealth in the presence of age groups. Based on the literature that explored age groups (Ku and Plotnick (2003) and Duncan et al. (1998)), this study utilizes age groups of 0-5, 6-10, 11-14, 15-18, and 19-25. For informational purposes, Table 2.3 *Age groups and Corresponding Grade Level* lists the age groups and, on average, the corresponding grade level of the individual/child during each cycle. This table conveys the educational journey of the individual during each age group analyzed in this study —Table 2.3 assists in providing context and implications to the results. The hypothesis is that parental wealth positively affects educational attainment, and age groups are an essential driver of educational attainment differences.

Table 2.3: Age Groups and Corresponding Grade Level

Age Group	US Grade Level	Stage
0-5	Pre-Kindergarten through Kindergarten	Early Childhood
6-10	First Grade through Fifth Grade	Elementary School
11-14	Sixth Grade through Eighth Grade	Middle School
15-18	Ninth Grade through Twelfth Grade	High School
19-25	College	Early Adulthood

* Grade levels and Stages are on average

The dependent variable is educational attainment. The measure of educational attainment is the number of years of schooling the individual/student has obtained. Zhan and Sherraden (2003) estimate the relationship of age on educational attainment and find a negative relationship between age and educational attainment. This study will further explore this relationship by controlling for the parent's age. Zhan and Sherraden (2003) also analyzed assets from female heads of households on their children's educational attainment and found a significant positive

impact. I further current literature by also controlling for the gender of the parent. Parental education is controlled for because of its ability to impact both the parent's wealth and the individual's educational attainment. Research indicates that parental education positively correlates to educational attainment (Conley 2001). Parental education is the number of college years, ranging from 0 years to 5 years. The model controls for the parent's race to analyze the persistent gaps in the race among parental wealth and educational attainment. (Chiteji 2010; Leigh 2006). The model also controls for the individual's gender and age.

2.5.1. Models

The first model is a linear regression analyzing parental wealth's correlates to educational attainment.

$$Y_{ift} = \beta_0 + \beta_1 ParentalWealth_{ft} + \beta_2 ParentalEducation_{1999t} + \beta_3 IndividualAge_{ift} + \beta_4 ParentalAge_{ft} + \beta_5 ParentGender_{ft} + \beta_6 Number\ of\ Siblings_{ft} + \beta_7 Region_{ft} + \beta_8 ParentalRace_{ft} + \beta_9 Z_f + \varepsilon_{ift}, \quad (2.1)$$

where, $i = 1, \ldots, n$ young adults, $t = 1999 - 2017$, $f = 1, \ldots,$ m families

$ParentalWealth$ is the parental wealth during 1984, 1989, 1994, and 1999.

Each variable containing the word 'parent' refers to the head of household as determined during the PSID interview, including information on the head of household. The head of the household can be male or female.

$ParentalEducation$ is the education of the parent during the year 1999,

$IndividualAge$ is the individual's age,

$ParentalAge$ is the parent's age during the year 1999,

$ParentGender$ is the gender of the parent during the year 1999,

$\#\ of\ Siblings$ is the number of children in the household during the year 1999. The sample is restricted to parents and their children. The number of children in the household is the individual's number of siblings.

$Region$ is the locational region where the individual resided during childhood during the year 1999,

$ParentalRace$ is the parent's race during the year 1999. As stated in section 2.4.1 (Sample), the parent's race is a proxy for the individual's race.

Z_f are unobserved time-invariant heterogeneities of *i = 1, ..., n* young adults in family *f.*

This model will be estimated twice, once with the un-adjusted wealth variables and then again with the wealth variables adjusted for age groups. The un-adjusted wealth variable is the raw wealth data observations of the parent, not measured across age groups. The adjusted wealth variables are the parent's wealth adjusted across the age groups of 0-5, 6-10, 11-14, 15-18, and 19-25. The dependent variable is the educational attainment of the *ith* child in family *f* during time *t*, where educational attainment is the number of years of schooling. The unobservable characteristic of the individual is ε_{ift}, the random error term.

The second model uses a Box-Cox transformation of the left-hand side to test the functional form of the data,

$$Y_{ift}{}^{\theta} = \beta_0 + \beta_1 ParentalWealth_{ft} + \beta_2 ParentalEducation_{ft} + \beta_3 IndividualAge_{ift} + \beta_4 ParentalAge_{ft} + \beta_5 ParentGender_{ft} + \beta_6 Number\ of\ Siblings_{ft} + \beta_7 Region_{ft} + \beta_8 ParentalRace_{ft} + \varepsilon_{ift}, \quad (2.2)$$

Where,

$$Y_{ift}{}^{\theta} = \begin{cases} Y - 1, & \text{if } \theta = 1 \\ \ln(Y), & \text{if } \theta = 0 \\ 1 - \frac{1}{Y}, & \text{if } \theta = -1 \end{cases} \quad (2.3)$$

Equation (2.2) denotes the transformation on the left-hand side, θ. Equation (2.3) denotes the corresponding value of Y, depending on the value of θ. For example, if $\theta = 0$, the transformation of Y would be ln (Y).

The third model is an ordered logistic regression. Ordered logistic models are regression models normally applied to ordinal and dichotomous dependent variables. This regression analysis is best suited when analyzing ordinal variables structured by intervals, when differences between intervals may be inconsistent. Here the dependent variable of educational attainment will be deconstructed into an ordinal variable where,

$$Y_{ift}^{*} = \beta_0 + \beta_1 ParentalWealth_{ft} + \beta_2 ParentalEducation_{ft} + \beta_3 IndividualAge_{ift} + \beta_4 ParentalAge_{ft} + \beta_5 ParentGender_{ft} + \beta_6 Number\ of\ Siblings_{ft} + \beta_7 Region_{ft} + \beta_8 ParentalRace_{ft} + \varepsilon_{ift}, \quad (2.4)$$

and,

Y_{ift}^{*} is a continuous latent variable with four thresholds: (2.5)

Education = 0, when Y_{ift}^{*} is 1-11 years of schooling

Education = 1, when Y_{ift}^{*} is 12, graduated from high school

Education = 2, when Y_{ift}^{*} 13-16, some college, graduated from college

Education = 3, when $Y_{ift}^{*} > 16$, some graduate school, graduated from graduate school

These four thresholds create the continuous latent variable.

The fourth model is a probit regression,

$$\text{Prob}(Y = 1)_{ift} = \varphi\ (\beta_0 + \beta_1 ParentalWealth_{ft} + \beta_2 ParentalEducation_{ft} + \beta_3 IndividualAge_{ift} + \beta_4 ParentalAge_{ft} + \beta_5 ParentGender_{ft} + \beta_6 Number\ of\ Siblings_{ft} + \beta_7 Region_{ft} + \beta_8 ParentalRace_{ft}) \quad (2.6)$$

Where φ denotes the standard normal cumulative distribution function, and Y is educational attainment.

The fourth model will estimate the probability of three educational attainment outcome measures: high school graduation, college attendance, and college graduation by 2017. Here, the dependent variable is binary for each educational attainment measure: 1 for Yes and 0, otherwise. The model will estimate the probability the individual will arrive at each educational outcome, contingent upon whether they arrived at the previous outcome measure. For example, the probability of earning a college degree is contingent upon college attendance. Likewise, the probability of college attendance is contingent upon high school graduation.

2.6 Results

The results for the ordinary least squares estimation of years of education are presented in Table 2.4: *Wealth without Age Groups*. The regression includes parental wealth without age groups during 1984, 1989, 1994, and 1999. In Table 2.4, parental wealth during childhood is a positive and statistically significant predictor of young adult education across all regressions. Column (1) is parental wealth in 1984, column (2) is parental wealth in 1989, column (3) is parental wealth in 1994, and finally, column (4) is parental wealth in 1999. The most significant is in 1984, where an additional $100,000 of parental wealth increases educational attainment by 0.0043 years of education, that is, over 2-3 weeks.

Table 2.5: *Wealth Age Groups* compile the results for the age-adjusted wealth variables on educational attainment. The model utilizes age groups of 0-5, 6-10, 11-14, 15-18, and 19-25. The number of observations will change as the individuals are captured within each age group. Column (1) is the wealth age group of 0-5, column (2) is the wealth age group of 6-10, column

(3) is the wealth age group of 11-14, column (4) is the wealth age group of 15-18, and finally, column (5) is the wealth age group of 19-25. Parental wealth's correlation to educational attainment is positive and significant across all age groups. The results are similar to Duncan et al., where the most significant, positive impact is during the early childhood years of ages 0-5. In Duncan et al., an additional $10,000 in family income increased educational attainment by three months for ages 0-5 and increased educational attainment by 2-3 weeks for ages 6-10. Here, the relationship is most prominent and most significant for ages 0-5, where an additional $100,000 of parental wealth increases educational attainment by a little over a month, at about 5-6 weeks. For ages 6-10, an additional $100,000 of parental wealth increases educational attainment by about half a month or 2-3 weeks. Overall, the association of parental wealth to educational attainment decreases with age.

Tables 2.6 *Wealth Age Groups Among Men* and Table 2.7 *Wealth Age groups Among Women* analyze the wealth age groups separately for men and women – whether the individual/child is male or female. The column titles are the same as denoted in Table 2.5. In Table 2.6*,* parental wealth has a positive and significant correlation to years of education across all age groups. For men, parental wealth matters less after middle school, and there is no significant difference between high school and college. According to Table 2.6, parental wealth's most significant correlation to educational attainment for men is during the early childhood years of 0-5, where parental wealth increases the individual's educational attainment by about a month and a half. The next most significant relationship is between 19-25, where educational attainment increases by about five weeks. The results for women are in Table 2.7 *Wealth Age Groups Among Women.* Here, parental wealth significantly correlates to women's educational attainment across all years. For women, the most significant correlation for ages 0-5, followed by ages 6-10.

Table 2.4 Wealth without Age Groups

Control Variable	(1) Education	(2) Education	(3) Education	(4) Education
Wealth1984	.0043***			
	(.0006)			
Wealth1989		.0012***		
		(.0002)		
Wealth1994			.0035***	
			(.0003)	
Wealth1999				.0011***
				(.0001)
Observations	32,147	30,292	34,924	38,755
Prob > F	.0000	.0000	.0000	.0000
R^2	.2938	.2957	.2897	.2725

* significant at the 10% level, ** significant at the 5 % level, *** significant at the 1% level. All results include controls for the individual's age, parental education, along with age, race, and gender of the parent, geographical region during childhood, and the number of siblings in the household. Clustered Standard Errors in parentheses.

Table 2.5 Wealth across Age Groups

Control Variable	(1) Education	(2) Education	(3) Education	(4) Education	(5) Education
Wealth 0-5	.0112***				
	(.0011)				
Wealth 6-10		.0049***			
		(.0005)			
Wealth 11-14			.0024***		
			(.0003)		
Wealth 15-18				.0016***	
				(.0002)	
Wealth 19-25					.0012***
					(.0002)
Observations	16,934	24,741	23,996	21,964	21,580
Prob > F	.0000	.0000	.0000	.0000	.0000
R^2	.2270	.2520	.2671	.2917	.3687

* significant at the 10% level, ** significant at the 5 % level, *** significant at the 1% level. All results include controls for the individual's age, parental education, along with age, race, and gender of the parent, geographical region during childhood, and the number of siblings in the household. Clustered Standard Errors in parentheses.

An additional $100,000 of parental wealth during ages 0-5 increases education attainment years by about five weeks. For ages 6-10, parental wealth increases educational attainment for women by about two weeks. Table 2.6 and Table 2.7's regressions follow the same pattern as Table 2.5,

Table 2.6 Wealth Age Groups Among Men

Control Variable	(1) Education	(2) Education	(3) Education	(4) Education	(5) Education
Wealth 0-5	.0140*** (.0016)				
Wealth 6-10		.0053*** (.0006)			
Wealth 11-14			.0019*** (.0004)		
Wealth 15-18				.0013*** (.0002)	
Wealth 19-25					.0013*** (.0003)
Observations	7,893	11,567	11,202	10,381	10,207
Prob > F	.0000	.0000	.0000	.0000	.0000
R^2	2414	.2672	.2883	.3220	.4271

* significant at the 10% level, ** significant at the 5 % level, *** significant at the 1% level. All results include controls for the individual's age, parental education, along with age and gender of the parent, geographical region during childhood, and the number of siblings in the household—standard Errors in parentheses.

Table 2.7 Wealth Age Groups Among Women

Control Variable	(1) Education	(2) Education	(3) Education	(4) Education	(5) Education
Wealth 0-5	.0096*** (.0016)				
Wealth 6-10		.0048*** (.0008)			
Wealth 11-14			.0037*** (.0006)		
Wealth 15-18				.0022*** (.0003)	
Wealth 19-25					.0014*** (.0003)
Observations	9,041	13,174	12,794	11,583	11,353
Prob > F	.0000	.0000	.0000	.0000	.0000
R^2	.2069	.2405	.2548	.2731	.3374

* significant at the 10% level, ** significant at the 5 % level, *** significant at the 1% level. All results include controls for the individual's age, parental education, along with age and race of the parent, geographical region during childhood, and the number of siblings in the household—standard Errors in parentheses.

the significance of parental wealth decreases with age. Table 2.8: *Box-Cox: Education Transformation* denotes the Box-Cox regression results. These regressions are a left-hand side

Box-Cox transformation of the education dependent variable and tests the data's functional form. Thus, recall that the dependent variable is $Y_{ift}{}^{\theta}$. The Box-Cox regression results are robust and uphold the linear regressions. Most of the coefficients carry the same sign and significance across all regressions as the linear regressions. The most significant effect is parental wealth during ages 0-5. The left-hand side transformation of the dependent variable (individual's educational attainment) produces a result of θ closest to 1 and significant at the 1% level. Based on equation 2.3 and that θ =1, no transformation is required on the dependent variable, and the functional form of the data can be estimated using the original ordinary least squared regression.[3]

Table 2.9 *Ordered Logistic* denotes the results for the ordered logistic regressions. The ordered logistic regressions are robust and uphold the linear regressions' signs and significance

Table 2.8: Box-Cox: Education Transformation

	(1) $Y_{ift}{}^{\theta}$	(2) $Y_{ift}{}^{\theta}$	(3) $Y_{ift}{}^{\theta}$	(4) $Y_{ift}{}^{\theta}$	(5) $Y_{ift}{}^{\theta}$
Log Likelihood	-34512.23	-49832.86	-48008.26	-43581.71	-41479.46
Wealth 0-5	.0343***				
	(101.61)				
Wealth 6-10		.0095***			
		(92.24)			
Wealth 11-14			.0061***		
			(46.52)		
Wealth 15-18				.0037***	
				(60.21)	
Wealth 19-25					.0041***
					(25.76)
Observations	16,934	24,741	23,996	21,964	21,560
Theta	1.40***	1.23***	1.32***	1.30***	1.47***
	(.0432)	(.0346)	(.0342)	(.0327)	(.0299)

* (probability > chi-square)<0.10, **(probability > chi-square)<0.05, *** (probability > chi-square)<0.01
All results include controls for the age of the individual, parental education, along with age, race, and gender of the parent, geographical region during childhood, and the number of siblings in the household— Standard Errors in parentheses.

[3] For the Box Cox regression, marginal effects were computed post computed after each regression and explain how a dependent variable (outcome) changes when a specific independent variable (explanatory variable) changes.

Table: 2.9 Ordered Logistic

	(1) Y_{ift}^*	(2) Y_{ift}^*	(3) Y_{ift}^*	(4) Y_{ift}^*	(5) Y_{ift}^*
Log likelihood	-19120.53	-28389.92	-27514.88	-25710.79	-25157.72
Wealth 0-5	.0082***				
	(.0012)				
Wealth 6-10		.0024***			
		(.0009)			
Wealth 11-14			.0015***		
			(.0004)		
Wealth 15-18				.0002	
				(.0002)	
Wealth 19-25					.0007***
					(.0002)
Observations	17,338	25,762	25,165	23,346	23,269
Pseudo R2	.0722	.0830	.0906	.0952	.1235

* (probability > chi-square)<0.10, **(probability > chi-square)<0.05, *** (probability > chi-square)<0.01
All results include controls for the individual's age, parental education, age, race, gender of the parent, geographical region during childhood, and the number of siblings in the household— Standard Errors in parentheses.

in Table 2.5. Recall from equation 2.5. The dependent variable is the individual's educational attainment transformed into a continuous latent variable with four thresholds. In Table 2.9, Parental wealth correlates to educational attainment positively across all age group regressions and significantly for age groups of 0-5, 6-10, 11-14, and 19-25. The results uphold similar significance areas and the same signs shown in similar age groups (Table 2.5). The most significant correlation persists for ages 0-5, and we continue to see the association between parental wealth and educational attainment decrease with age.

2.7 Results: Replicated Methodology

This section replicates the Duncan 1998 model. Table 2.11: *Replicated Duncan et al. (1998) Model* compiles a model's results very similar to the age group model estimated in Duncan et al. (1998). The model used three groups of age groups and restricted the sample to demographic information only on maternal parents. I replicate this model, and my results are in

Table 2.11. I use three similar age groups of 0-5, 6-10, and 11-14. Like Duncan et al. (1998), I restricted the sample to only include maternal parents' demographic data. The estimation controls for location and the number of children in the household. Here, siblings are the number of children in the household, consistent with Duncan's model, this regression controls for the mother's education. The mother's education is the completed college years (no college, one year of college, two college years, three college years, four college years, five college years.) With no college as the reference group, the mother's education is significant for all age groups for two, three, and five college years.

Recall, Duncan et al. (1998) found a significant positive correlation between family income on years of education for early childhood years (ages 0 -5) across all age groups. The replicated I find a similar result. The association of parental wealth to educational attainment is positive and significant at the 1% level across all age groups. Column (1) is the wealth-age group of 0-5, column (2) is the wealth age group of 6-10, column (3) is the wealth-age group of 11-14. Duncan finds a positive and significant correlation between the mother's education on schooling years 0-5 and 6-10, but the result is not significant for years 11-14. In my results, the mother's education is significantly correlated with years of schooling across all years (ages 0-15). There is a persistent, significantly negative relationship between siblings and educational attainment across all regressions.

2.8 Probit Regressions

This section estimates probit regressions across the age groups based on Nam & Huang (2011). The dependent variable is deconstructed into three binary thresholds of high school, college attendance, and college education. College graduation is contingent upon college attendance which is contingent upon high school graduation. Table 2.11 *Probit: Age Groups on*

High School Graduation details the probit regressions when the individual has an educational attainment level of high school graduation. Parental wealth has a positive relationship with high school graduation. However, the most significant parental wealth is during ages 6-10 at 0.0150. Thus, parental wealth during ages 6-10 is the strongest driver of high school graduation. Table 2.12 *Probit: Age Groups on College Attendance* details the probit regressions when the individual has an educational attainment level of college attendance. The individuals included in this regression have only attended some duration of college. They have not graduated. Parental wealth has a positive and significant impact across all age groups, and the most significant effect

Table 2.10: Replicated Duncan et al. (1998) Model

Control Variable	(1) Education	(2) Education	(3) Education
Wealth 0-5	.0247***		
	(.0011)		
Wealth 6-10		.0137***	
		(.0005)	
Wealth 11-14			.0088***
			(.0004)
Age	.0524***	.0504***	.0364***
	(.0048)	(.0038)	(.0039)
Mother's Age	-.0282***	-.0275***	-.0279***
	(.0009)	(.0008)	(.0008)
Mother's	.4403***	.6071***	.6010***
Education One Yr	(.0972)	(.0842)	(.0851)
Mother's	.8100***	1.06***	1.07***
Education 2 Yrs	(.0957)	(.0753)	(.0798)
Mother's	.9845***	1.30***	1.24***
Education 3 Yrs	(.1722)	(.1295)	(.1343)
Mother's	1.59***	1.97***	2.02***
Education 4 Yrs	(.1180)	(.0898)	(.0859)
Mother's	1.92***	2.06***	2.47***
Education 5 Yrs	(.1716)	(.1254)	(.1284)
Observations	16,934	24,741	23,996
R^2	.1037	.1025	.1008

* significant at the 10% level, ** significant at the 5 % level, *** significant at the 1% level. All regressions account for living in the South and the number of children in the household (the individual's siblings). Standard Errors in parentheses.

Table 2.11 Probit: Age Groups on High School Graduation

	(1) High School	(2) High School	(3) High School	(4) High School	(5) High School
Log likelihood	-3564.96	-4872.49	-4385.41	-3674.82	-3298.40
Wealth 0-5	.0136***				
	(.0027)				
Wealth 6-10		.0150***			
		(.0022)			
Wealth 11-14			.0112***		
			(.0019)		
Wealth 15-18				.0060***	
				(.0014)	
Wealth 19-25					.0102***
					(.0023)
Observations	14,776	20,890	19,561	17,341	14,764
Marginal Effect	.0014***	.0014***	.0010***	.0005***	.0009***
Pseudo R2	.0872	.1050	.1019	.1062	.1096

* (probability > chi-square) <0.10, **(probability > chi-square) <0.05, *** (probability > chi-square) <0.01
All results include controls for the individual's age, parental education, along with race, age, and gender of the parent—standard Errors in parentheses.

Table 2.12 Probit: Age Groups on College Attendance

	(1) College Attendance	(2) College Attendance	(3) College Attendance	(4) College Attendance	(5) College Attendance
Log likelihood	-7680.15	-10650.75	-9842.51	-8897.08	-7838.74
Wealth 0-5	.0084***				
	(.0014)				
Wealth 6-10		.0070***			
		(.0009)			
Wealth 11-14			.0054***		
			(.0007)		
Wealth 15-18				.0021***	
				(.0005)	
Wealth 19-25					.0053***
					(.0009)
Observations	14,397	20,427	19,197	17,108	15,784
Marginal Effect	.0026***	.0021***	.0016***	.0006***	.0016***
Pseudo R2	.0976	.1157	.1209	.1237	.1689

* (probability > chi-square) <0.10, **(probability > chi-square) <0.05, *** (probability > chi-square) <0.01
All results include controls for the individual's age, parental education, along with race, age, and gender of the parent—standard Errors in parentheses.

Table 2.13 Probit: Age Groups on College Graduation

	(1) College Graduation	(2) College Graduation	(3) College Graduation	(4) College Graduation	(5) College Graduation
Log likelihood	-5860.43	-8317.01	-7898.35	-6786.97	-6167.46
Wealth 0-5	.0084***				
	(.0013)				
Wealth 6-10		.0062***			
		(.0008)			
Wealth 11-14			.0023***		
			(.0004)		
Wealth 15-18				.0062***	
				(.0007)	
Wealth 19-25					-.0001
					(.0002)
Observations	9,584	13,674	13,124	11,542	10,611
Marginal Effect	.0031***	.0023***	.0008***	.0022***	-.00004
Pseudo R2	.0777	.0777	.0804	.0884	.0970

* (probability > chi-square) <0.10, **(probability > chi-square) <0.05, *** (probability > chi-square) <0.01
All results include controls for the individual's age, parental education, along with race, age, and gender of the parent. Standard Errors in parentheses.

is for age group 0-5 at 0.0084, following a similar pattern as previous regressions. The marginal effect of parental wealth on educational attainment is significant across all age groups, and the marginal effect of parental wealth on educational attainment ranges from 0.0006 to 0.0026.

Table 2.13 *Probit: Age Groups on College Graduation* detailed the probit regressions when the individual graduated college. The level of degree received is unknown, as the PSID interviewer simply asks if the individual has received a degree. Parental wealth is a positive and significant driver of college graduation across all age groups except 19-25, and the most significant effect is for ages 0-5. Thus, parental wealth during ages 0-5 is the most predictive of college graduation. The marginal effect of parental wealth on educational attainment is significant across all age groups, and the marginal effect of parental wealth on educational attainment ranges from -.00004 to 0.0031.

2.9. Robustness Checks: Interactions between Race & Wealth with Time Fixed Effects

By using parental wealth during age groups (0-5, 6-10, 11-14, 15-18, and 19-25) to explain variations in educational outcomes during ages 25-36, I eliminate the simultaneous causality for wealth and education. However, other factors may contribute to the endogeneity of parental wealth. Suppose, for example, that values and behavior differ across families, and some values and behaviors are correlated with parental wealth (Mason, 2007). If so, the coefficient on wealth is capturing only spurious correlation. Additionally, there may be an intertemporal trend during 1999-2017 that has differential effects on young adults according to parental wealth during earlier ages.

I control for these effects by adding racial and ethnic interaction terms to the extent that Black and Hispanic families have different values and behaviors than White families and different mean levels of wealth. These interaction terms will help reduce the spurious correlation between parental wealth and educational attainment. Second, I include fixed effects for the survey year to control for any correlation between intertemporal trends and parental wealth. These results are denoted within Table 2.14 *Race & Wealth with Time Fixed Effects.* For the racial classifications (without interacting with wealth), there is an overall persistent, significant relationship between having a Black or Hispanic head of household. Recall, all other racial classes (except Whites as a reference group) are dropped. It is important to note that the 19-25 age group observations are low for this regression, at 4,543, compared to the other age groups. The coefficients of the age groups follow the same pattern of 11-14 and 15-18. During the 19-25 age group, the significance is low, and the correlation coefficient is negative, which may be due to the low number of observations previously mentioned. Hispanic wealth matters most during ages 6-10 and is significant for all age groups except age 0-5.

Table 2.14 Race & Wealth with Time Fixed Effects

Control Variable	(1) Education	(2) Education	(3) Education	(4) Education	(5) Education
Wealth 0-5	.0098***				
	(.0011)				
Wealth 6-10		.0040***			
		(.0005)			
Wealth 11-14			.0018***		
			(.0004)		
Wealth 15-18				.0013***	
				(.0002)	
Wealth 15-18					.0012*
					(.0005)
Black * Wealth 0-5	.0161***				
	(.0054)				
Black * Wealth 6-10		0040**			
		(.0019)			
Black * Wealth 11-14			-9.68e-06		
			(.0012)		
Black * Wealth 15-18				.0013	
				(.0009)	
Black * Wealth 19-25					-.0096*
					(.0051)
Hispanic * Wealth 0-5	.0011				
	(.0171)				
Hispanic * Wealth 6-10		.0250**			
		(.0097)			
Hispanic * Wealth 11-14			.0282**		
			(.0127)		
Hispanic * Wealth 15-18				.0873***	
				(.0157)	
Hispanic * Wealth 19-25					.0683***
					(.0224)
Black	-.3405***	-.3624***	-.4010***	-.4116***	-.0936
	(.0386)	(.0373)	(.0421)	(.0502)	(.0770)
Hispanic	-.077	-.5149***	-.6659***	-1.22***	-.8569***
	(.1640)	(.1262)	(.1126)	(.1232)	(.1656)
Observations	16,934	17,378	13,969	10,198	4,543
Prob > F	.0000	.0000	.0000	.0000	.0000
R^2	.2292	.2253	.2039	.2058	.2676

*significant at the 10% level, ** significant at the 5 % level, *** significant at the 1% level. All results include controls for the individual's age, parental education, along with age and gender of the parent, geographical region during childhood, and the number of siblings in the household—standard Errors in parentheses.

Table 2.15 Wealth Age Groups Among Men, Robustness Check

Control Variable	(1) Education	(2) Education	(3) Education	(4) Education	(5) Education
Wealth 0-5	.0082***				
	(.0016)				
Wealth 6-10		.0033***			
		(.0008)			
Wealth 11-14			.0027***		
			(.0006)		
Wealth 15-18				.0018***	
				(.0003)	
Wealth 19-25					.0012***
					(.0003)
Observations	9,041	13,174	12,794	11,583	11,353
Prob > F	.0000	.0000	.0000	.0000	.0000
R^2	.2113	.2550	.2709	.2953	.3492

* significant at the 10% level, ** significant at the 5 % level, *** significant at the 1% level. All results include controls for the individual's age, parental education, along with age and gender of the parent, geographical region during childhood, and the number of siblings in the household—standard Errors in parentheses.

Table 2.16 Wealth Age Groups Among Women, Robustness Check

Control Variable	(1) Education	(2) Education	(3) Education	(4) Education	(5) Education
Wealth 0-5	.0117***				
	(.0017)				
Wealth 6-10		.0044***			
		(.0007)			
Wealth 11-14			.0017***		
			(.0005)		
Wealth 15-18				.0010***	
				(.0002)	
Wealth 19-25					.0014***
					(.0003)
Observations	7,893	11,567	11,202	10,381	10,207
Prob > F	.0000	.0000	.0000	.0000	.0000
R^2	.2458	.2723	.2909	.3265	.4372

* significant at the 10% level, ** significant at the 5 % level, *** significant at the 1% level. All results include controls for the individual's age, parental education, along with age and race of the parent, geographical region during childhood, and the number of siblings in the household—standard Errors in parentheses.

Table 2.17 Probit: Age Groups on High School Graduation, Robustness Check

	(1) High School	(2) High School	(3) High School	(4) High School	(5) High School
Log likelihood	-3551.65	-4870.61	-4377.75	-3637.79	-3292.04
Wealth 0-5	.0107***				
	(.0028)				
Wealth 6-10		.0145***			
		(.0025)			
Wealth 11-14			.0108***		
			(.0021)		
Wealth 15-18				.0039***	
				(.0013)	
Wealth 19-25					.0097***
					(.0024)
Observations	14,776	20,890	19,561	17,341	14,764
Marginal Effect	.0011***	.0014***	.0009***	.0003***	.0008***
Pseudo R2	.0906	.1053	.1034	.1152	.1114

* (probability > chi-square) <0.10, **(probability > chi-square) <0.05, *** (probability > chi-square) <0.01
All results include controls for the individual's age, parental education, along with race, age, and gender of the parent—standard Errors in parentheses.

Table 2.18 Probit: Age Groups on College Attendance, Robustness Check

	(1) College Attendance	(2) College Attendance	(3) College Attendance	(4) College Attendance	(5) College Attendance
Log likelihood	-7673.540	-10629.37	-9839.29	-8878.24	-7793.84
Wealth 0-5	.0079***				
	(.0015)				
Wealth 6-10		.0056***			
		(.0009)			
Wealth 11-14			.0050***		
			(.0008)		
Wealth 15-18				.0021***	
				(.0005)	
Wealth 19-25					.0045***
					(.0009)
Observations	14,397	20,427	19,197	17,108	15,784
Marginal Effect	.0025***	.0017***	.0015***	.0006***	.0013***
Pseudo R2	.0984	.1175	.1212	.1255	.1736

* (probability > chi-square) <0.10, **(probability > chi-square) <0.05, *** (probability > chi-square) <0.01
All results include controls for the individual's age, parental education, along with race, age, and gender of the parent—standard Errors in parentheses.

Table 2.19 Probit: Age Groups on College Graduation, Robustness Check

	(1) College Graduation	(2) College Graduation	(3) College Graduation	(4) College Graduation	(5) College Graduation
Log likelihood	-5843.67	-8300.90	-7859.70	-6772.93	-6150.74
Wealth 0-5	.0097*** (.0014)				
Wealth 6-10		.0068*** (.0008)			
Wealth 11-14			.0051*** (.0006)		
Wealth 15-18				.0070*** (.0007)	
Wealth 19-25					-.00001*** (.0002)
Observations	9,584	13,674	13,124	11,542	10,611
Marginal Effect	.0036***	.0025***	.0018***	.0025***	-6.84e-06 ***
Pseudo R2	.0803	.0795	.0849	.0903	.0995

* (probability > chi-square) <0.10, **(probability > chi-square) <0.05, *** (probability > chi-square) <0.01
All results include controls for the individual's age, parental education, along with race, age, and gender of the parent. Standard Errors in parentheses.

My conclusion here is that Immigration issues may impact Hispanic wealth during ages 0-5; otherwise, this coefficient is not intuitive. For robustness, I estimate Tables 2.6 & 2.7 and Tables 2.11-2.13 using racial and ethnic interactions and time fixed effects. The results of these tables are within Tables 2.14 to 2.19. The results mostly follow the same significance, sign, and pattern of the original regressions.

2.10 Discussions & Conclusions

Parental Wealth is most correlated with ages 0-5, the early childhood years. "Early childhood is a period of enormous growth and development. Children are developing more rapidly during the period from birth to age five than at any other time in their lives, shaped in large part by their experiences in the world. These early years of development are critical for

providing a firm foundation in cognitive, language, and motor development, as well as social, emotional, regulatory, and moral development." (NRC and IOM, 2000) Parental wealth during ages 0-5 may impact the child's foundation and resources during these years. This estimation finds parental wealth during ages 0-5 to be a primary driver of educational attainment. The results are similar to Duncan et al., where the most significant, positive impact is also during the early childhood years of ages 0-5. I estimated the regressions separately for when the individual is male versus female. For men and women, parental wealth is the most significant driver of educational attainment during ages 0-5. Age groups are essential when exploring educational attainment. Longer, more comprehensive analyses are helpful. Though the correlations were most robust for early years, there were variations in the age group correlations.

For robustness, the regression analysis is estimated using a Box-Cox regression. The results of the Box-Cox regressions are robust and uphold the linear regressions. The majority of the coefficients carry the same sign and significance as the linear regressions across all regressions. For robustness, the regression is also estimated as an ordered logistic regression. The ordered logistic regression finds a positive relationship between educational attainment and parental wealth. I replicate Duncan et al.'s (1998) 's model for age groups and find similar results for correlations on years of schooling. All of the regressional estimations control for the race of the head of household. Probit regressions are estimated for the relationship of parental wealth on high school graduation, college attendance, and college graduation in the presence of age groups. Finally, for robustness, I estimate the analysis with the inclusion of racial interactions and time-fixed effects in section 2.9.

My analysis furthers current literature in several ways. I gather several critical components less explored in the literature. I further current literature by analyzing parental

wealth's correlation to educational attainment. The literature most closely related to the estimation, Duncan et al. (1998) and Ku and Plotnick (2003), do not use parental wealth to measure wealth. Additionally, this estimation extends the age groups by an additional ten years. Both Duncan et al. (1998) and Ku and Plotnick (2003) end their age groups at 15. By extending the years of the age groups, this extension provides a less explored analysis of the early adult years of the individuals. The education attainment outcome measures I utilize a larger, more comprehensive range than all works aforementioned.

CHAPTER 5

CONCLUSION

My dissertation has solidified the importance of education as a primary predictor for future success. Chapter 2's findings are consistent with the hypothesis that there is a positive relationship between parental wealth and educational attainment in the presence of age groups. I concluded that parental wealth matters for educational attainment and that parental wealth during early childhood ages 0-5 is the strongest predictor for educational attainment during ages 25-36. Chapter 3 analyzed spousal education on earnings and concluded that the benefits of marriage are more robust for men than for women. I found strong negative correlations between earnings and race, solidifying the importance of policies against racial discrimination in the labor market. Marriage had an ongoing negative relationship with the log earnings of wives, with non-married women often earning more.

Chapter 4 analyzed the Lake Wales Charter School System's unique environment within Lake Wales, Florida. Lake Wales provides a unique environment for analysis because most of the city comprises charter schools. My difference-in-difference estimation compared the reading test scores of Lake Wales Charter Schools to Polk County Public Schools. I find a positive increase in test results for Lake Wales Charter Schools during year three of post-implementation, but the correlation is lost by year four. The results from this analysis propose the need for longer strategic planning for charter schools.

Within my dissertation, I examined how complexities in the individual's external environment correlate to their educational attainment and, ultimately, their life chances. I concluded that wealth matters. The iterative, generational characteristics of wealth can provide a

long-lasting impact. Socioeconomic advantage leads to more education, that is, higher family wealth (Chapter 2), greater spousal education (Chapter 3), and better academic institutions (Chapter 4) yield significant advantages in educational attainment.

A. CHAPTER 1

Figure A.1

Disparities among Millennials Ages 25-32, By Education Level in Terms of Annual Earnings

B. CHAPTER 2

Table B.1

Table B.1 Algorithm for the Creation of the Wealth Age Group Variables	
group11	if year == 2005 & age >= 25 & age <= 26 | year == 2007 & age >= 25 & age <= 28 | year == 2009 & age >= 25 & age <= 30 | year == 2011 & age >= 27 & age <= 32 | year == 2013 & age >= 29 & age <= 34 | year == 2015 & age >= 31 & age <= 36 | year == 2017 & age >= 33 & age <= 36
group21	if year == 1999 & age== 25 | year == 2001 & age >= 25 & age <= 27 | year == 2003 & age >= 25 & age <= 29 | year == 2005 & age >= 27 & age <= 31 | year == 2007 & age >= 29 & age <= 33 | year == 2009 & age >= 31 & age <= 35 | year == 2011 & age >= 33 & age <= 36 | year == 2013 & age >= 35 & age <= 36
group31	if year == 1999 & age>= 26 & age <= 29 | year == 2001 & age >= 28 & age <= 31 | year == 2003 & age >= 30 & age <= 33 | year == 2005 & age >= 32 & age <= 35 | year == 2007 & age >= 34 & age <= 36 | year == 2009 & age == 36
group41	if year == 1999 & age>= 30 & age <= 33 | year == 2001 & age >= 32 & age <= 35 | year == 2003 & age >= 34 & age <= 36 | year == 2005 & age == 36
group51	if year == 1999 & age>= 34 & age <= 36 | year == 2001 & age == 36

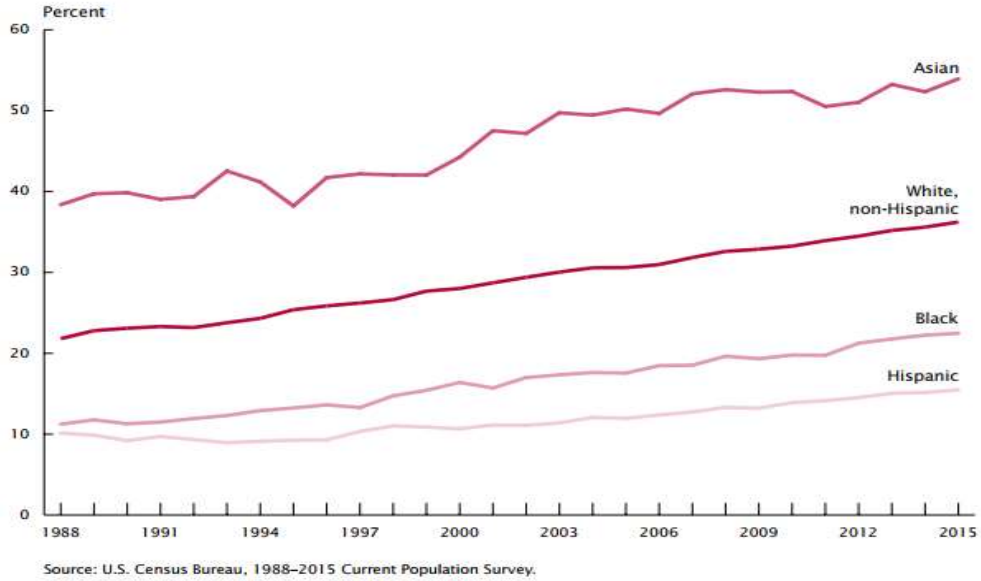
group12	if year == 2011 & age >= 25 & age <= 27 | year == 2013 & age >= 25 & age <= 29 | year == 2015 & age >= 26 & age <= 31 | year == 2017 & age >= 28 & age <= 33
group22	if year == 2005 & age >= 25 & age <= 26 | year == 2007 & age >= 25 & age <= 28 | year == 2009 & age >= 25 & age <= 30 | year == 2011 & age >= 28 & age <= 32 | year == 2013 & age >= 30 & age <= 34 | year == 2015 & age >= 32 & age <= 36 | year == 2017 & age >= 34 & age <= 36
group32	if year == 2001 & age >= 25 & age <= 26 | year == 2003 & age >= 25 & age <= 28 | year == 2005 & age >= 27 & age <= 30 | year == 2007 & age >= 29 & age <= 32 | year == 2009 & age >= 31 & age <= 34 | year == 2011 & age >= 33 & age <= 36 | year == 2013 & age >= 35 & age <= 36
group42	if year == 1999 & age>= 25 & age <= 28 | year == 2001 & age >= 27 & age <= 30 | year == 2003 & age >= 29 & age <= 32 | year == 2005 & age >= 31 & age <= 34 | year == 2007 & age >= 33 & age <= 36 | year == 2009 & age >= 35 & age <= 36
group52	if year == 1999 & age>= 29 & age <= 35 | year == 2001 & age >= 31 & age <= 36 | year == 2003 & age >= 33 & age <= 36 | year == 2005 & age >= 35 & age <= 36

group13	if year == 2015 & age >= 25 & age <= 26 | year == 2017 & age >= 25 & age <= 28
group23	if year == 2009 & age == 25 | year == 2011 & age >= 25 & age <= 27 | year == 2013 & age >= 25 & age <= 29 | year == 2015 & age >= 27 & age <= 31 | year == 2017 & age >= 29 & age <= 33
group33	if year == 2005 & age == 25 | year == 2007 & age >= 25 & age <= 27 | year == 2009 & age >= 25 & age <= 29 | year == 2011 & age >= 28 & age <= 31 | year == 2013 & age >= 30 & age <= 33 | year == 2015 & age >= 32 & age <= 35
group43	if year == 2001 & age == 25 | year == 2003 & age >= 25 & age <= 27 | year == 2005 & age >= 26 & age <= 29 | year == 2007 & age >= 28 & age <= 31 | year == 2009 & age >= 30 & age <= 33 | year == 2011 & age >= 32 & age <= 35 | year == 2013 & age >= 34 & age <= 36 | year == 2015 & age ==

group53	if year == 1999 & age>= 29 & age <= 36 | year == 2001 & age >= 26 & age <= 36 | year == 2003 & age >= 28 & age <= 36 | year == 2005 & age >= 30 & age <= 36 | year == 2007 & age >= 32 & age <= 36 | year == 2009 & age >= 34 & age <= 36 | year == 2011 & age == 36

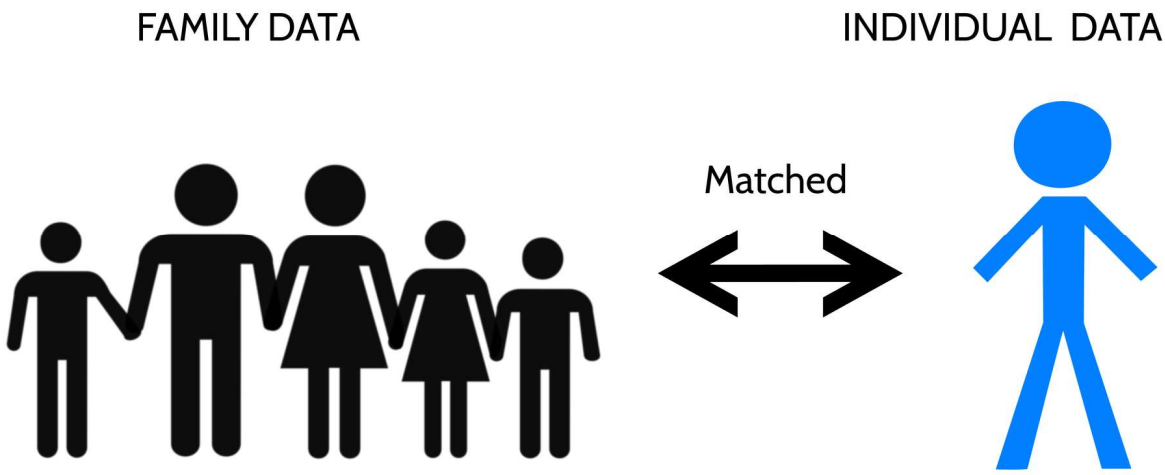
group14	
Group24	if year == 2015 & age >= 25 & age <= 26 | year == 2017 & age >= 25 & age <= 28
Group34	if year == 2011 & age >= 25 & age <= 26 | year == 2013 & age >= 25 & age <= 28 | year == 2015 & age >= 27 & age <= 30 | year == 2017 & age >= 29 & age <= 32
Group44	if year == 2007 & age >= 25 & age <= 26 | year == 2009 & age >= 25 & age <= 28 | year == 2011 & age >= 27 & age <= 30 | year == 2013 & age >= 29 & age <= 32 | year == 2015 & age >= 31 & age <= 34 | year == 2017 & age >= 33 & age <= 36
Group54	if year == 1999 & age>= 29 & age <= 36 | year == 2001 & age >= 25 & age <= 36 | year == 2003 & age >= 25 & age <= 36 | year == 2005 & age >= 25 & age <= 36 | year == 2007 & age >= 27 & age <= 36 | year == 2009 & age >= 29 & age <= 36 | year == 2011 & age >= 31 & age <= 36 | year == 2013 & age >= 33 & age <= 36 | year == 2015 & age >= 35 & age <= 36

Figure B.1



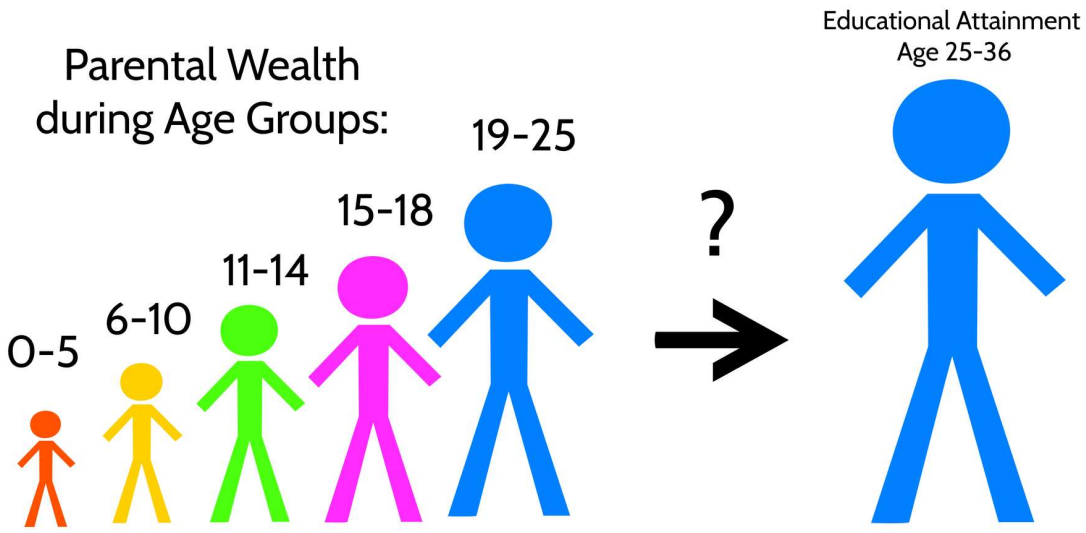
Racial Disparities in Educational Attainment

Figure B.2



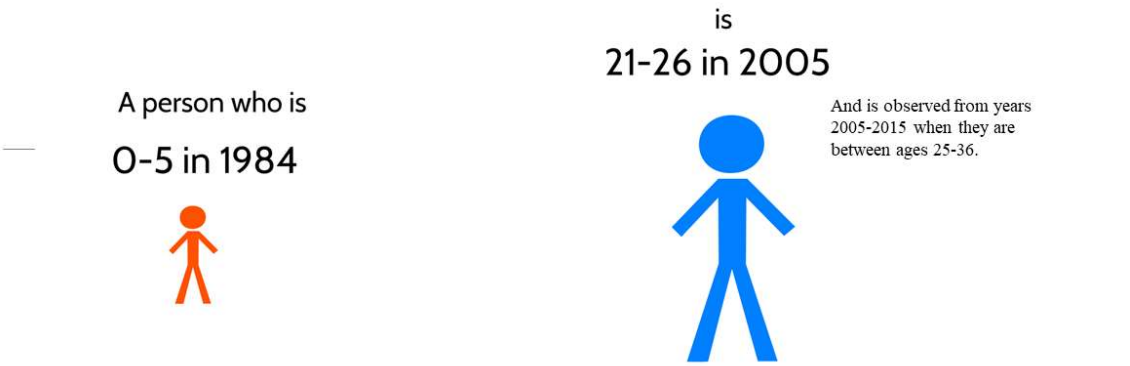
Family Data versus Individual Data

Figure B.3



Age Groups on Educational Attainment

Figure B.4

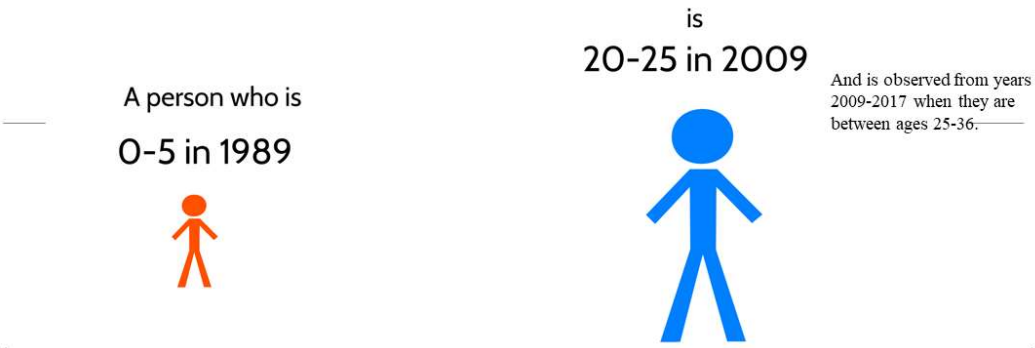


Individual's age in 1984 (Example: a person who is between 0-5 in 1984 will be between 15-20 in 1999)

	1999	2001	2003	2005	2007	2009	2011	2013	2015	2017
0 - 5				21-26	23-28	25-30	27-32	29-34	31-36	
6 - 10	21-25	23-27	25-29	27-31	29-33	31-35	33-37	35-39		
11 - 14	26-29	28-31	30-33	32-35	34-37	36-39				
15 - 18	30-33	32-35	34-37	36-39						

Age Groups on Educational Attainment in 1984

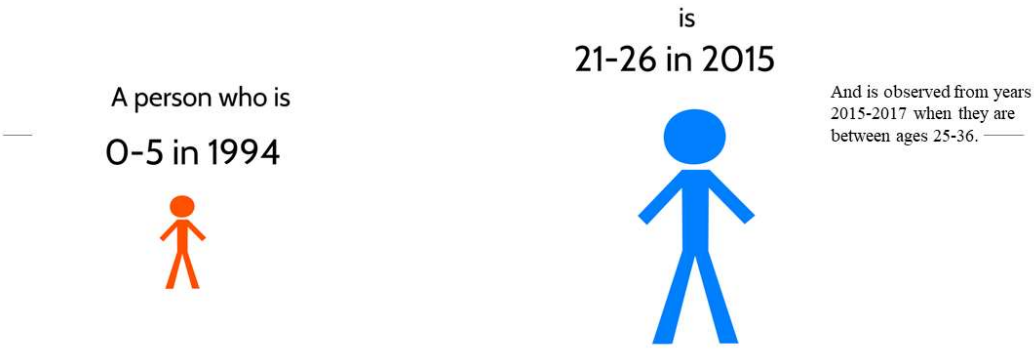
Figure B.5



Individual's age in 1989 (Example: a person who is between 0-5 in 1989 will be between 10-15 in 1999)										
	1999	**2001**	**2003**	**2005**	**2007**	**2009**	**2011**	**2013**	**2015**	**2017**
0 - 5						20-25	22-27	24-29	26-31	28-33
6 - 10				22-26	24-28	29-30	28-32	30-34	32-36	34-38
11 - 14		23-26	25-28	27-30	29-32	31-34	33-36	35-38		
15 - 18	25-28	27-30	29-32	31-34	33-36	35-38				

Age Groups on Educational Attainment in 1989

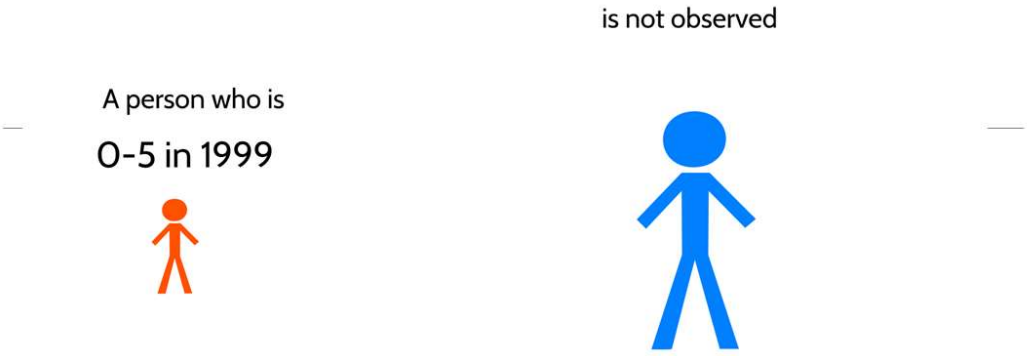
Figure B.6



Individual's age in 1994 (Example: a person who is between 0-5 in 1994 will be between 5-10 in 1999)										
	1999	**2001**	**2003**	**2005**	**2007**	**2009**	**2011**	**2013**	**2015**	**2017**
0 - 5									21-26	23-28
6 - 10						21-25	23-27	25-29	27-31	29-33
11 - 14				22-25	24-27	26-29	28-31	30-33	32-35	34-37
15 - 18		22-25	24-27	26-29	28-31	30-33	32-35	34-37	36-39	

Age Groups on Educational Attainment in 1994

Figure B.7

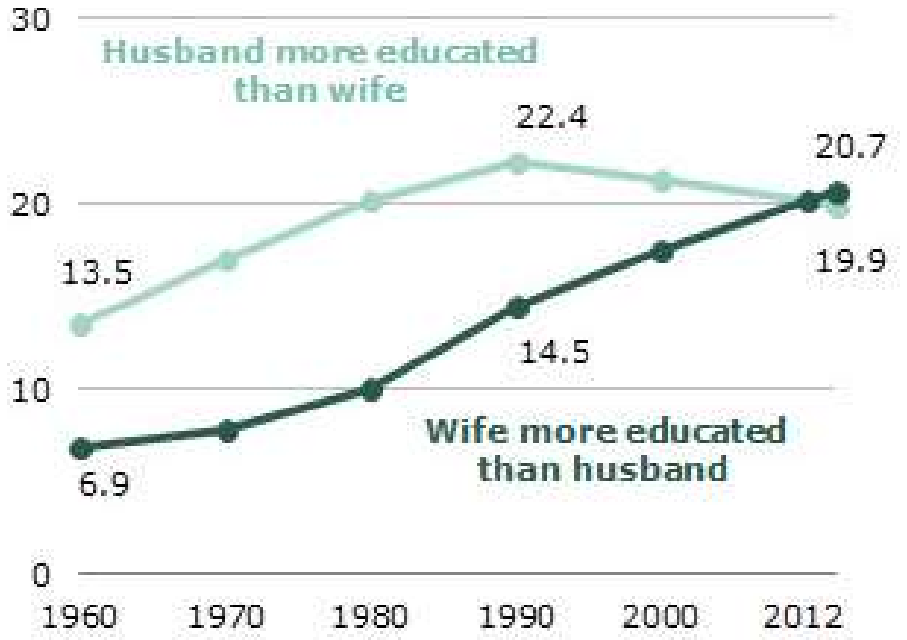


Individual's age in 1999 (Example: a person who is between 0-5 in 1999 will be between 0-5 in 1999)										
	1999	**2001**	**2003**	**2005**	**2007**	**2009**	**2011**	**2013**	**2015**	**2017**
0 - 5										
6 - 10									22-26	24-28
11 - 14							23-26	25-28	27-30	29-32
15 - 18					23-26	25-28	27-30	29-32	31-34	33-36

Age Groups on Educational Attainment in 1999

C. CHAPTER 3

Figure C.1

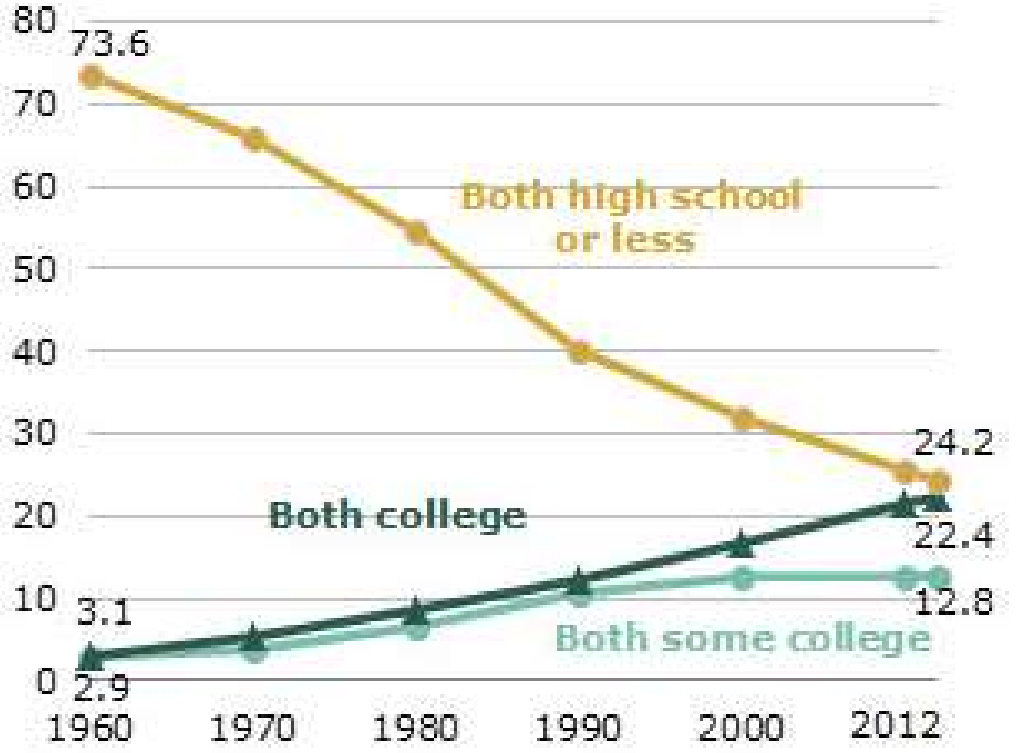


Source: Pew Research Center analysis of the Decennial Census and American Community Survey, IPUMS files.

PEW RESEARCH CENTER

More Women Marrying 'Down"

Figure C.2



Source: Pew Research Center analysis of the Decennial Census and American Community Survey, IPUMS files.

PEW RESEARCH CENTER

Share of Marriages Between Less-Educated declines, % of Married Couples

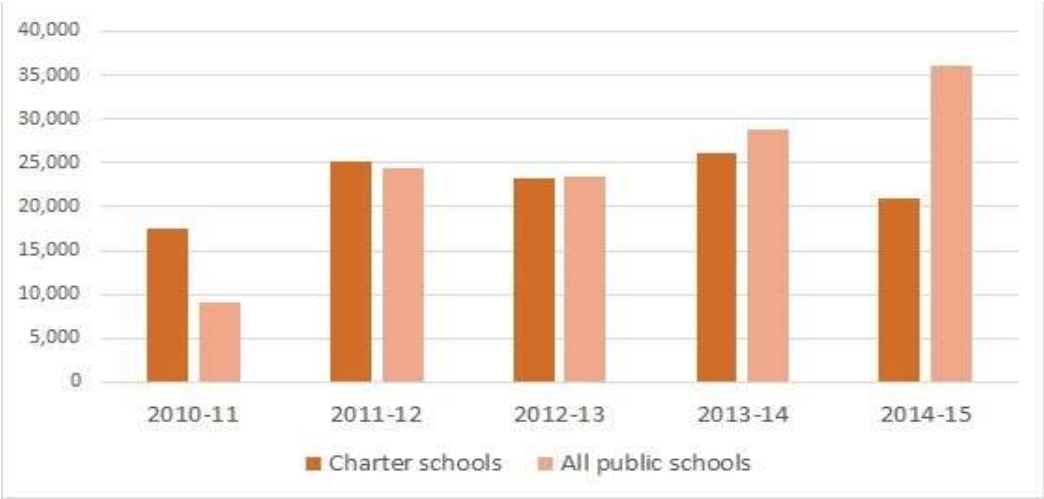
Table C.1

Table C.1: Detailed Data Questions & Coding for Select Coefficients

VARIABLE	Question Asked By Interviewer
SPOUSE'S EDUCATION & GRADE	Spouse: What is the highest grade or year of regular school that you have completed and gotten credit for? HH Member #1 (Defined as a spouse) Grade: What is the highest grade or year of regular school that you have completed and gotten credit for? 9- 17 Highest grade or year of school completed
TOTAL INCOME	During (said year), how much did you receive from wages, salary, commissions, or tips from all (other) jobs before deductions for taxes or anything else? Ranges from 0-9999999
GEOGRAPHICAL REGION	1- Northeast 2- North Central 3- South 4- West
RACE	1- Hispanic 2- Black 3- Non-Black, Non-Hispanic
CHILDREN	What is the number of biological, stepchildren, or adopted Households during the said year? Ranges from 0 to 999
AGE OF FEMALE	0-125
MARITAL STATUS	2328 0: 0 NEVER MARRIED 4916 1: 1 MARRIED

D. CHAPTER 4

Figure D.1



Yearly Growth in Enrollment

E. IRB APPROVAL NOT REQUIRED

FLORIDA STATE UNIVERSITY | OFFICE *of the* VICE PRESIDENT *for* RESEARCH

Date:	February 26, 2020
To:	Audrieanna Burgin College of Social Sciences and Public Policy-Economics
From:	Florida State University Institutional Review Board
Study Title:	Topics in Educational Attainment & Labor Outcomes

The Office for Human Subjects Protection at Florida State University has reviewed your determination form for the above referenced project.

It has been determined that your project does not constitute human subjects research as defined by DHHS and/or FDA regulations, and thus does not require IRB review or approval.

Note that this determination applies only to the activities submitted as part of the current review, and does not apply should any changes be made to your project or if new information is presented. If changes are made or new information is presented, and there are questions about whether these activities are research involving human subjects, please submit a new request to the Office of Human Subjects for a determination.

Please retain a copy of this memo for your records.

Thank you

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BIOGRAPHICAL SKETCH

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