Quantitative Effect of Family Structure on Collegiate Educational Attainment: Millennials, Generation Xers, Baby Boomers

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ABSTRACT

QUANTITATIVE EFFECT OF FAMILY STRUCTURE ON COLLEGIATE EDUCATIONAL ATTAINMENT:

MILLENNIALS, GENERATION XERS, BABY BOOMERS

by

Lindsey Thye Franson

Florida Southern College, 2021

Lakeland, FL

Low educational attainment of four-year college degrees in America is a concern attributed to specific factors such as the ratio of family size to family income, driven by a dilution of resources. Also having a negative effect on educational attainment are nontraditional family structures such as single, divorced, separated, same-sex, cohabiting, or remarried parents, which likewise links to the resource dilution theory. The purpose of this quantitative study was to test if family structure effected educational attainment across generations of students and link results to the resource dilution theory through a cross-sectional anonymous survey. This study focused on the changed definition of family structure over time in America and how this has affected educational attainment by surveying participants from the Millennial, Generation X, and Baby Boomer generations on their educational background and demographic characteristics. Participants (n = 209) were employees at a government agency located in Polk County, Florida, as this county had statistically low educational attainment than the nation and the state of Florida. The overall relationship between family structure and educational attainment was statistically analyzed by comparing results from each generation of

participants through the use of logistic regression, chi-square of independence, and one-way between-groups analysis of variance (ANOVA). The results indicated that family size, family income, and family structure were not predictive of educational attainment, and that the greatest predictor, although not statistically significant, was racial/ethnic group. Additionally, data also did not find statistical significance between educational attainment and family structure on a generational level. Lastly, the results indicated statistical significance between the acceptance rates of family structures for Millennials and Baby Boomers, finding that Millennials were more accepting of nontraditional family structures. These findings suggest that racial/ethnic group is the greatest predictor of educational attainment and that the acceptance of family structures varies by generation. Future research should continue to pursue generational studies on the effect of family structure, in order to inform higher education institutions, high school counselors, and families about predictive barriers to educational attainment.

Keywords: resource dilution theory, family income, educational attainment, family structure, generations

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DEDICATION

To my husband, the love of my life.

~

Your educational journey proves that barriers can be broken, and I hope your journey inspires others through this research. Thank you for leading me through life by encouraging me to enjoy the journey that God has blessed upon us, rather than rush toward life's infinite list of finish lines.

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CHAPTER I: INTRODUCTION

QUANTITATIVE EFFECT OF FAMILY STRUCTURE ON COLLEGIATE EDUCATIONAL ATTAINMENT: MILLENNIALS, GENERATION XERS, BABY BOOMERS

The collegiate educational attainment of a child is negatively affected by nontraditional family structures with parents who are divorced, single, or not married. Overall, only 47% of children remain in traditional households with married parents by the time they turn 17 years old (Fagan & Churchill, 2012). Specifically, 36% of individuals from traditional family structures earn a bachelor's degree as compared to less than 20% from nontraditional family structures. Furthermore, college graduates earn twice as much income as high school graduates (Alonzo, 2017), and college graduates earn approximately $1 million to $3.4 million more income over a lifetime (Carnevale et al., 2015). In addition, college degrees have become more required in the American workforce (Alonzo, 2017). For example, in 1940, 4.6% of the United States population possessed a bachelor's degree as compared to 36.0% in 2019 (United States Census Bureau, 2006, 2020a).

Equally related, lower levels of educational attainment have been highly correlated with lower levels of family income. The negative effect of family income on educational attainment also negatively affects future potential earnings. Research has revealed that Millennials, individuals born in 1981 and after, with college degrees not only have higher incomes than high school graduates, but Millennials with college degrees also exhibit higher job satisfaction, higher career attainment, and higher well-being (Pew Research Center, 2014). Additionally, there are gaps in educational

attainment in regard to racial or ethnic group, where the greatest gap exists between "advantaged groups" which include White and Asian students, and "less advantaged groups" which include African American, Hispanic, and Native American students (Kao & Thompson, 2003).

Educational attainment has been studied since before the mid-1900s (Blake, 1967). It is crucial to understand the underlying factors that affect educational attainment of four-year college degrees in America in order to make improvements to the educational system as well as to inform society how to better prepare families to battle against the odds of low educational attainment. As reported in 2019, 36.0% of individuals in the United States age 25 and over had earned bachelor's degrees or higher, compared to 29.2% in the state of Florida (United States Census Bureau, 2019a, 2020a). Florida specifically ranked 31 of 50 states in regard to the proportion of younger individuals with bachelor's degrees (National Science Foundation, 2019).

After preliminary analysis of educational attainment in the state of Florida, this researcher selected Polk County for this study since this Central Florida county had statistically low educational attainment, with only 20.0% of individuals age 25 and over having earned bachelor's degrees or higher as reported in 2019 (United States Census Bureau, 2019a). Additionally, the family structure makeup of individuals in Polk County ages 15 and older included 48% of traditional family structures, and 52% of nontraditional family structures which included the statuses of never married, separated, widowed, and divorced (United States Census Bureau, 2018a).

This study focused on the changing norms of family structure and the effect this has had on educational attainment rates of individuals in Polk County from traditional

and nontraditional households when comparing different generations of individuals. Millennials are defined as individuals born in 1981 and after, Generation Xers are individuals born in 1965 through 1980, and Baby Boomers are individuals born in 1946 through 1964 (Pew Research Center, 2019a). This study particularly focused on the Millennial, Generation X, and Baby Boomer generations.

Background of the Problem

Resource dilution theory states that the more children there are in a family, the more diluted the family resources become, thus negatively affecting the educational outcomes for each child (Black et al., 2005; Blake, 1967, 1981, 1989; Downey, 1995, 2001; Steelman & Powell, 1989). In addition, family structure has an effect on family resources in regard to family income and family size. The effects of family income, size, and structure on educational attainment have been examined; however, studies focusing on the relationship between four-year college degrees amongst generations and the recent changing trends in the American family structure are lacking. This study addressed a gap in the literature by focusing on higher educational attainment rather than K-12 educational attainment as a vast amount of research has focused on K-12 average years of education, GPA, standardized achievement test scores, grades, cognitive skills, and academic achievements (Amato, 2010; Benner et al., 2016; Blake, 1989; Downey, 1995, 2001; Fagan & Churchill, 2012; Teachman, 1987; Travis & Kohli, 1995).

Furthermore, at the time of this study, students who qualified for dual enrollment while still enrolled in high school, courses counting towards two-year college degrees, were free; therefore, four-year college degrees were the central focus of this study. In particular, Florida offers dual enrollment at all community colleges and some four-year

institutions; students are exempt from paying for course registration, tuition, as well as laboratory fees (Krueger, 2006; Florida Dual Enrollment Programs Act, 2002/2019).

This study analyzed the effect of family-related variables on Millennial students, as compared to students from the Generation X and Baby Boomer generations. Specifically, this study tested whether or not family structure continued to have as negative of an effect on educational attainment as it had in the past (Biblarz & Raftery, 1999; Demir-Dagdaset al., 2018; Fagan & Churchill, 2012; Wojtkiewicz & Holtzman, 2011).

In order to generalize to the larger population of Polk County, an organization with multiple locations that employed individuals across the county was needed to obtain a diverse sample. Furthermore, an organization with a sample size of 196 individuals or more was needed in order to reach a confidence level of 95%. Meeting the requirements of diversity and sample size, an accessible Polk County government agency served as the research site. This government agency employed approximately 250 individuals at the time, and demographic analysis revealed the agency employee demographics were consistent with the demographics of Polk County residents.

Nontraditional family structures, such as families with divorced parents, have historically had a negative effect on educational attainment coupled with the dilution of family resources (Biblarz & Raftery, 1999; Demir-Dagdaset al., 2018; Fagan & Churchill, 2012; Wojtkiewicz & Holtzman, 2011). Additionally, the recent trend in increased nontraditional family structures includes the increased acceptance of divorce in America alongside the increased acceptance of single parenting and cohabitation parenting (Fagan & Churchill, 2012; Gurrentz, 2019; Pagnini & Rindfuss, 1993;

Stevenson & Wolfers, 2007; Thornton & Young-DeMarco, 2001). Interestingly, divorce rates stabilized after the 1980's, however increased greatly for those over the age of 35 (Kennedy & Ruggles, 2014; Lundberg & Pollak, 2015; Wu, 2017).

Cohabitation is defined as individuals who live with their significant other, such as boyfriend or girlfriend, and are not married. Specifically, the number of unmarried partners cohabitating in the United States has tripled in the last 20 years as reported by the United States Census Bureau, shifting from six million to 20 million (Gurrentz, 2019). This trend is significant because research has shown that disruptions in the structure of a family have resulted in a negative effect on the educational attainment of children living in that household (Biblarz & Raftery, 1999; Demir-Dagdas et al., 2018; Fagan & Churchill, 2012; Wojtkiewicz & Holtzman, 2011). Particularly in regard to higher education, Fagan and Churchill (2012) argued that children were less likely to attend college if they had experienced parental divorce or separation. A question that needed to be asked, however, was whether the societal definition of family structure shifting from traditional structures to include nontraditional structures has an effect on educational attainment in regard to the resource dilution theory.

Statement of Problem

In 2009 it was reported that 47% of American children had parents who remained married by the time the children turned 17 years old (Fagan & Churchill, 2012). This calls attention to nontraditional family structures, as these types of structures have historically been shown to negatively affect the educational attainment of children in these families (Amato, 2010; Biblarz & Raftery, 1999; Demir-Dagdas et al., 2018; Devor, 2014; Fagan & Churchill, 2012; Schmierer, 2011; Wojtkiewicz & Holtzman, 2011). As

nontraditional family structures have become more accepted in American society, this is important to consider when discussing resource dilution and educational attainment. Even though recent studies have focused on trends with family size, family income, and racial or ethnic groups, it may become increasingly crucial to see if changes in the definition of family structure has had an effect on educational attainment, in addition to considering family size, family income, and racial or ethnic groups.

Will the lack of a married mother and father in a traditional family structure continue to have the same or more of a negative effect on a student's collegiate educational attainment? Or will that effect decline as the societal definition of family structure broadens over time to include nontraditional family structures? In either case, this study hopes to inform families, high school counselors, higher education institutions, and college funding agencies by providing a clearer understanding of the current, relevant family-related factors that create the biggest barriers to students attaining college degrees.

Statement of Purpose

The purpose of this quantitative study is to test the effect of family structure, based on the resource dilution theory that relates family income and family size, on educational attainment of Polk County government agency employees while controlling for participant gender and ethnicity. Specifically, individuals from the Millennial, Generation X, and Baby Boomer generations were compared for statistical differences. The participants were employees at a Polk County government agency due to the comparable demographics of the agency staff as compared to the demographics of Polk County residents in regard to age, race, education level, hourly mean wage, annual mean wage, and city of residence.

This quantitative research design was conducted online with an anonymous survey, at one point in time, in order to collect consistent data from each participant. The independent variable, family structure, is defined as the marital status and living situation of the participant's parents when the participant was age 17. Each participant provided information as if they were 17 years old; this was crucial in order to determine the family income level prior to the person attending college, if they attended college (Belley & Lochner, 2007). Specifically, instead of requiring the participant to recollect their family income at the time they were 17 years old, the survey displayed a chart containing the definition of low, middle, and high income for each generation. The dependent variable, educational attainment, is defined as the participant's graduation from a four-year college, which includes a bachelor's degree or higher.

The two intervening variables are family income and family size. First, family income is defined as the combined wages that parents brought into the home at the time the participant was 17 years old. Second, family size is defined as the number of siblings belonging to one or both parents living in the same household as the participant, when the participant was 17 years old. Specifically, family size includes siblings who are biological, half, step, and adopted.

It is worth noting that this study has limitations. Firstly, the participants were limited to staff employed at a Polk County government agency. Secondly, the regional research site was geographically limited to the area of Polk County, Florida, in order to address the low educational attainment rate as compared to state and national statistics (United States Census Bureau, 2018b). Thirdly, the central phenomenon was limited to

employed individuals. The justification of each limitation is explained in detail within the limitations section of Chapter 5.

Research Questions

1. Do family size, family income, and family structure predict the educational attainment of four-year college degrees?
2. What is the greatest predictor of educational attainment, when considering family size, family income, racial/ethnic group, and family structure?
3. Is there a relationship between educational attainment and family size?
4. Is there a relationship between educational attainment and family income?
5. Is there a relationship between educational attainment and family structure?
6. Is there a relationship between educational attainment and racial/ethnic group?
7. Is there a relationship between educational attainment and family structure for individuals from the Millennial generation?
8. Is there a relationship between educational attainment and family structure for individuals from Generation X?
9. Is there a relationship between educational attainment and family structure for individuals from the Baby Boomer generation?
10. Is there a difference in family structure acceptance rates for individuals from the Millennial, Generation X, and Baby Boomer generations?

Theoretical Framework

Resource dilution theory, first developed by Judith Blake in 1981, was used to study the effect of family size on family resources and sibling outcomes. This milestone study and significant theory indicated that there is an inverse relationship between the

quantity of children in a family and sibling educational outcomes (Blake, 1981); as the resources of a family's income is diluted with a larger family size, this negatively effects the educational attainment and achievement of the respective children. Another key point is that the structure of a family further affects the relationship between family income and sibling educational outcomes. As applied to this study, the resource dilution theory holds that one would expect the independent variable (family structure) through the mediating variables (family income level and family size) to influence the dependent variable (educational attainment of four-year college degrees of Millennials compared to Generation Xers and Baby Boomers) because family structure norms are different in America today as compared to the mid-1900s (Lundberg & Pollak, 2015). Family structure, to put it differently, may have a differing effect on educational attainment of individuals from different generations when assessing family size and family income.

Definition of Terms

The key terms in this literature review include resource dilution theory, family size, family income, educational attainment, family structure, Millennials, Generation Xers, and Baby Boomers.

Resource Dilution Theory

Resource dilution is described as the inverse relationship between the size of a family and family resources, and the negative effect that decreased resources has on children's educational attainment or cognitive developments (Blake, 1967, 1981; Downey, 1995, 2001; Jæger, 2006, 2009; Sandberg & Rafail, 2014; Steelman et al., 2002). As the number of siblings in a family increase, the resources are diluted amongst those siblings. Generally, family resources include family income, time, energy, as well

as in-household resources such as educational materials. For the purpose of this study, family income is the resource of major focus. Other definitions of resource dilution may focus more specifically on the sibship size, sibling spacing, sex composition, or birth order; however, this study mostly remains broad rather than focusing on the specific breakdown of sibling compositional properties.

Family Size

Family size is defined as the number of siblings belonging to one or both parents living in the same household. As an increased number of siblings causes further dilution of resources, it is important to capture the family size to include every sibling living in the same household, living on the same resources. Family size may include siblings as a combination of biological, half, step, and adopted. Only surviving siblings are included in this study, as resources would not further be diluted from a non-surviving sibling. Consideration is not given to grandparents or other miscellaneous family members living in the same household, as the purpose of this study is to focus on the parental resources and its effect on the children's educational attainment. In particular, family size has been reported incrementally or within ranges such as 2-3 versus 4-5 siblings, along with the indication of one or two parents present within the household. As a landmark study conducted by Blake (1989) used increments for describing family size, the same practice was used in collecting family size data in this study.

Family Income

Family income is defined as the combined wages that parents brought into the home, as perceived by the participant at age 17. These wages include taxable income, transferred income, and social security income from the head of the household and their

spouse/partner. While the Panel Study of Income Dynamics defines family income in the codebook by also including these same incomes of other family unit members, for the purposes of this study, those incomes are not included (Panel Study of Income Dynamics, 2017). In terms of family income levels, these levels are labeled as low, middle, or high. These family income levels are frequently used in studies using databases such as the Panel Study of Income Dynamics (Duncan et al., 2017). When collecting family income data, it was collected from a particular age of the participant's life. For example, in the 1979 National Longitudinal Survey of Youth, family income data was collected from individuals when they were ages 16-17 in order to determine the family income level prior to the child attending college (Belley & Lochner, 2007). Low family income includes studies describing low socioeconomic status (SES), middle family income includes studies describing middle-SES, and high family income includes studies describing high-SES (Benner et al., 2016; Jury et al., 2017; Niu, 2016). Although studies may have split family income levels into quartiles or quintiles, this review only uses low, middle, and high income levels (College Board, 2017; Long & Riley, 2007).

Educational Attainment

Educational attainment is defined as the student graduation from a four-year college or university, which includes a bachelor's degree or higher. Strictly *attending* a four-year college or university is not included in the definition of educational attainment as resource dilution may prevent a student from continuing to attend, and graduate from, a higher education institution. A study conducted of at-risk children, based on high school attendance and family income, found that out of the 61% of students who entered a 2-year or 4-year postsecondary program, only half (47%) of those students completed

those programs (Finn, 2006). Therefore, to truly analyze the effect of resource dilution on educational attainment, the *graduation* with a four-year college degree is the focus of this study in order to account for changes in family resources that may affect the student while enrolled at a higher education institution.

Family Structure

Family structure is defined as the marital status and living situation of the parents living in the same household of the study participant. Specifically, family structure is described as either a traditional family or a nontraditional family, where numerous studies may refer to traditional as married parents and nontraditional as divorced parents (Björklund et al., 2007; Teachman et al., 2000; Wilcox, 2009; Wilcox et al., 2015; Wojtkiewicz & Holtzman, 2011; Wu et al., 2015). Traditional family structures include households where the mother and father are married and living in the same home. Nontraditional family structures include families with parents who are single (either never married, or widowed), divorced, separated, same-sex, cohabitating (individuals who live with their significant other and are not married, whom may or may not both be the parents), or remarried. In regard to parental divorce, the number of times a parent has been divorced or remarried is not a major focus of this study (Lundberg & Pollak, 2015). Other common terms for family structure include family composition, family configuration, household structure, civil status, and nuclear families as compared to extended families (Amato, 2010; Biblarz & Raftery, 1999; Kennedy & Ruggles, 2014; Thornton & Young-DeMarco, 2001).

Millennials

Millennials are defined as individuals who were born after the year 1980 (Pew Research Center, 2019a). The divorce rate has decreased from 1990 to 2015 for those under the age of 35; the greatest decline was amongst those aged 15 to 24 where the divorce rate dropped by 38% (Wu, 2017). This decline in divorce rate for the Millennials has been attributed to an increased life partner selectivity due to the choice to marry at an older age and at a higher education level, as compared to Generation Xers and Baby Boomers. Due to the increased selectivity of life partners and decreased divorces by Millennials, the divorce rate may begin to decrease in the near future. The average family income in 1990 was $35,707 (United States Census Bureau, 1991).

Generation Xers

Generation Xers are defined as individuals who were born in 1965 through 1980 (Pew Research Center, 2019a). There was a larger female presence of Generation Xers in the labor force as compared to Baby Boomers (United States Census Bureau, 1970b). The average family income in 1970 was $9,870 (United States Census Bureau, 1970a).

Baby Boomers

Baby Boomers are defined as individuals who were born in 1946 through 1964 (Pew Research Center, 2019a). Baby Boomers had a low proportion of females participating in higher education as well as in the labor force (United States Census Bureau, 1964). More recently, the divorce rate has increased for this generation; those aged 55-64 today are twice as likely to get divorced and those aged 65 and older are three times more likely to get divorced (Wu, 2017). The average family income in 1962 was $5,956 (United States Census Bureau, 1964).

Significance of the Study

The significance of this study is to examine barriers that negatively affect the educational attainment of four-year college degrees, in order to bring awareness of those barriers, in hopes of increasing educational attainment of a bachelor's degrees both locally in Polk County, statewide in Florida, and nationwide. Parents might benefit from learning more about predictive factors that affect their children's graduation from colleges, as awareness may initiate proactive actions in encouraging and coaching their children to obtain scholarships and other resources in order to afford college. Additionally, high school counselors could share this information with families and students they advise, as counselors work intimately with the college preparation and application process. Higher education institutions could benefit from this research by learning what current factors to look for when recruiting and counseling students and by appreciating what the students have personally overcome in order to apply to four-year colleges. Furthermore, college funding agencies and scholarship organizations could share learned knowledge from this study with families of high school students who are seeking scholarships or financial assistance to attend college. This information may help these organizations to make funds available or create scholarships specific to family structures, as well as provide information to families about opportunities for their children to apply for college funding.

Organization of the Study

The study is organized into five chapters, including the introduction, review of the literature, methodology, results and findings, and discussion. Chapter 1 introduces the problem, which includes the background and statement of the problem, statement of

purpose, research questions, theoretical framework, key term definitions, and significance of the study. Chapter 2 synthesizes literature that is essential to this study, focusing on theoretical elements of the resource dilution theory as well as generalizations that may be drawn from the research collected. Chapter 3 begins with an overview of the pilot study conducted for this study. In addition, Chapter 3 reviews the research design and methodology, participant and sampling rationales, instrumentation, procedures, and processes to ensure valid and reliable results. Chapter 4 presents the quantitative analysis results of this study. Lastly, Chapter 5 summarizes the study, the key findings and conclusions, limitations, implications and recommendations for future research, implications and recommendations for education, and concluding remarks.

CHAPTER II: REVIEW OF THE LITERATURE

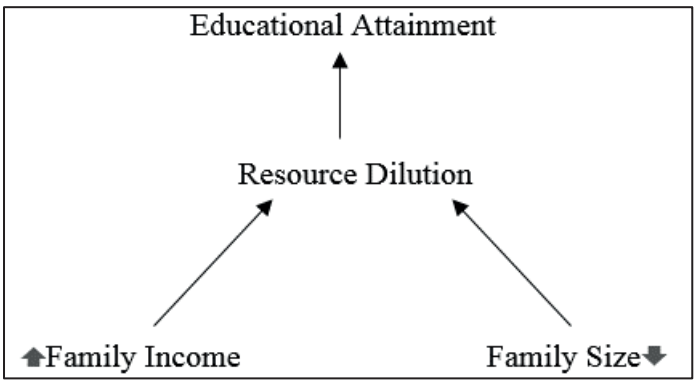
A review of the literature is most essential to understanding how family structure affects the educational attainment of four-year college degrees in the United States. The purpose of this literature review is to synthesize previous research on the resource dilution theory and family structure, and to describe how these areas of research effect the educational attainment of four-year college degrees. The review first analyzes the history of the resource dilution theory and how family income, alongside family size, generally affect educational attainment. Next, the review examines the effect of family structure on educational attainment, additionally focusing on the historical changes of American family structures through gender role changes and the legalization of same-sex marriages. Lastly, the review clarifies the ways each element of the resource dilution theory and family structure, together, effect the educational attainment of four-year college degrees.

Resource Dilution Theory

Resource dilution theory explains the inverse relationship between family size and family income; as family size increases, the availability of family income decreases (see Figure 1). Resource dilution has been studied for decades in American history, where correlations have been found linking the size of a family at particular SES levels to reduced income, which in turn, reduces the availability of funds for education amongst other environmental elements such as housing, food, and healthcare (Anastasi, 1956).

Figure 1

Resource Dilution Theory



Note. Resource dilution theory is an inverse relationship between family income and family size, which has an overall effect on educational attainment.

Resource dilution has been tested using longitudinal and cross-sectional datasets, and this theory continues to be supported by comprehensive research (Black et al., 2005; Blake, 1967, 1981, 1989; Downey, 1995, 2001; Steelman & Powell, 1989). Downey (1995) thoroughly explored resource dilution and supported the theory that children benefit less from family resources when they have numerous versus fewer siblings. This can be illustrated by additional research, which concluded that children without any siblings had attained more education as compared to children with siblings (Travis & Kohli, 1995). In particular, each additional sibling in a single family has accounted for a 15% decrease in odds that parents will fund a child's college education (Steelman & Powell, 1989).

Resources

Family income was not the only resource considered in resource dilution. More specifically, tangible educational resources in the home were also considered in some studies; these included books, a place to study, daily newspapers, household activities, or

a dictionary in the home (Sandberg & Rafail, 2014; Teachman, 1987). More recently, the presence of a computer or electronic device, such as a tablet or smartphone, and access to the internet were considered educational resources (Anderson & Kumar, 2019; Downey, 1995; Stanford University, n.d.). The gap between those with or without access to computers and the internet is known as the digital divide (Anderson & Kumar, 2019; Stanford University, n.d.). Overall, it has been evidenced that the presence of educational resources in a home increased educational attainment (Downey, 1995).

Alternatively, intangible family resources in resource dilution studies included parental time, support, and energy (Benner et al., 2016; Downey, 2001; Fagan & Churchill, 2012; Lundberg & Pollak, 2015). For instance, siblings may be viewed as competing for family resources, and when there are more family resources (parental time, energy, and income), tests of children's cognitive skills have been higher in families of smaller size (Downey, 2001). An intangible family resource that is particularly affected by divorce is the combined support and time a child receives from both parents, especially during high school and college (Fagan & Churchill, 2012).

Furthermore, additional intangible resources included cultural capital, such as cultural capital and cultural wealth (Bourdieu, 1973/2006). For example, Bourdieu stated cultural capital was inherited, and cultural wealth such as attending theatres, concerts, or museums was most prevalent amongst individuals at the high-SES income level. In summary, the additional resources most prominent in the review of literature aside from family income included reading materials, household activities, an electronic device, parental time and energy, as well as cultural capital and wealth.

Family Size

Blake (1981) initially explored the resource dilution theory in a milestone study, finding that the more children there were in a family, the lower the educational outcomes of each sibling. Additionally, Steelman and Mercy (1980) had similar findings that demonstrated an inverse relationship between family size and children's IQ. In fact, family size was found to have the most "detrimental" effect on the outcomes of a child (Blake, 1981). In primary education, for example, there was a two-year deficit in total years of education when comparing children of larger families to smaller families (Blake, 1989). Furthermore, scholars have found that siblings who are closely spaced experience more diluted resources as compared to siblings who are more widely spaced, and closely spaced siblings have decreased odds of attending higher education institutions (Powell & Steelman, 1993; Steelman et al., 2002; Steelman & Mercy, 1980).

American families are now of a smaller size (Blake, 1985; Downey, 2001) as compared to the past trend of Americans growing up in larger families (Blake, 1989). This recent trend of smaller family sizes may be attributed to greater American contraceptive knowledge, accessibility of contraceptives, a rise in the cost of raising a child, and the changing trend of the "ideal" family size (Bailey, 2013; Becker, 1960). However, over the past seventy years, resource dilution continues to exist as a supported theory (Blake, 1967).

More recently, Jaeger (2006, 2008, 2009) conducted numerous studies working with the Wisconsin Longitudinal Study dataset and each study confirmed that family size had a direct negative effect on educational attainment and cognitive ability. This is worth noting as analysis led to the compelling evidence supporting the view that children with

more siblings acquired less education as compared to children with few siblings. Overall, these studies are worth noting because each study endorses the resource dilution theory.

Family Income

Family income, in this study, is defined as the combined wages that the parents brought into the home, as defined by the participant at age 17. These wages include taxable income, transferred income, and social security income from the head of the household and their spouse/partner. In terms of family income levels, these levels are labeled as low, middle, or high. These family income levels are frequently used in studies using databases such as the Panel Study of Income Dynamics (Duncan et al., 2017).

As family income is the primary resource referenced in resource dilution, it is crucial to consider the implications family income or SES has on educational attainment. Using the Educational Longitudinal Study, Browne and Battle (2018) argued that higher SES positively affected the educational outcomes of the surveyed participants, meaning that income level affected educational attainment. Additionally, in families with closely spaced siblings, family income used toward education was especially diluted as parents did not have the proper time to recoup financially from previous children (Powell & Steelman, 1993; Steelman et al., 2002; Steelman & Mercy, 1980).

Family income not only had an effect on graduating from college, but family income also had an effect on *attending* college (Long & Riley, 2007). Specifically, family income has been shown to dramatically effect college attendance of children in the 1990s as compared to children from the 1960s (Belley & Lochner, 2007). More recently, 36% of children from low income families who qualified to attend college completed a bachelor's degree within eight years, as compared to 81% of children from high income

families (Long & Riley, 2007). Income inequality has been studied as the most statistically significant demographic factor affecting educational attainment. As funding for college was diluted in larger families, there was a "strong inverse relationship" between family size and three outcomes: the likelihood parents assisted with college funding, the amount of funding parents provided, and the proportion of funding the parent provided per child (Steelman & Powell, 1989). Accordingly, these studies confirmed the resource dilution theory and pointed to family income level as a strong predictor for college attendance and graduation.

Educational Attainment

Resource dilution has been tested through numerous studies to reaffirm the inverse relationship between family income and family size. Through a larger family size, the family income and resources become diluted, which then negatively affected the educational attainment of children in larger families. Educational attainment was a major focus of Blake's landmark research (1967) in the early 1900s, when Blake analyzed the educational attainment of White Americans from 1943-1960, finding that although the relationship between attainment and family size reduced over time, the relationship still existed by the end of the analyzed timeframe. The larger the size of a family was, the more of a negative effect the family size had on a child's educational attainment (Blake, 1981, 1989). The effect of resource dilution from 1997-2002 was researched using the Panel Study of Income Dynamics (Sandberg & Rafail, 2014). This study focused on families containing three or less siblings from traditional families and resulted with the notion that increased resources in the household suppressed some of the negative relationship between larger family size and lower scoring cognitive assessments.

One study used data from the National Longitudinal Study from 1972-1979 to test the effect of educational resources on educational attainment, surveying nearly 10,000 White high school students from the time of their senior year through the time they reached the approximate age of 25 (Teachman, 1987). Overall, net the effect of demographic indicators, educational resources yielded a positive effect on educational attainment, including college graduation. Another study focused on the effect of family income on college attendance from 1979-1997, and findings suggested that family income over time became more of an important factor that affected college attendance (Belley & Lochner, 2007). Educational attainment was measured at age 21 and family income was measured at age 16-17 to account for family finances prior to attending college. Overall, students coming from low income families demonstrated a lower likelihood of attending college, as this likelihood substantially varied by family income level (Long & Riley, 2007). In addition, however, low-SES students may also be less likely to attend college due to "psychological barriers" they experience as a result of their families' overall situations (Jury et al., 2017). These "psychological barriers" include students' emotional experiences such as well-being, identity management such as a sense of belonging, self-perception, and motivation such as the fear of failure.

Also using data from the National Educational Longitudinal Study, Downey (1995) analyzed data from 24,599 eighth graders, controlling for SES, and regression analysis demonstrated a clear relationship between decreased parental resources as a family size of up to five siblings increased. The inverse relationship between educational performance and family size was negative and statistically significant.

Furthermore, resource dilution has been tested through the use of the Wisconsin Longitudinal Study, which consists primarily of White participants who graduated from high schools in Wisconsin, with a decreased representation of low-SES students who dropped out of high school (Jæger, 2009). Ordinary least squares regression determined that the effect of family size on educational attainment was highly significant (Z = -3.49) (Jæger, 2008). Results also demonstrated that children whose parents divorced at an older age had less education than those whose parents had not divorced. Jaeger (2009) conducted a follow-up study using 5,192 sibling pairs from the Wisconsin Longitudinal Study. There was a direct negative effect of family size on educational attainment due to resource dilution.

Racial or Ethnic Groups

The relationship between educational attainment and racial or ethnic groups is an area of research that has been examined by scholars. Although differences in racial or ethnic groups are not a major variable in the resource dilution theory, it is an important and critical variable to consider when analyzing family-related factors that affect educational attainment as the United States population becomes increasingly diverse (Kao & Thompson, 2003). For example, according to the United States Census Bureau, statistics have shown the Non-White population increased from 19% in 1981 to 40% in 2019, as compared to the White population, which decreased from 81% in 1981, to 60% in 2019 (see Table 1) (United States Census Bureau, 2021).

Table 1

Race/Ethnicity Changes in United States Population

Race/Ethnicity	1981	2000	2019
		%	
White or Caucasian	81.21	69.36	60.22
Black or African American	11.84	12.19	12.56
Hispanic	6.94	12.64	18.49
Asian		3.84	5.77
American Indian and Alaska Native		0.74	0.74
Other / Mixed race		1.22	2.22

Educational attainment research has focused on particular racial or ethnic groups, such as Caucasians or African Americans, and has also studied differences between groups such as Whites and Non-Whites, or Asians and Non-Asians (Browne & Battle, 2018; Kao & Thompson, 2003; Perna, 2000; Vartanian et al., 2007). Overall, research has demonstrated that gaps in educational attainment amongst racial or ethnic groups has become more narrow, and the aspirations for college attendance have increased for all groups (Kao & Thompson, 2003). Reported by the National Center for Education Statistics (2019), undergraduate enrollment increased from 2000 to 2016 for Hispanic students from 10% to 19% and for Black students from 12% to 14%. Furthermore, from 2000 to 2015, the number of earned four-year college degrees tripled for Hispanics, as well as increased for students who were Black by 75%, Asian/Pacific Islander by 75%, and White by 29%.

However, the greatest gaps remain particularly between "advantaged groups," which include White and Asian students, and "less advantaged groups," which include African American, Hispanic, and Native American students (Kao & Thompson, 2003). In particular, students with the greatest likelihood of attaining four-year college degrees begin with Asian students, followed by White, Black and Hispanic, then Native

American students. The National Center for Education Statistics (2019) reported in 2010 that the graduation rate for four-year college degrees within six years of enrollment occurred most for Asians at 74%, Whites at 64%, Two or more races at 60%, Hispanics at 54%, Pacific Islanders at 51%, Blacks at 40%, and American Indian/Alaska Natives at 39%.

Although research has demonstrated a relationship between educational attainment and racial or ethnic groups when controlling for family income, it important to note that family income and parental education have consistently been the best predictors of educational attainment when compared to focusing strictly on racial or ethnic groups (Kao & Thompson, 2003; Vartanian et al., 2007). For example, when family income or parental SES is controlled for, educational attainment levels are mostly comparable between racial or ethnic groups (Kao & Thompson, 2003; Perna, 2000). In addition, when academic ability is controlled for, African American and Hispanic students are more likely to enroll in college than White students (Perna, 2000).

Lastly, when studying the relationship between educational attainment and racial or ethnic groups, it was notably important to also consider variables such as the culture of each group, ethnic subgroups, family structures, parental SES, financial aid, cost of college, academic ability, and differing translations of what achievement and attainment means to each group or culture (Browne & Battle, 2018; Kao & Thompson, 2003; Krein & Beller, 1988; Perna, 2000; Vartanian et al., 2007).

Family Structure

The definition of a traditional family has typically included a married mother and father, as well as their children. Today the idea of family structure has an expanded

definition to include nontraditional families with parents who are single, divorced, separated, same-sex, cohabitating, and remarried. The idea of marriage in order to have children or call oneself a family has seemingly become an outdated viewpoint, and marriage is becoming more optional than ever before due to more women in the workforce and family income having a higher importance in marriage (Raley et al., 2015; Stevenson & Wolfers, 2007). Historically, it has been shown that marriage rates have decreased greatly at every age and educational level (Qian, 1998).

Likewise, these notable changes in marriage patterns since 1950 includes increased divorce rates for those over age 35, couples marrying at an older age (Kennedy & Ruggles, 2014; Lundberg & Pollak, 2015; Wu, 2017), and smaller family sizes (Blake, 1985; Downey, 2001). As a result, family structures are changing more frequently (Teachman et al., 2000). For example, 5% of children in 1960 were born into a nontraditional family, whereas more recently this has increased to 40% (Wilcox et al., 2015). This may be attributed to divorces as well as decreases in marriage rates (Stevenson & Wolfers, 2007; Teachman et al., 2000).

At the time of this current study, divorce was becoming more accepted and frequent amongst certain age groups. One study showed that in younger generations, two out of five people believed divorce was "usually the best solution when a couple can't seem to work out their marriage problems," whereas older generations tended to remain married rather than divorce (Thornton & Young-DeMarco, 2001). Even though there is an increased acceptance of divorce, this is not decreasing the desire of Americans to have children. As shown, these studies reveal changing attitudes toward divorce and marriage, more so with younger generations.

Divorce Rates

In the mid-1900s, the divorce rate was low due to the legal restrictions of dissolving a marriage (Jacob, 1988). Marriage was a permanent fixture prior to the mid-1960s as only those who had spouses with a proven guilty offense or adultery could legally divorce. In addition, if both spouses were proven guilty in a serious offense or adultery, a divorce was not permitted. There are other ways divorce was treated differently than it is today. For example, in divorces prior to the mid-1960s, women were primarily granted legal custody of children as women were viewed as "better suited guardians," a family's property went to the husband if the wife was excluded from the title, and alimony was specific to women because they were dependent upon their husbands for monetary support. Since the mid-1960s, divorce laws went through drastic rewrites, and those changes included the following: legal custody of children was increasingly awarded to both parents instead of primarily women, property was recognized as "marital property," which belonged to both spouses, and alimony recognized women or men as dependents in a relationship. Overall, it was extremely difficult for a couple to divorce prior to the mid-1960s because of legal restrictions, which was apparent in American divorce rates prior to that time.

The divorce rate in America was low in the 1950s (Stevenson & Wolfers, 2007); however, from the 1960s through the 1980s, the divorce rate in America grew 136% (Amato, 2010). Taking into consideration the divorce rate fluctuations that have occurred over time, there have been dramatic highs and lows. For example, 11% of children born in the 1950s experienced a separation of their family (Wilcox, 2009), compared to a dramatic increase today, when family separation applies to over 47% of American

children (Fagan & Churchill, 2012). Furthermore, approximately 1,000,000 children in America have been affected by divorce each year since 1988 (Fagan & Churchill, 2012), and more recently, from 1990 to 2008, there was a large increase in the divorce rate showing these rates had doubled with individuals who were over the age of 35 (Kennedy & Ruggles, 2014). Divorce rates have fluctuated over the decades, but in the long run, this rate has increased according to research.

Individuals born since 1980, Millennials, seem to have a stabilized or declining divorce rate possibly due to younger individuals being more selective in finding a partner (Kennedy & Ruggles, 2014). This stability or slight decline may be attributed to the changed view of how a family is structured. Regardless of which generation is being considered when discussing divorce rates, this increase has been consistent among ethnic and racial groups, as well as across the levels of SES (Lundberg & Pollak, 2015). In contrast, it has been reported that since 1980, marriage and divorce has changed amongst levels of social class (Raley et al., 2015) and that low-SES families have seen the most decline of traditional family structures (Teachman et al., 2000).

Economic factors, such as educational level, also play a part in America's divorce rate (Lundberg & Pollak, 2015; Stevenson & Wolfers, 2007). Since the 1970s, divorce rates have declined with married couples where the wife is highly educated, whereas women without high school diplomas have demonstrated increased divorce rates (Martin, n.d.; Martin & Parashar, 2006). Generally, individuals who are graduates from a college or university have overall lower divorce rates (Lundberg & Pollak, 2015). Lastly, when considering the economic factors of education and income, those who are highly

educated and are in the middle to high-SES seem to increasingly preserve the bond of marriage rather than choose divorce (Wilcox, 2009).

In summary, the divorce rate in America has fluctuated over the decades, while overall, the divorce rate has increased over time. However, in the future, the divorce rate is projected to decrease, and nontraditional family structures are projected to increase, due to younger individuals choosing not to marry, being more selective of partners, or choosing to marry at an older age with higher educational attainment. Overall, divorce influences family resources and has changed marriage over time.

Divorce Acceptance and Attitudes

Using five data sets from the 1960s to the 1990s, Thornton and Young-Demarco (2001) studied the trend of changing attitudes toward family issues such as divorce, finding that in the 1990s there was a high level of acceptance of divorce in America. This study used one data set in particular to report that 80% of young people indicated divorce was acceptable to them. Divorce is not only becoming more accepted in America, but this acceptance has changed the way Americans define the structure of a family.

As for the younger couples in America, the drastic increase in the divorce rate was not applicable, as they were showing an increase of cohabitation as well as marrying later in life. This trend displayed a changing attitude towards the ideas of marriage and divorce. For example, in 2008 it was found that more than 40% of individuals at the age of 30 had not yet married (Kennedy & Ruggles, 2014). A longitudinal study conducted from 1950-2010 also yielded similar results, finding that marriage behavior in America changed drastically (Lundberg & Pollak, 2015). This drastic change included marriage occurring later in life with increased chances of divorce, as well as cohabitation

becoming common as a preliminary step to marriage. In fact, children who came from nontraditional households were more likely to accept nontraditional family structures, have nontraditional families themselves, and have children outside of marriage (Fagan & Churchill, 2012).

Cohabitation

Alongside the increase in divorce rate, there has also been an increase in the likelihood that couples will form households prior to marriage (Stevenson & Wolfers, 2007). Cohabitation, for example, has been correlated with the increased rate of nonmarital births taking place (Lundberg & Pollak, 2015). This changed perception of family structure has begun to include nonmarital childbearing, as there has been considerable movement towards this since the 1970s and 1980s (Pagnini & Rindfuss, 1993). In 1985, there was also a notable increased acceptance of single-mother families. For example, in a survey conducted in the late 1970s and again in the early 2000s, the amount of high school seniors who said nonmarital childbearing was worthwhile and not affecting others increased from approximately 40% to now more than 55% (Wilcox et al., 2015). Furthermore, compared to the 1960s, marriage is now seen as less of a "stable framework" for having children in America.

Gender Roles

Over the past three decades, the American structures of families have evolved (Pagnini & Rindfuss, 1993). Generally, this evolution of family structure may be attributed to the acceptance of nontraditional family structures, due to changes in gender roles. More specifically, the traditional gender role in America was for the father to work

while the mother stayed home with the children; however, as America has an increased proportion of women in the workforce, these roles have adapted to more current times.

This shift in gender roles and family structures has greatly been attributed to the ending of wars, in particular World War II, due to a shift in the American economy (Teachman et al., 2000). After World War II, females largely entered the workforce (Greenwood & Guner, 2008). Married women and White women caused the greatest increase in the female workforce during the 1940s, as single and minority women were largely already employed (O'Neill, 1997). For example, in 1940, 70% of African American women worked service jobs as compared to 22% of White women (Rutherford, 1992). This shift in gender roles earned women more independence and freedom, leading to increased divorce rates, marriages at an older age, less stable living arrangements for children, and increased variation in family structures (Greenwood & Guner, 2008; Teachman et al., 2000). Furthermore, women's rights became more prevalent in politics, demonstrated by the Equal Pay Act passed by Congress in 1963, the Voting Rights Act of 1965, and Title IX of 1972 prohibiting sex discrimination (United States National Archives and Records Administration, 2019). In 1975, the participation in the labor force was primarily males at 79.1% compared to females at 42.5% (United States Census Bureau, 1970b).

As gender roles continue to diversify, there is easier access for women who support themselves to get divorced, society is more accepting of women in cohabitation, and younger generations are choosing to get married at an older age while being more selective of their life partners (Pagnini & Rindfuss, 1993). These changes in gender roles reveal that attitudes in America are changing, with research demonstrating an increased

acceptance and behavior of couples having children outside of marriage since the early 1970s. Moreover, this attitude is particularly present in individuals who are younger and higher educated.

Same-Sex Marriages

Same-sex marriage is a nontraditional family structure that has dramatically changed in the history of the United States. In 1993, the Hawaii Supreme Court ruled that same-sex marriages would be recognized, stating that a ban on same-sex marriages would be an act of sex discrimination (Encyclopedia Britannica, n.d.; Schmalz, 1993). In 1996, the Defense of Marriage Act was enacted by the United States Congress, declaring that same-sex marriages would not be recognized. Furthermore, this Act of Congress stated that individual states were not responsible for recognizing same-sex marriages from elsewhere, as long as those states had strong policies in place stating otherwise (Defense of Marriage Act, 1996; Encyclopedia Britannica, n.d.). Over the next 10 years, the majority of states declared they would not recognize same-sex marriages from other states (Encyclopedia Britannica, n.d.).

Further debate continued over the recognition of same-sex marriages in the 2000's through local and state rulings, over whether or not denying a marriage license to same-sex partners violated constitutional rights (Encyclopedia Britannica, n.d.). After years of turmoil for same-sex partnerships, by 2010 approximately half of the American population supported legalizing same-sex marriage. Four years later, 35 total states had legalized same-sex marriages, and in 2015 the Supreme Court ruled in Obergefell v. Hodges that same-sex marriages would be legally recognized in every state (Encyclopedia Britannica, n.d.; Moreau, 2020; Murray, 2016). In summary, the

legalization of same-sex marriages and the acceptance of same-sex relationships represent an influential time in American history that has led to a greater presence and acceptance of nontraditional family structures (see Table 2) (Gates & Brown, 2015; McCarthy, 2019; Pew Research Center, 2019b; Scommegna, 2016; United States Census Bureau, 2019b).

Table 2

Same-Sex Marriages in the United States

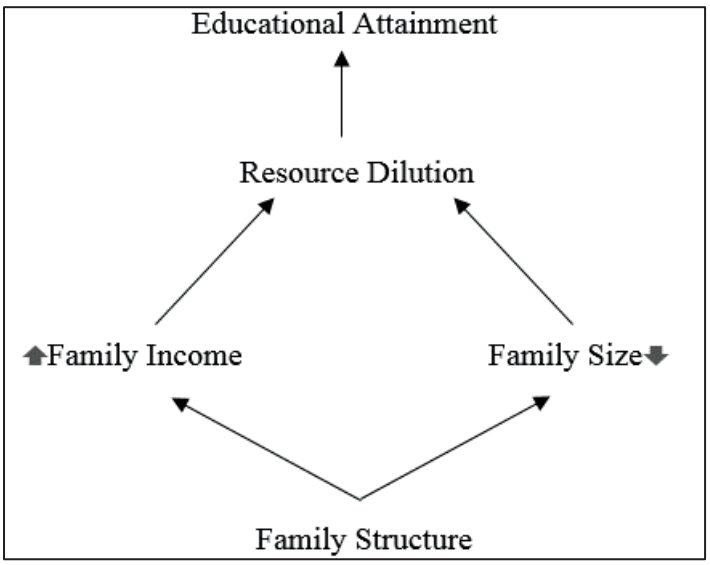
Same-sex marriage statistic	Historical		Current	
	Result	Year	Result	Year
Public support of same-sex marriage	31%	2004	61%	2019
Same-sex relations between consenting adults should be legal	43%	1977	83%	2019
Estimated number of married same-sex couples	13,500	2004	543,000	2019

Resource Dilution Theory and Family Structure

Family structure plays an important role in resource dilution and the overall effect family resources have on educational attainment (see Figure 2). Educational attainment of children in nontraditional households are negatively affected in regard to college attendance and graduation, K-12 educational attainment, cognitive development, as well as standardized achievement test scores (Amato, 2010; Biblarz & Raftery, 1999; Björklund et al., 2007; Demir-Dagdas et al., 2018; Devor, 2014; Fagan & Churchill, 2012; Sandberg & Rafail, 2014; Schmierer, 2011; Wojtkiewicz & Holtzman, 2011).

Figure 2

Resource Dilution Theory and Family Structure



Note. Family structure affects family income and family size within the resource dilution theory, and overall has an effect on educational attainment.

Nontraditional Effect

Reviewing marriage and family structure in the 1960s through the 1990s, there was a belief expressed that divorce had a negative effect on children (Thornton & Young-DeMarco, 2001). Recent research supported this belief, when results concluded that children obtained higher postsecondary educational attainment coming from families with parents who had continuously been married, as compared to children from families with divorced parents (Devor, 2014). More specifically, it was found that children with single-parent or stepparent families had lower rates of college graduation (Björklund et al., 2007) and adults with divorced parents had a tendency to attain less education (Amato, 2010). The longer a child lived in a single-parent family, educational attainment was greatly reduced (Krein & Beller, 1988). Ultimately, family structures involving

divorce or separation reduced the likelihood of college attendance, and children from family structures involving divorce were additionally negatively affected through a reduced learning capacity (Fagan & Churchill, 2012).

Family structure may also affect educational attainment of children in regard to time, as parents invested less time with their children beginning as early as two years prior to a divorce in anticipation of the divorce (Schmierer, 2011). Children may experience declined stability, in particular, if their living arrangements are modified due to family structure changes (Fagan & Churchill, 2012). It may be argued, however, that children were affected by divorce differently depending on if the parents considered themselves "happily divorced" (Stevenson & Wolfers, 2007). Furthermore, when a child's parents get divorced, the child is affected differently depending on the age of the child, if the child moved to another house, and the changed resources of the family (Fagan & Churchill, 2012). Overall, divorce has been shown to be one of the most catastrophic events in a child's life, negatively affecting their education, mental health, and relationships with family (Demir-Dagdas et al., 2018).

Single and Step Parenting Effect

Previous studies have focused on comparing children from specific types of nontraditionally structured households. In particular, studies compare the effect of single parenting and step parenting on children, as compared to traditional parenting. Generally, children from traditional or single-mother families had higher educational attainment as compared to children from stepparent or single-father families (Biblarz & Raftery, 1999). It is also important to note, however, that single-parent families may have smaller family sizes, and if the family income is able to compensate for this specific nontraditional

family structure, educational attainment may not be affected as negatively as in other nontraditional family structures. Moreover, this significant negative effect was in part due to the lower level of family income.

Particularly in single-mother families, children were more likely to attend college as compared to children from stepparent families, as single mothers provided support to "push" their children to attend college and circumstances helped qualify their children for financial aid (Wojtkiewicz & Holtzman, 2011). However, the educational attainment of children from single-mother families, as compared to traditional families, was not as high because the form of support needed to graduate from college, as compared to *attend* college, may have been lacking. Research found that although the lack of a father presence in a single-mother family negatively affected the children, specifically the decreased family income associated with larger family sizes demonstrated a negative effect alongside the lack of a father presence (Fahey, 2017). Recently reported, children today in low-SES families, as compared to those in high-SES families, are much more likely to live in a household without a father.

In addition, families with single mothers who were home with the children were found to have a disadvantage because most likely the mothers were unemployed or had a low-SES (Biblarz & Raftery, 1999). Therefore, single mothers who were employed had more of a positive effect on their children, and this effect increased when the mothers had higher levels of employment.

The nontraditional family structure of stepparents has also been studied. In stepparent families, it was found that parents provided less emotional and monetary support to their children, when compared to single mothers (Wojtkiewicz & Holtzman,

2011). Overall, research found this lack of emotional and monetary support in stepparent families deterred children from attending and graduating from college.

Today children of low-SES are more likely to grow up in a nontraditional family without a father present as compared to the 1950s and 1960s (Fahey, 2017). Given these points of comparing traditional families to single and stepparent families, single-mother families as well as stepparent families both demonstrated less time spent with the children overall (Wojtkiewicz & Holtzman, 2011). As children today are more likely to grow up in a nontraditional family, and this family structure is becoming part of the new normal, it will be important to study the long-term effect that nontraditional families has on educational attainment.

Socioeconomic Status

The structure of a family affects the educational attainment of children, and in a like manner, SES also affects educational attainment of children. As family structures are changing in America, those who are "most vulnerable" to these changes are children in low to middle-SES communities (Wilcox, 2009). Traditional family structures are becoming more correlated with middle to high-SES, as marriage is more likely to occur for those with higher educations and higher incomes (Raley et al., 2015). Therefore, the relevancy and stability of family structure seem to be most challenged in low to middle-SES families. More specifically, women with college degrees compared to those with high school diplomas had similar divorce rates in the 1970s; however, in the 1990s there were 20% less divorces for women with college degrees as individuals with higher education tended to marry at an older age. In summary, lower SES has historically had a negative effect on educational attainment.

Family Size and Nontraditional Structures

When considering resource dilution and its effect on educational attainment, research has stated that larger family sizes had a greater negative effect on educational attainment as compared to the effect of having a nontraditional family structure (Blake, 1981). However, as the American definition of family structure has evolved and the acceptance of nontraditional family structures has increased, one might wonder if having a nontraditional family today has even less of a negative effect on educational attainment as compared to the negative effect of having a larger family size. On the other hand, it could be argued that the increased quantity of nontraditional family structures today may cause an increase in the negative effect of these family structures on educational attainment. Therefore, this study tested the effect of family structure on educational attainment today with Millennials, Generation Xers and Baby Boomers, due to nontraditional family structures having higher rates of acceptance and being more prevalent in society than ever before.

Methodology of Literature Review

Research was gathered for this current study's literature review through the Roux Library at Florida Southern College via electronic database access to Academic Search Complete, EBSCOhostWeb, ProQuest Research Library, and ProQuest Dissertations and Theses Global. The second research tool used was a web-based search engine, Google Scholar. Both research tools used the methodology of searching for predetermined terms including, but not limited to, educational attainment, resource dilution, family size, family income, and family structure. The inclusion criteria for research included literature that was peer reviewed, written in the English language, and conducted in the United

States. The United States geographical area was a parameter for research in order to restrict literature to focus on a consistent educational system within one country. The research tools and methods were selected based upon recommendations provided by librarian Julie Hornick at Florida Southern College, the textbook *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (Creswell, 2014), and other literature review reference guides (Boote & Beile, 2005; Galvan, 2017).

Conclusion

Discussion

Resource dilution theory continues to portray an inverse relationship between family income and family size, which has an effect on educational attainment at the K-12 and collegiate level (Black et al., 2005; Blake, 1967, 1981, 1989; Downey, 1995, 2001; Steelman & Powell, 1989). Educational attainment in general was negatively affected by larger family sizes and lower family incomes, which overall caused a dilution of family resources. Another factor that affected educational attainment was the structure of a family (Biblarz & Raftery, 1999; Demir-Dagdas et al., 2018; Fagan & Churchill, 2012; Wojtkiewicz & Holtzman, 2011). To clarify, nontraditional family structures negatively affected the college graduation of children (Björklund et al., 2007; Demir-Dagdas et al., 2018; Wojtkiewicz & Holtzman, 2011).

Family structure is defined as traditional or nontraditional, where nontraditional families includes stepparents, single parents, same-sex parents, remarried parents, and cohabitating parents either due to divorce, separation, death, or a choice not to marry (Björklund et al., 2007; Teachman et al., 2000; Wilcox, 2009; Wilcox et al., 2015; Wojtkiewicz & Holtzman, 2011; Wu et al., 2015). Studies showed that nontraditional

family structures have historically had a strong negative effect on educational attainment (Amato, 2010; Biblarz & Raftery, 1999; Demir-Dagdas et al., 2018; Devor, 2014; Fagan & Churchill, 2012; Schmierer, 2011; Wojtkiewicz & Holtzman, 2011), meaning that family structure had an additional effect on educational attainment when considering family size and family income within the resource dilution theory. However, data needs to be further explored in order to account for the evolving societal definition of the American family structure.

This evolution of family structure includes increased attitudes of acceptance towards divorce, which can be illustrated by the increased divorce rates since the 1950s (Lundberg & Pollak, 2015; Pagnini & Rindfuss, 1993). Divorce rates seemed to stabilize in the 1980s but continued to rise for individuals above the age of 35 years. An increased divorce rate is significant because of the effect nontraditional family structures have historically had on educational attainment.

Furthermore, individuals have been choosing to marry at an older age with increased levels of education since the 1980s (Amato, 2010; Lundberg & Pollak, 2015; Wilcox, 2009), and there is increased selectivity in choosing a life partner. It may be speculated that this increased selectivity of marriage partners may cause a future decline in marriage rates accompanied by a decrease in the divorce rate, which in turn would cause an increase in nontraditional family structures. Specifically, divorce and changes in family structure have historically been shown to negatively affect the educational attainment of children from nontraditional families (Amato, 2010; Biblarz & Raftery, 1999; Demir-Dagdas et al., 2018; Devor, 2014; Fagan & Churchill, 2012; Schmierer, 2011; Wojtkiewicz & Holtzman, 2011). However, this negative effect of nontraditional

family structure on educational attainment may not be as negative as before due to the changed meaning of family structure and the increased acceptance of nontraditional family structures.

Final Study

The meaning of family structure is changing in America to include marriage, remarriage, single parenting, separation, divorce, same-sex marriages, and cohabitation; these types of family structures have higher rates of acceptance and consideration than ever before. In order to test the assumption that changes in family structure may not affect educational attainment as negatively as it did in the mid-1900s, a more recent study needs to be conducted. Studies have confirmed the negative effect nontraditional family structures have on educational attainment; however, the change in the effect over time has not been studied. This study focuses on the educational attainment of four-year college degrees, as literature is lacking in this area due to a focus on K-12 education. Also, collegiate graduation encompasses the long-term negative effect of resource changes that may occur while the student is in *attendance* at a college or university, preventing them from graduating.

In order to make improvements to the American educational system and to better prepare families to battle against low educational attainment odds at the collegiate level, it is necessary to understand current family-related factors that affect educational attainment. This study will test the assumption that the trend in increased acceptance of nontraditional family structures could trigger a decline of its negative effect on educational attainment. In summary, this study will add to the literature by comparing the effect of family structure on the collegiate educational attainment of Millennials to

Generation Xers and Baby Boomers through the lens of the resource dilution theory in order to improve educational attainment in Polk County as well as statewide and nationwide.

CHAPTER III: METHODOLOGY

Chapter 3 of this study presents the methodological procedures, processes, and rationale for each element of this study. The purpose of the methodology was to clearly describe each step of the methodology which includes the pilot study process, research design, participant and sampling rationales, instrumentation, procedures, and processes to ensure valid and reliable results. This cross-sectional quantitative study tested the relationship between family structure and educational attainment, more specifically, by examining this relationship in regard to generational similarities or differences amongst participants. Research on the effect of family structure on the educational attainment of individuals from different generations is limited as past research has focused on the age of participant (regardless of generation) or average years of education. Currently, generational research on the effect of family structure on educational attainment has not been examined.

Pilot Study

In September of 2019, a pilot study was conducted with a small group of individuals at a Polk County government agency, in order to ensure the validity and reliability of the survey instrument prior to the final study. Additionally, the pilot study helped in evaluating the format of the survey in regard to the order of questions and verbiage, so that data was most accurately gathered in order to link results to the resource dilution theory. To reiterate, resource dilution theory states that the more children there are in a family, the more diluted the family resources become, thus negatively affecting the educational outcomes for each child (Black et al., 2005; Blake, 1967, 1981, 1989; Downey, 1995, 2001; Steelman & Powell, 1989). The pilot study was successful in

gathering data from 27 participants, as well as receiving valuable input on survey improvements that enhanced the survey instrument for the final study.

Method

Participants

Thirty-five out of 258 staff members at the Polk County government agency were randomly selected from the active employee list to anonymously and voluntarily participate in the pilot study, through the use of a randomization tool (Haahr & Haahr, 2019). The randomization tool took 258 employee names, and randomly sorted them; the researcher used the first 35 names from the randomly created list and sent those individuals a hyperlink to the anonymous survey. Overall, 27 out of the 35 individuals agreed to participate in the pilot study.

Staff from the Polk County government agency were selected for the pilot study due to similar demographic characteristics the employees shared with the residents of Polk County in regard to age, race, education level, hourly mean wage, annual mean wage, and city of residence (see Table 3) (Office of Economic and Demographic Research, 2018, 2020; United States Bureau of Labor Statistics, 2019a, 2019b; United States Census Bureau, 2019a, 2020b). In addition to the government agency representing the target population of Polk County, the researcher had reasonable access to the participants through mutual employment and gathered agency demographic data directly from the organization. Similarities between the demographics of the agency staff and Polk County residents such as age, education level, and income demonstrated the sample population represented the target population of Polk County. Furthermore, similarities between the city of residence and racial/ethnic group demographics demonstrated the

distribution of participants across the geographic area of the county and ensured racial/ethnic groups of Polk County were represented. Lastly, Florida demographics provided additional reference points for comparison purposes.

Table 3

Demographic Data Comparison

Demographic characteristic	Agency staff	Polk County	Florida
Age			
15-39	38%	32%	32%
40-54	32%	18%	21%
55+	30%	33%	30%
Education level			
High school graduate or higher	100%	85%	88%
Bachelor's degree or higher	25%	20%	29%
City of residence			
Lakeland	35%	41%	
Winter Haven	13%	16%	
Lake Wales	10%	6%	
Bartow	5%	7%	
Haines City	4%	9%	
Auburndale	3%	6%	
Other	30%	14%	
Income			
Hourly mean wage	$ 20.42	$ 20.24	$ 22.12
Annual mean wage	$ 40,260	$ 42,090	$ 46,010
Racial/ethnic group			
White/Caucasian	73%	75%	75%
Black/African American	11%	15%	16%
Other	16%	10%	9%

Procedure

The pilot study was a necessary step in this research study in order to validate and calculate the reliability of the survey instrument, as well as ensure that proper and accurate data was collected through the lens of the resource dilution theory. The pilot study used random sampling, where participant names were randomly selected from a list

using statistical calculations, which aimed to increase participant trust in anonymity, thereby increasing the level of honesty in survey responses and overall improving participant response rate (Dillman et al., 2014; Fink, 2017). Furthermore, the pilot study was cross-sectional, as data collection occurred at one point in time.

In order to begin the pilot study, all staff of the Polk County government agency watched an informational video of the researcher explaining the purpose of the pilot study and the survey. Shortly after, those same individuals received an email summarizing the video. Twenty-four hours later, the researcher sent an email containing the survey hyperlink to 35 randomly selected individuals who had the opportunity to participate in the pilot study. Once directed to the survey hyperlink on SurveyMonkey.com, participants provided their consent to participate in the pilot study by reading an introduction to the survey, agreeing to the informed consent form, and completing questions on the online survey. One week later, the survey was closed by the researcher, and 27 surveys had been completed.

Overall, the survey included mostly demographic questions that were also used in the final study to link results to the resource dilution theory and test the additional effect of family structure on educational attainment through the lens of resource dilution theory.

Results

Following the completion of the pilot study, the researcher received positive feedback from those who did not wish to remain anonymous. Feedback included positive comments on the survey as well as the mixed mode recruitment methods, such as describing the study to participants via video and email. Participants appreciated the transparent purpose of the study and learning the value of the data they were providing.

Minor suggestions were made by participants, which were included in the final study. Altogether, the response rate was 77% without any reminder recruitment materials being sent to participants, as there were in the final study. The number of participants met the researcher's goal of gathering a minimum 20 responses in order to test the validity and reliability of the instrument with a large enough sample size.

A reliability analysis was carried out on one survey item, as only one question utilized Likert scale response options. Cronbach's alpha coefficient is defined as a measurement of internal consistency in regard to a scale and is most recommended for testing the reliability of Likert scale questions (Creswell & Creswell, 2018; Gay et al., 2012; Tavakol & Dennick, 2011). On a scale of 0 to 1.0, alpha coefficients with a .75 and above are considered reliable (Holcomb, 2017). The reliability of the Likert scale survey question was calculated as highly reliable through the statistical test, Cronbach's alpha coefficient ($\alpha = .84$). Furthermore, this response rate provided insight into the necessary response rate for the final study of at least 78% in order to achieve a 95% confidence interval.

In addition, the pilot study expanded the researcher's knowledge in how to complete the rigorous Institutional Review Board approval process, write a valid survey, as well as how to conduct a small-scale research study from start to finish. These learnings benefited the researcher when conducting the final study.

Conclusion

In summary, results of the pilot study demonstrated the willingness of individuals to participate in the online survey. As the pilot study yielded a high response rate, the researcher was comfortable moving forward with using the staff of the Polk County

government agency for the final study. Second, the high reliability of the survey reassured the researcher of the survey usability, and the validity of the survey was exhibited through the positive feedback the researcher received from participants and from the results. Lastly, the collection of data confirmed that proper information was requested in the survey in order to link results to the resource dilution theory and other related variables.

Research Design

The research design of this quantitative research study included collection and analysis of anonymous survey data. Survey data was collected at one point in time, making the study cross-sectional, and the survey was administered over the internet on SurveyMonkey.com. Close-ended questions were the preferred method of survey question format, as the researcher holds a postpositivist worldview where relationships between variables are tested in order to answer research questions (Creswell & Creswell, 2018). All things considered, the theory of resource dilution and the relationships between variables were tested through an unbiased approach and through statistical means.

In order to prepare for a successful study, strategies have already been employed towards this research design. These strategies included the researcher's writing of the survey to create questions and response options that were clear, concise, understandable, and most relevant to the study. The 10-question survey was composed by the researcher, as intensive review of existing surveys proved an instrument did not exist to meet the specific needs of this study. Secondly, a pilot study was conducted as an integral step in

establishing the comprehensive methodological protocol, prior to conducting the final study.

Rationale for the Methodology Selected

Data collection occurred electronically on SurveyMonkey.com due to the quantitative nature of the variables and relationships being tested. Furthermore, electronic surveys capture quantitative data in a consistent manner, are low cost, provide instantaneous access to data, typically yield high response rates, and have convenient exporting options to SPSS Statistical Software (Dillman et al., 2014; Fink, 2017; Fowler, 2014). In addition, the use of SurveyMonkey.com benefited the study, as the Polk County government agency staff were familiar with using this website to collect customer and employee satisfaction data. The familiarization of SurveyMonkey.com with the study participants increased the probability of improving participant trust and increasing the response rate, due to the experience participants had with the software and understanding of anonymity.

Qualitative and mixed methodologies such as interviews, open-ended survey questions, and focus groups were not selected for this quantitative research study due to the type of numerical data required to answer each of the research questions (Creswell & Creswell, 2018). Surveys, for example, allow for the collection of concise, consistent, and timely data (Dillman et al., 2014; Fink, 2017; Fowler, 2014), which improves the accuracy of the results, as well as the overall timeline of the study process.

Survey methodologies have unique challenges; however, the researcher addressed each challenge prior to conducting the study. Access to the survey may have acted as a challenge; however, the researcher tested the survey on desktops, mobile phones, and

tablets prior to publishing the hyperlink to ensure the survey was accessible. Second, participants often question the legitimacy of survey; however, legitimacy was emphasized with use of the Florida Southern College logo on the survey, and anonymity was indicated in every communication with the participants. Third, surveys can be challenging when gathering enough participants for the study; therefore, the researcher communicated the importance of each participant's contribution to the study. Lastly, the challenge of ambiguity and insensitiveness of survey questions was minimized through the construction of clear, well-thought-out questions.

Comparatively, an abundance of scholarly studies similarly used a survey methodological design. In fact, the majority of scholarly studies reviewed for this study used survey results from longitudinal datasets and studies, census data, or individual surveys to collect quantitative data (Amato, 2010; Anastasi, 1956; Biblarz & Raftery, 1999; Björklund et al., 2007; Black et al., 2005; Blake, 1967, 1981, 1989; Browne & Battle, 2018; Devor, 2014; Downey, 1995, 2001; Fagan & Churchill, 2012; Jæger, 2006, 2008, 2009; Sandberg & Rafail, 2014; Schmierer, 2011; Steelman & Mercy, 1980; Steelman & Powell, 1989; Travis & Kohli, 1995; Wilcox, 2009; Wilcox et al., 2015; Wojtkiewicz & Holtzman, 2011). In writing the survey, the researcher used these studies to establish a list of variables (see Table 4).

Table 4

Survey Instrument Variables

Variable	Classification	Measurement scale
Educational attainment	Dependent	Ordinal
Family structure	Independent	Nominal
Racial/ethnic group	Independent	Nominal
Generation	Independent	Ordinal
Gender	Independent	Nominal
Current enrollment	Independent	Ordinal
Family structure acceptance	Independent	Scale
Family income	Intervening	Ordinal
Family size	Intervening	Nominal

Participants and Sampling

Participants of this study included employees at a government agency located in Polk County, Florida, and the research sites included all agency locations that housed the agency staff. The researcher was an employee of the government agency and had access to general demographic data of the staff and Polk County residents. The researcher did not, and had never, supervised or managed any staff at the government agency. An analytic review resulted in the demonstration of similar demographic characteristics between Polk County residents and the staff at the Polk County government agency, proving the agency as a reasonable research site (see Table 3).

The sampling technique of the participants was simple random sampling, as each employee of the Polk County government agency had an equal chance of participation. As an employee of the government agency, the researcher did not participate in the research study.

Rationale for Selecting Participants for the Study

Employees at the Polk County government agency were selected as participants due to the similar demographic characteristics the employees shared with the residents of Polk County. The demographic comparison analysis was conducted by the researcher as a preliminary step in finding a countywide organization that housed a large enough sample size to statistically represent the population of Polk County.

After entering the population size of Polk County and a confidence interval of seven into a power test statistical calculator, it was determined that a total of 196 participants were required to reach a confidence level of 95%. A confidence level of 95%, which is common, would mean that the researcher would be 95% certain that the research results accurately represented the study population. Specifically, the Polk County government agency had 257 employees, and the predicted minimum sample size for the final study was 196 participants. This would at least produce a 78% response rate. In particular, response rate was calculated as the total number of participants divided by the total eligible participants (Dillman et al., 2014; Fink, 2017; Fowler, 2014).

Lastly, the participants had access to a tuition reimbursement program, provided by the Polk County government agency. Participants were eligible for the program if coursework enhanced the knowledge, skills, and abilities related to current work duties of the participants as well as prepared them for future career advancement. The survey specifically asked whether or not participants had received tuition reimbursement towards bachelor's degrees from the government agency in order to additionally analyze the effect of tuition reimbursement on educational attainment.

Rationale for Selecting the Research Sites

Polk County, Florida, was selected for this regional study as Polk County had a significantly lower proportion of its population age 25 and over having earned bachelor's degrees at 20.0%, as compared to Florida's population at 29.2% and the nation's population having bachelor's degrees at 36.0% (United States Census Bureau, 2019a, 2020a). This rate of lower educational attainment provided a region that would benefit from research focusing on educational attainment. The research sites in particular included all agency locations of the Polk County government agency located in numerous cities around the county.

Instrumentation

Survey Instrument

Data collection strictly occurred using an anonymous, single-stage survey with closed-ended questions. The survey was administered on SurveyMonkey.com, and a hyperlink was emailed to the participants from the researcher's agency email account. In light of a request from the government agency's Information Technology Department, the researcher's agency email was selected due to security reasons. The security of email contact was important to the government agency as the agency had been a recent and reoccurring target for hackers via external email contact. In addition, the agency had trained the participants to avoid opening emails from external sources. Lastly, external emails sent to all staff ran the risk of being blacklisted, and the agency did not want the Florida Southern College domain to become blacklisted.

The survey questions and responses were created by the researcher through extensive review of the resource dilution theory and the associated variables. Particularly,

each aspect of the survey was created with a result in mind (see Table 5). For example, as each variable was pertinent to answer each research question, responses were required for all 10 questions in the survey. In addition, the survey was kept brief in order to positively affect the response rate. Lastly, other survey settings included permitting response editing to emphasize ease-of-use and the restriction of tracking IP addresses to protect the anonymity of the data.

Table 5

Alignment of Research Questions to Data Collected

	Research question	Survey item to answer question
1.	Do family size, family income, and family structure predict the educational attainment of four-year college degrees?	Q: 1, 4, 5, 6
2.	What is the greatest predictor of educational attainment, when considering family size, family income, racial/ethnic group, and family structure?	Q: 1, 4, 5, 6, 8
3.	Is there a relationship between educational attainment and family size?	Q: 1, 4
4.	Is there a relationship between educational attainment and family income?	Q: 1, 2, 5
5.	Is there a relationship between educational attainment and family structure?	Q: 1, 6
6.	Is there a relationship between educational attainment and racial/ethnic group?	Q: 1, 8
7.	Is there a relationship between educational attainment and family structure for individuals from the Millennial generation?	Q: 1, 6, 9, 10
8.	Is there a relationship between educational attainment and family structure for individuals from Generation X?	Q: 1, 6, 9
9.	Is there a relationship between educational attainment and family structure for individuals from the Baby Boomer generation?	Q: 1, 6, 9
10.	Is there a difference in family structure acceptance rates for individuals from the Millennial, Generation X, and Baby Boomer generations?	Q: 3, 9

Reliability

Reliability of the survey instrument was tested through the pilot study. Reliability of the Likert scale survey question was calculated using Cronbach's alpha coefficient, which measures how closely a set of items are as a group. On a scale of 0 to 1.0, alpha coefficients with a .75 and above are considered reliable (see Table 6) (Holcomb, 2017). The survey yielded a high reliability score ($\alpha = .84$) (see Table 7).

Table 6

Cronbach's Alpha Scale of Internal Consistency

Cronbach's alpha	Internal consistency
$\alpha = 1.00$	Perfect
$.99 > \alpha \geq .75$	Very strong
$.74 > \alpha \geq .50$	Moderately strong
$.49 > \alpha \geq .25$	Moderate
$.24 > \alpha \geq .01$	Weak
$\alpha = 0.00$	No relationship

Table 7

Cronbach's Alpha Reliability Statistics

Cronbach's alpha	Cronbach's alpha based on standardized items	N of items
.836	.840	4

Procedures

Prior to beginning the final study, the researcher obtained permission to conduct the research through the Florida Southern College Institutional Review Board. Through a rigorous application process, documents were reviewed, modified, and later approved. Upon Institutional Review Board approval, permission to access the participants was obtained through completion of the off-campus permission letter, which was signed by the leader of the Polk County government agency. After submitting the off-campus

permission letter to the Institutional Review Board, the researcher began participant recruitment, and administered the survey.

After the survey was administered, a higher response rate was predicted for the final study as compared to the pilot study because multiple reminder emails were sent during the final three-week study. Multiple contacts occurred with participants based upon recommendations from Creswell and Creswell (2018) and Fowler (2014) stating multi-phase processes of contacting survey participants increases response rates.

Recruitment

Multiple forms of communication were used to recruit participants, including video streaming and email contact (see Table 8) (Dillman et al., 2014; Fowler, 2014). Multiple forms of communication appealed to participants who preferred visual or written communication, as well as providing multiple opportunities for the researcher to explain the purpose of the study to positively affect participant trust. Two forms of participant recruitment included an introductory video of the researcher and a follow-up email to all possible participants regarding the purpose of the study. Additional email communications included administration of the survey, continuous recruitment of participants twice a week through the three-week survey timeframe, and a final email stating the survey had been closed (see Appendix A). All in all, a total time commitment of 40 minutes was required of each participant, which allowed time to watch the recruitment video, read through follow-up recruitment materials, and complete the survey.

Table 8

Participant Recruitment Timeline

Form of communication	Title of communication	Occurrence	Day of the week
Week 1			
Video	Video script	Day 1 of 21 days	Wednesday
Email	Video follow-up	Day 1 of 21 days	Wednesday
Email	Start of the survey	Day 2 of 21 days	Thursday
Email	Continuous recruitment	Day 7 of 21 days	Tuesday
Week 2			
Email	Continuous recruitment	Day 9 of 21 days	Thursday
Email	Continuous recruitment	Day 14 of 21 days	Tuesday
Week 3			
Email	Continuous recruitment	Day 16 of 21 days	Thursday
Email	Continuous recruitment	Day 20 of 21 days	Monday
Email	End of the survey	Day 21 of 21 days	Tuesday

Another aspect of recruitment included ethical considerations. Recruitment occurred in an ethical manner, as demonstrated through verbiage in all recruitment materials. To reiterate, as the researcher was an employee of the Polk County government agency, the researcher did not, and had never, supervised or managed any staff at the agency. The researcher served a support role within the organization, thus, greatly eliminating opportunity for participants feeling obligated to participate in the study. Any concern of obligation or coercion was addressed in each step of administering of the survey, including the constant emphasis of "voluntary" and "anonymous" throughout the consent form, as well as throughout all participant recruitment materials.

Recruitment Contingency Plan

Due to the COVID-19 pandemic and unprecedented social distancing requirements, a contingency plan would have taken place in the case that the Polk County government agency offices were temporarily closed prior to or during the participant recruitment process. The backup plan was outlined to describe the process by which the

survey tool could have been distributed if participants did not have access to their agency email accounts during a temporary shutdown or other unforeseen circumstances (see Table 9). It was a necessary step of the methodology to include a contingency plan, as agency emails were the exclusive mechanism for distributing the survey to participants. The major change that would have taken place was replacing the recruitment video on day one with a document of the video script. The video script would have been posted to the agency's cloud-hosted intranet software the beginning of the first day, and the video follow-up would have been posted the end of the first day.

Table 9

Recruitment Contingency Plan

Form of communication	Title of communication	Occurrence	Day of the week
Week 1			
Intranet post	Video script	Day 1 of 21 days	Wednesday
Intranet post	Video follow-up	Day 1 of 21 days	Wednesday
Intranet post	Start of the survey	Day 2 of 21 days	Thursday
Intranet post	Continuous recruitment	Day 7 of 21 days	Tuesday
Week 2			
Intranet post	Continuous recruitment	Day 9 of 21 days	Thursday
Intranet post	Continuous recruitment	Day 14 of 21 days	Tuesday
Week 3			
Intranet post	Continuous recruitment	Day 16 of 21 days	Thursday
Intranet post	Continuous recruitment	Day 20 of 21 days	Monday
Intranet post	End of the survey	Day 21 of 21 days	Tuesday

The contingency plan was included in the off-campus permission letter that was signed by the Polk County government agency leader and submitted for approval to the Institutional Review Board. Instead of using video and email as forms of communication, recruitment communications would have included posts uploaded to the agency's cloud-hosted intranet software. The intranet software has already been used by the participants as an application on their smart phones, and the application would have been accessible

from participants' smart phones at any time of their choosing. If at any time during the contingency plan the Polk County government agency reopened their offices after a COVID-19 pandemic related shutdown, and agency emails were accessible, the initial participant recruitment timeline would have taken precedence, if the contingency plan had been put into place.

Data Collection Procedures

Participants who responded to the survey immediately completed their surveys in a quiet environment, as the government agency closed their lobbies to customers first thing in the morning for training purposes. Data was collected instantaneously as each survey was submitted. Data collection included anonymous electronic tracking of each participant's survey responses; however, only cumulative data was exported and analyzed for anonymity purposes. After the survey was closed, and all data had been collected electronically, the results were exported in SPSS format for data analysis onto the researcher's password-protected computer. All data on SurveyMonkey.com and SPSS remained anonymous, and participants were not identifiable in any way. Correspondingly, individuals who did not agree to participate in the survey did not have any data included in the results.

Timeline for Data Collection

Collecting data for this study followed a three-week timeline. In order to explain the purpose of the study, a video of the researcher was shown to potential participants, which included all of the Polk County government agency staff. A follow-up email summarizing the video was sent to all staff immediately following the video. On the following business day, an email containing the hyperlink to the survey was sent to the

entire staff at the Polk County government agency. The survey remained open for three weeks, and participants were sent reminder emails containing encouraging messages to participate throughout those three weeks (Creswell & Creswell, 2018; Fink, 2017).

Sampling Procedures

When taking the survey, an introduction page appeared first (see Appendix B). Participants were then directed to the informed consent form (see Appendix C), where participants accepted the terms of the form by clicking "ok" and proceeding with the survey (see Appendix D). The researcher ensured each participant understood the study was voluntary and free of coercion, by informing the participants that withdrawal was permitted prior to completing survey questions, and that participation was voluntary.

Validity and Reliability of Data Collection Processes

The data collection processes were structured to ensure design validity and reliability. In other words, the collection process gathered appropriate data that was accurate and complete in order to answer each research question. As shown in Table 5, which was reviewed by a panel of experts, each research question was aligned with specific survey questions in order to validate the data being collected (Weintraub, 2017). Design validity was reinforced through the early morning timing, and one-time frequency, of administering the survey.

Design-Based Decisions

Design-based decisions were made by following recommendations of Dillman et al. (2014), Fink (2017), and Fowler (2014) in the creation of the survey. These recommendations included ordering questions based on their relation to the study as well as the difficulty of the questions. Second, responses were required of all questions as each

question had great importance to the purpose of the study and were required for logistic regression. Furthermore, a progress bar was included, as shorter surveys with progress bars motivate participants to complete the entire survey. Lastly, the survey design greatly relied on consistency; therefore, the structure of each page within the survey had a similar appearance and replicable format.

Processes to Ensure Valid and Reliable Results

It was crucial for the results to be valid and reliable, in order to link the results of the study to the resource dilution theory and answer each research question. Validity is defined as accurately depicting participant information, whereas reliability is defined as the consistency of information (Fink, 2017). Results were valid and reliable as proper measures were put into place to ensure the protection and security of each participant's responses. For example, voluntary and anonymous participation was emphasized throughout the consent form, and within each recruitment document. Second, demographics of the Polk County government agency staff and Polk County residents had important similarities; therefore, the results were credible as the sample closely matched the characteristics of the greater population.

Furthermore, the data export from SurveyMonkey.com to SPSS ensured the validity and reliability of the results, as this export methodology removed the human error of accidents that could have occurred while manually entering data into SPSS. Exporting the data also assisted the researcher in maintaining the expectation of looking at results as a whole, instead of at an individual basis, as the export included all participant data.

Comparatively, valid and reliable results also depended on the ways in which survey questions were constructed. For example, the survey questions were written with participants in mind, including clearly written instructions and an appropriate readability level (Fink, 2017).

More specifically, the researcher improved the survey validity and reliability by eliminating research-specific terms from the survey. For example, the survey asked a question about family income levels, and the response options for this question were broken down for each generation of participant. In particular, instead of requiring the participant to recollect their family income at the time they were 17 years old, the survey displayed a chart containing the definition of low, middle, and high income for each generation (see Appendix D, question 5). The chart was constructed based upon a calculation from the Pew Research Center and data from the United States Census Bureau (Fry & Kochhar, 2018; United States Census Bureau, 1955, 1972, 1990, 2016). Using census data, middle income was calculated as two-thirds to two times the amount of the United States household median income. Low income was calculated as any dollar amount below the middle income range, and high income was any dollar amount above the calculated middle income range.

Data Analysis Procedures

The analysis of data occurred within IBM SPSS Statistics version 26 software, and the results were directly exported from SurveyMonkey.com in SPSS format. Data analysis included descriptive statistics as well as statistical tests, including logistic regression, chi-square of independence, and one-way between-groups ANOVA in order to answer each research question in a reliable and valid manner.

Data Analysis Plan

Analytical techniques were applied in the data analysis plan to code the quantitative data. The codebook used methodologies of Holcomb (2017) and Pallant (2016), where each survey variable was assigned a number and a measurement scale was assigned to each variable. Furthermore, a second portion of the codebook included variables where coding instructions separated responses into groups (such as separating nine educational attainment responses into two categories).

After data was coded in SPSS, descriptive statistics were first collected on all demographic survey data (Creswell & Creswell, 2018; Holcomb, 2017; Pallant, 2016). Next, each research question was analyzed using logistic regression, chi-square of independence, or the one-way between-groups ANOVA statistical tests (see Table 10). Logistic regression was particularly selected in order to find cross-relationships as well as the greatest independent variable predictor of the dependent variable, educational attainment. The results of the study are presented in figures and tables, and results are discussed from each statistical test.

Table 10

Data Analysis Plan for Research Questions

Statistical test	Research question
Logistic regression	1. Do family size, family income, and family structure predict the educational attainment of four-year college degrees? 2. What is the greatest predictor of educational attainment, when considering family size, family income, racial/ethnic group, and family structure?
Chi-square of independence	3. Is there a relationship between educational attainment and family size? 4. Is there a relationship between educational attainment and family income? 5. Is there a relationship between educational attainment and family structure? 6. Is there a relationship between educational attainment and racial/ethnic group? 7. Is there a relationship between educational attainment and family structure for individuals from the Millennial generation? 8. Is there a relationship between educational attainment and family structure for individuals from Generation X? 9. Is there a relationship between educational attainment and family structure for individuals from the Baby Boomer generation?
One-way between-groups ANOVA	10. Is there a difference in family structure acceptance rates for individuals from the Millennial, Generation X, and Baby Boomer generations?

Validity and Reliability of Instrument

Accurately testing the effect of family structure on educational attainment required the survey instrument to be valid and reliable. Reliability of the survey was calculated on one Likert scale survey question proceeding completion of the pilot study, where Cronbach's alpha coefficient measured high internal consistency ($\alpha = .84$). Additionally, all results were analyzed to confirm each data point was positive, and the number of cases matched the number of responses for each survey question (Pallant, 2016).

Validity of the survey was demonstrated through the similar survey questions and responses from the pilot study to the final study, and measurement validity was confirmed by the comprehensive readability level of the survey. Furthermore, measurement validity was affirmed due to the survey measuring what the researcher intended, based on aspects of resource dilution theory. Lastly, due to the demographic nature of the survey, internal reliability did not require as much focus due to the resource dilution theory heavily relying on demographic data such as family size, family income, and educational attainment.

Conclusion

In summary, this chapter presented the pilot study process, research design, rationale for the selected methodology, participant rationale, participant sampling procedures, and rationale for the selected research sites. Next, the survey instrument was described, along with the formation and reliability of the survey. Then, this chapter reviewed methodological procedures such as recruitment and data collection procedures. Specifically, the data collection procedures included a timeline, sampling procedures, validity and reliability of the data collection processes, and design-based decisions. Lastly, the processes to ensure valid and reliable results were explained through data analysis procedures, the data analysis plan, and the validity and reliability of the survey instrument.

This study used a cross-sectional quantitative research design to test the relationship between family structure and educational attainment, more specifically, by examining this relationship in regard to generational similarities and differences amongst participants. The researcher selected SurveyMonkey.com as the data collection platform

in the study, per the effective and secure collection of data during the pilot study. Furthermore, an electronic survey was selected as the instrument in this quantitative study in order to collect data in a uniform manner. The collection of uniform data improved the validity and reliability of results in order to analyze the effect of family structure on the attainment of four-year college degrees amongst individuals from different generations. Lastly, the survey was created by the researcher because preexisting surveys were unable to capture the specific variables needed to answer each research question. In summary, the study used an electronic survey, hosted on SurveyMonkey.com, which was created by the researcher to collect self-reported quantitative data in the most uniform way.

CHAPTER IV: RESULTS AND FINDINGS

Chapter 4 of this study presents the overall results, descriptive statistics, and individual results pertaining to each research question. The research design of this current quantitative research study included collection and analysis of anonymous survey data. Quantitative data was gathered through the use of a survey in order to collect concise, consistent, and timely responses from each participant (Dillman et al., 2014; Fink, 2017; Fowler, 2014), which improved the accuracy of the results and overall timeline of the study process. Participants in this study were those who provided their consent by reading an introduction to the survey, agreeing to the informed consent form, and completing the anonymous online survey. The quantitative results were based on a sample size (n = 209) of the entire staff at the Polk County government agency (N = 257). Although more surveys were received (n = 214), five surveys were removed from the quantitative results as four surveys were incomplete, and one survey did not fall within the three generational categories of Millennial, Generation X, or Baby Boomer. Therefore, the response rate was calculated using the number of participants (n = 209) divided by the total possible participants (N = 257), which came to an 81.3% response rate.

Results

Quantitative analyses of three statistical tests were applied to answer the 10 research questions. The first two research questions were analyzed through use of the logistic regression statistical tests, first addressing family size, family income, and family structure as predictive factors of the educational attainment of four-year college degrees, and next calculating the greatest predictor of educational attainment, when considering

family size, family income, family structure, and racial/ethnic group. The researcher used the logistic regression statistical test to answer the research questions for the full sample.

The researcher answered the next set of seven research questions through use of chi-square of independence statistical tests. These research questions studied relationships between variables, more specifically focusing on the effect of independent and intervening variables on the dependent variable which was the educational attainment of four-year college degrees. The set of seven research questions tested the relationships between educational attainment and family size, family income, family structure, and racial/ethnic group. Additionally, the researcher analyzed the relationship between educational attainment and family structure, independently, for each of the three generational categories of Millennials, Generation Xers, and Baby Boomers.

Lastly, the researcher answered the tenth research question with a one-way between-groups ANOVA statistical test. This research question examined differences in family structure acceptance rates for individuals from each generation of participants.

Descriptive Statistics

Survey results were collected anonymously from a total of 209 participants who responded to questions about their demographics, family background, education, and acceptance of family structures. The researcher chose to specifically analyze the descriptive statistics in great detail due to the relevance of each demographic variable to the resource dilution theory and to each research question. In addition, data collected from the surveys contained mostly demographic information, which is important to include in order to generalize the results to the greater population of Polk County. Each characteristic analyzed through descriptive statistics was further broken down so that the

generation of each participant was represented. It was important to analyze each demographic variable by generation, as the focus of the study was to compare such groups of participants.

Demographic Characteristics

First, descriptive statistics analyzed participants' demographic characteristics, specifically gender, racial/ethnic group, and generation (see Table 11). Related to gender, the participants were mostly female (82.3%) compared to males (17.7%). Millennials were 84.7% female, Generation Xers were 80.8% female, and Baby Boomers were 80.4% female. However, gender was not a major focus of this study or the resource dilution theory, and the proportion of females to males was not expected to be equivalent.

Table 11

Demographic Characteristics

Demographic characteristic	Millennials		Generation Xers		Baby Boomers		Full sample	
	n	%	*n*	%	*n*	%	*n*	%
Gender								
Female	72	84.7	59	80.8	41	80.4	172	82.3
Male	13	15.3	14	19.2	10	19.6	37	17.7
Other	0	0.0	0	0.0	0	0.0	0	0.0
Racial/ethnic group								
White or Caucasian	55	64.7	47	64.4	45	88.2	147	70.3
Hispanic or Latino	12	14.1	18	24.7	1	2.0	31	14.8
Black or African American	12	14.1	4	5.5	4	7.8	20	9.6
Asian or Asian American	4	4.7	2	2.7	0	0.0	6	2.9
American Indian or Alaska Native	0	0.0	0	0.0	0	0.0	0	0.0
Native Hawaiian or other Pacific Islander	0	0.0	0	0.0	0	0.0	0	0.0
Two or more races	2	2.4	1	1.4	0	0.0	3	1.4
Other	0	0.0	1	1.4	1	2.0	2	1.0
Generation								
Millennial							85	40.7
Generation Xer							73	34.9
Baby Boomer							51	24.4

The racial/ethnic group analysis of the participants demonstrated a diverse sample, as the participants were 70.3% White or Caucasian, 14.8% Hispanic or Latino, 9.6% Black or African American, and additional races/ethnicities included Asian or Asian Americans, two or more races, and other which altogether represented 5.3% of the participants (see Table 11). In comparing the sample population to the greater population of Polk County, Polk County residents were 75% White or Caucasian, 15% Black or African American, and 10% were other (see Table 3) (Office of Economic and Demographic Research, 2020).

Generation was the final demographic characteristic analyzed, which resulted in a representation of Millennials at 40.7%, Generation Xers at 34.9%, and Baby Boomers at 24.4% (see Table 11). Generation is a difficult metric when comparing the sample population to the entire population of Polk County, for example, the sample population does not include the Silent Generation or Generation Zers, whereas Polk County population data is typically gathered by age range and not by year of birth. However, for general purposes, 32% of Polk County residents are 15 to 39 years old, 18% are 40 to 54 years old, and 33% are 55 years of age or older (see Table 3) (United States Census Bureau, 2020b).

Family Background Characteristics

Second, descriptive statistics were used to analyze participants' family background characteristics of family size, family income, and family structure (see Table 12). Family background characteristics were collected from the participant's perception at the time they were 17 years old. Family size was collected incrementally, ranging from a rating of one which represented an only child, up to a rating of seven or more, which

represented a participant having six siblings or more living in the same household. The majority of participants had zero to three siblings (94.3%), and the minority had four or more siblings (5.7%). More specifically, the family size with the greatest proportion were participants with one sibling (36.4%). In analyzing family size by generation, Generation Xers had the greatest single child group at 26.0%, Millennials had the greatest group of a participants with one sibling at 40.0%, and again Millennials with two siblings at 27.1%. Overall, Baby Boomers came from the largest families, with family sizes of four or more representing 27.6% of Baby Boomers, compared to Millennials (13.0%) and Generation Xers (19.2%).

Table 12

Family Background Characteristics

Family background characteristic	Millennials		Generation Xers		Baby Boomers		Full sample	
	n	%	*n*	%	*n*	%	*n*	%
Family size								
1 (only child)	17	20.0	19	26.0	10	19.6	46	22.0
2	34	40.0	25	34.2	17	33.3	76	36.4
3	23	27.1	15	20.5	10	19.6	48	23.0
4	8	9.4	8	11.0	11	21.6	27	12.9
5	1	1.2	2	2.7	1	2.0	4	1.9
6	2	2.4	4	5.5	1	2.0	7	3.3
7 or more	0	0.0	0	0.0	1	2.0	1	0.5
Family income								
Low income	27	31.8	17	23.3	9	17.6	53	25.4
Middle income	55	64.7	49	67.1	30	58.8	134	64.1
High income	3	3.5	7	9.6	12	23.5	22	10.5
Family structure								
Traditional	45	52.9	47	64.4	37	72.5	129	61.7
Nontraditional	40	47.1	26	35.6	14	27.5	80	38.3
Married (same-sex)	0	0.0	0	0.0	0	0.0	0	0.0
Divorced or separated	22	25.9	14	19.2	5	9.8	41	19.6
Single	6	7.1	1	1.4	4	7.8	11	5.3
Cohabitating	2	2.4	1	1.4	0	0.0	3	1.4
Remarried	6	7.1	6	8.2	3	5.9	15	7.2
Other	4	4.7	4	5.5	2	3.9	10	4.8

Family income was collected from the categories of low, middle, and high. The majority of the full sample grew up in a middle-income household (64.1%), followed by low income (25.4%), and then high income (10.5%) (see Table 12). Millennials had the greatest proportion of low-income households (31.8%), Generation Xers had the greatest proportion of middle-income households (67.1%), and Baby Boomers had the greatest proportion of high-income households (23.5%). The data demonstrated that Millennial participants grew up in lower-income households, which was the contrary for Baby Boomer participants.

Family structure data collection was central to this study, and families were specifically classified as married (opposite sex), married (same-sex), divorced or separated, single, cohabitating, remarried, or other. All categories, other than married (opposite sex), were coded as nontraditional family structures. When focusing on nontraditional family structures for the full sample, divorced or separated family structures represented the greatest proportion at 19.6%, followed by remarried at 7.2%, single at 5.3%, other at 4.8%, and cohabitating at 1.4% (see Table 12). Divorced or separated and cohabitating family structures demonstrated an increasing trend over time. For instance, Millennials had the largest proportion of divorced or separated family structures (25.9%) compared to Generation Xers (19.2%) and Baby Boomers (9.8%). Millennials also had the largest proportion of cohabitating family structures (2.4%), compared to Generation Xers (1.4%) and Baby Boomers (0.0%).

When comparing descriptive statistics for traditional and nontraditional family structures, the majority of the full sample was traditionally structured (61.7%) compared to nontraditionally structured (38.3%) (see Table 12). These results differed from the Polk County population, as 48% of families were traditionally structured and 52% of families were nontraditionally structured (United States Census Bureau, 2018a). In this current study, the older a generation was, the greater the proportion of traditional family structures, and the younger a generation was, the greater the proportion of nontraditional family structures. For example, a larger proportion of Baby Boomers (72.5%) were from traditional family structures compared to Generation Xers (64.4%) and Millennials (52.9%). Also, only 27.5% of Baby Boomers were from nontraditional family structures compared to Generation Xers (35.6%) and Millennials (47.1%). Overall, there is an

approximate 20% difference between the proportion of Baby Boomers and Millennials who came from traditional and nontraditional family structures, and results were in line with literature, demonstrating an increase of nontraditional family structures with younger generations.

Educational Characteristics

Third, descriptive statistics were used to analyze participants' educational characteristics, which included educational attainment, use of tuition reimbursement, and Millennial's current enrollment in four-year colleges (see Table 13). Educational attainment was the dependent variable in this study, gathered through the survey by providing each participant a selection of nine response options, ranging from less than high school to a doctoral or professional degree. The largest proportion of the full sample had completed some college credit but not attained a college degree (26.8%), followed by high school graduates or GED completion (22.5%), and participants with a bachelor's degree (21.5%). Millennials mostly consisted of those with some college credit but no degree (29.4%) and had the greatest proportion of those having earned a bachelor's degree for their highest level of education (29.4%), compared to Generation Xers (15.1%) and Baby Boomers (17.6%). Furthermore, Generation Xers had the greatest proportion of associate's degrees (23.3%) and master's degrees (6.8%). Lastly, aligning with the literature review, Baby Boomers had the greatest overall proportion of individuals with lower levels of educational attainment, with 37.3% of participants having earned a high school diploma or less, compared to Generation Xers (19.2%) and Millennials (17.7%).

Table 13

Educational Characteristics

Educational characteristic	Millennials		Generation Xers		Baby Boomers		Full sample	
	n	%	*n*	%	*n*	%	*n*	%
Educational attainment								
Less than bachelor's degree	57	67.1	56	76.7	39	76.5	152	72.7
Less than high school	0	0.0	0	0.0	0	0.0	0	0.0
Some high school, no diploma	1	1.2	0	0.0	0	0.0	1	0.5
High school graduate or GED completed	14	16.5	14	19.2	19	37.3	47	22.5
Some college credit, but no degree	25	29.4	18	24.7	13	25.5	56	26.8
Completed a vocational, trade, or business school program	4	4.7	7	9.6	1	2.0	12	5.7
Associate's degree	13	15.3	17	23.3	6	11.8	36	17.2
Bachelor's degree or above	28	32.9	17	23.3	12	23.5	57	27.3
Bachelor's degree	25	29.4	11	15.1	9	17.6	45	21.5
Master's degree	2	2.4	5	6.8	1	2.0	8	3.8
Doctoral or professional degree	1	1.2	1	1.4	2	3.9	4	1.9
Tuition reimbursement towards bachelor's degree								
Yes	3	3.5	6	8.2	0	0.0	9	4.3
No	82	96.5	67	91.8	51	100.0	200	95.7
Current Millennial enrollment								
Not a bachelor's degree	84	98.8						
A vocational, trade, or business school program	2	2.4						
Associate's degree	2	2.4						
Not applicable	80	94.1						
Bachelor's degree	1	1.2						

Educational attainment levels were then combined into two categories, which included those with less than bachelor's degree and those with a bachelor's degree or higher (see Table 13). These major segmentations of the data were a large focus of the study, and key to the analysis of each research question. The majority of the full sample

had earned less than a bachelor's degree (72.7%) compared to having earned a bachelor's degree or higher (27.3%). This result was comparable to the population of Polk County as 20% of the population had earned bachelor's degrees or higher (see Table 3) (United States Census Bureau, 2019a). Overall, Millennials had the greatest proportion of higher education, with 32.9% of Millennials having earned as high as a bachelor's, master's, or doctoral degree, compared to Generation Xers (23.3%) and Baby Boomers (23.5%) (see Table 13). This was largely due to the high proportion of those with a bachelor's degree, as compared to a master's, professional, or doctoral degree. Generation Xers (76.7%) and Baby Boomers (76.5%) had the greatest proportions of individuals with less than a bachelor's degree compared to Millennials (67.1%).

The next educational characteristic, tuition reimbursement, was gathered to demonstrate if the reimbursement program was utilized by the participant to pay towards earning a bachelor's degree (see Table 13). A large portion of the full sample (95.7%) had never used tuition reimbursement toward a bachelor's degree compared to a select few (n = 9) who had used tuition reimbursement (4.3%). Specific to generation, only 3.5% of Millennials and 8.2% of Generation Xers used tuition reimbursement toward their bachelor's degrees. In conclusion, when calculating the proportion of individuals *with* a bachelor's degree or higher who accessed tuition reimbursement for a four-year degree, a small proportion of Millennials used tuition reimbursement towards their bachelor's degree (10.7%) compared to Generation Xers (35.3%).

The final educational characteristic gathered through this study was the current status of Millennial enrollment in higher education (see Table 13). The purpose of gathering this data was to collect information on how many Millennials were currently

enrolled in bachelor's degrees because Millennials under the age of 25 may not have had enough time to earn bachelor's degrees yet. The age of 25 was selected as population educational attainment data is gathered at age 25 and over. Only one Millennial under the age of 25 was currently enrolled in a bachelor's degree at the time, which demonstrated that results were not skewed by the current status of Millennial enrollment in higher education.

Family Structure Acceptance Rates

Lastly, descriptive statistics were used to analyze participants' acceptance rates regarding family structures (see Table 14). Participants were asked to rate their acceptance of family structures by responding to the statement, "It is acceptable and as good as any other arrangement for children to be raised by…" The 5-point Likert scale responses were reversed for coding purposes, and participants responded on their level of agreement by selecting as low as "1-Strongly Disagree" to as high as "5-Strongly Agree." The largest proportion of the full sample were more accepting of traditional family structures ($M = 4.74$) as compared to nontraditional family structures ($M = 3.74$). In particular, the full sample was least accepting of the nontraditional family structure "Married parents (same-sex: 2 males or 2 females)" ($M = 3.31$).

Table 14

Acceptance Rate Means and Standard Deviations

Family structure	Millennials	Generation Xers	Baby Boomers	Full sample	*p*
Traditional	4.71 (.83)	4.81 (.64)	4.71 (.73)	4.74 (.74)	.637
Nontraditional	3.94 (.99)	3.78 (1.11)	3.35 (.91)	3.74 (1.04)	.005
Married (same-sex)	3.67 (1.44)	3.34 (1.51)	2.67 (1.44)	3.31 (1.51)	.001
Cohabitating	3.94 (1.24)	3.81 (1.20)	3.37 (1.09)	3.76 (1.21)	.025
Single parent	3.95 (1.15)	3.84 (1.18)	3.53 (.97)	3.81 (1.13)	.102
Divorced or separated	3.92 (1.14)	3.67 (1.27)	3.37 (1.04)	3.70 (1.18)	.031
All family structures	4.01 (.92)	3.90 (.97)	3.53 (.81)	3.86 (.93)	.011

Note. Standard deviations are presented in parentheses.

The generation with the highest overall family structure acceptance rate was Millennials ($M = 4.01$), followed by Generation Xers ($M = 3.90$) and Baby Boomers ($M = 3.53$) (see Table 14). This trend continued specifically with each type of nontraditional family structure, where Millennials were the most accepting, followed by Generation Xers, then by Baby Boomers. On a generational level, the least accepted family structure remained to be "Married parents (same-sex: 2 males or 2 females)" and the highest accepted nontraditional family structure, for the full sample as well as for each generation, was single-parent families.

Research Questions

Prior to running statistical tests in SPSS, the researcher first tested the assumption of multicollinearity, which occurs if independent variables are highly related to each other. This would particularly be an issue for any analysis that included more than one independent variable. After analyzing collinearity diagnostics, the researcher concluded that the assumption of multicollinearity had not been violated because Tolerance values were greater than .1, and the Variance Inflation Factors were less than 10 for family size

(Tolerance = .979, VIF = 1.02), family income (Tolerance = .872, VIF = 1.15), family structure (Tolerance = .889, VIF = 1.12), and racial/ethnic group (Tolerance = .961, VIF = 1.04). Such Tolerance values and Variance Inflation Factors indicated the independent variables were not highly correlated.

Research Question 1

Research question number one tested the predictive relationship of family size, family income, and family structure on the educational attainment of four-year college degrees. Direct logistic regression was performed to assess the effect of a number of factors on the likelihood that participants would report they had attained bachelor's degrees or higher. The model contained three independent variables (family size, family income, and family structure). The full model containing all predictors was not statistically significant, χ^2 (4, n = 209) = 4.75, $p > .05$, indicating that the model was not able to distinguish between respondents who reported and did not report they had earned bachelor's degrees or higher. The model as a whole explained between 2.2% (Cox and Snell R square) and 3.3% (Nagelkerke R squared) of the variance in educational attainment, and correctly classified 72.7% of the cases. As shown in Table 15, none of the independent variables made a unique statistically significant contribution to the model. Although not statistically significant, high family income had the lowest p value of p = .20, recording an odds ratio of .40. As the odds ratio was less than 1, this indicated that participants who reported high family income were 60% less likely to report having earned a bachelor's degree or higher, controlling for other factors in the model. The variable with the second lowest p value of p = .24, although not statistically significant, was family structure with an odds ratio of .66. The odds ratio was less than 1, indicating

that participants who reported a nontraditional family structure were 34% less likely to report having earned a bachelor's degree or higher, controlling for other factors in the model.

Table 15

Logistic Regression Results for Research Question 1

Independent variable	B	S.E.	Wald	df	*p*	Odds ratio	95.0% C.I. for odds ratio	
							Lower	Upper
Family size	-.02	.13	.02	1	.89	.98	.77	1.26
Family income low			2.67	2	.26			
Family income middle	.14	.40	.13	1	.72	1.15	.53	2.50
Family income high	-.92	.72	1.62	1	.20	.40	.10	1.64
Family structure nontraditional	-.42	.35	1.41	1	.24	.66	.33	1.32
Constant	-.80	.53	2.33	1	.13	.45		

Research Question 2

Research question number two calculated the greatest predictor of educational attainment, when considering family size, family income, racial/ethnic group, and family structure. Direct logistic regression was performed to assess the effect of a number of factors on the likelihood that participants would report they had attained a bachelor's degree or higher. The model contained four independent variables (family size, family income, family structure, and racial/ethnic group). The full model containing all predictors was not statistically significant, χ^2 (7, n = 209) = 10.04, $p > .05$ indicating that the model was not able to distinguish between respondents who reported and did not report they had earned bachelor's degrees or higher. The model as a whole explained between 4.7% (Cox and Snell R square) and 6.8% (Nagelkerke R squared) of the variance in educational attainment, and correctly classified 74.2% of the cases. As shown in Table 16, only one of the independent variables approached a unique statistically

significant contribution to the model. Although not statistically significant, racial/ethnic group (other) had the lowest *p* value of $p = .06$, recording an odds ratio of 3.43. This indicated that participants who reported their racial/ethnic group as "Other" (Asian or Asian American, two or more races, and other) were three times more likely to have bachelor's degrees or higher than those who were not in the "Other" racial/ethnic group, controlling for all other factors in the model.

Table 16

Logistic Regression Results for Research Question 2

Independent variable	B	S.E.	Wald	df	*p*	Odds ratio	95.0% C.I. for odds ratio	
							Lower	Upper
Family size	-.04	.13	.09	1	.77	.96	.74	1.25
Family income low			2.21	2	.33			
Family income middle	.19	.41	.22	1	.64	1.21	.54	2.70
Family income high	-.76	.74	1.07	1	.30	.47	.11	1.97
Family structure nontraditional	-.37	.36	1.10	1	.30	.69	.34	1.39
Racial/ethnic group White/Caucasian			5.36	3	.15			
Racial/ethnic group Hispanic/Latino	-.12	.49	.06	1	.80	.89	.34	2.29
Racial/ethnic group Black/African American	.67	.51	1.76	1	.19	1.96	.73	5.27
Racial/ethnic group other	1.23	.65	3.59	1	.06	3.43	.96	12.30
Constant	-.95	.55	3.01	1	.08	.39		

Research Questions 3 through 6

Research questions three through six were analyzed with chi-square of independence statistical tests (see Table 17). To avoid the violation of assumptions for the chi-square of independence test, requirements determined which results would be presented. For example, if each variable had two categories each, the correction value of Yates' Correction for Continuity was analyzed. However, if either of the two variables

had more than two categories, the Pearson Chi-Square results was analyzed. Furthermore, assumptions could not be violated in regard to the frequency of responses per each variable's individual categories. Specifically, 80% of the cell frequencies were required to be five or more in any cell for the statistical purpose of ensuring the assumption of minimum expected cell frequency was not violated. Therefore, prior to running the chi-square of independence tests, a selection of variable categories for each of the variables family size, family structure, and racial/ethnic group were combined in order to eliminate the violation of such assumptions for the chi-square of independence tests.

Table 17

Chi-Square Results for Research Questions 3 through 6 (n = 209)

Independent variable	Yes bachelor's degree		No bachelor's degree		Total	$\chi^2(2)$	*p*	*phi*
	n	*%*	*n*	*%*	*n*			
Family size	57	27.27	152	72.73	209	2.41	.66	.11
1 (only child)	10	21.74	36	78.26	46			
2	22	28.95	54	71.05	76			
3	16	33.33	32	66.67	48			
4	7	25.93	20	74.07	27			
5 or more	2	16.67	10	83.33	12			
Family income	57	27.27	152	72.73	209	3.01	.22	.12
Low income	13	24.53	40	75.47	53			
Middle income	41	30.60	93	69.40	134			
High income	3	13.64	19	86.36	22			
Family Structure	57	27.27	152	72.73	209	1.12	.29	.08
Traditional	39	30.23	90	69.77	129			
Nontraditional	18	22.50	62	77.50	80			
Racial/ethnic group	57	27.27	152	72.73	209	6.68	.08	.18
White or Caucasian	36	24.49	111	75.51	147			
Hispanic or Latino	7	22.58	24	77.42	31			
Black or African American	8	40.00	12	60.00	20			
Other	6	54.55	5	45.45	11			

Research Question 3. Research question number three tested the relationship between educational attainment and family size. A chi-square of independence test indicated no statistically significant association between educational attainment and family size, χ^2 (4, n = 209) = 2.41, p = .66, *phi* = .11 (see Table 17). In this small sample, 31% of the participants who had one or two siblings had a bachelor's degree, while only 22% of only children and 23% of participants with more than two siblings earned a bachelor's degree or more. However, the relationship between educational attainment and family size was not statistically significant at the $p < .05$ level (df = 4), and the effect was small. Thus, there was not enough evidence to conclude if there was a relationship between educational attainment and family size.

As there were more than two categories in the family size variable, the correction value of Yates' Correction for Continuity could not have been used. Furthermore, the lowest frequency of any cell in a chi-square test for independence should be five or more, or at least 80% of the cells should have a frequency of five or more. Since the criteria for frequency could not be met for the family size categories of 5, 6, and "7 or more," these categories were combined, and a new category of "5 or more" was created prior to running the chi-square of independence test.

Research Question 4. Research question number four tested the relationship between educational attainment and family income. A chi-square of independence test indicated no statistically significant association between educational attainment and family income level, χ^2 (2, n = 209) = 3.01, p = .22, *phi* = .12 (see Table 17). In this small sample, 31% of the participants from middle income families had a bachelor's degree, while only 14% of high income and 25% of participants from low income families earned

a bachelor's degree or more. However, the relationship between educational attainment and family income level was not statistically significant at the $p < .05$ level ($df = 2$), and the effect was small. Thus, there was not enough evidence to conclude if there was a relationship between educational attainment and family income level. As there were more than two categories in the family size variable, the correction value of Yates' Correction for Continuity could not have been used.

Research Question 5. Research question number five tested the relationship between educational attainment and family structure. A chi-square of independence test (with Yates' Continuity Correction) indicated no statistically significant association between educational attainment and family structure, χ^2 (1, $n = 209$) = 1.12, $p = .29$, $phi = .08$ (see Table 17). In this small sample, 30% of the participants who came from traditional family structures had a bachelor's degree, while only 23% of participants from nontraditional family structures earned a bachelor's degree or more. However, the relationship between educational attainment and family structure was not statistically significant at the $p < .05$ level ($df = 1$), and the effect was small. Thus, there was not enough evidence to conclude if there was a relationship between educational attainment and family structure. The nontraditional family structures of "Married (same-sex)," "Divorced or Separated," "Single," "Cohabitating," "Remarried," and "Other" were combined, and a new category "Nontraditional" was created prior to running the chi-square of independence test.

Research Question 6. Research question number six tested the relationship between educational attainment and racial/ethnic group. A chi-square of independence test indicated no statistically significant association between educational attainment and

race/ethnicity, χ^2 (3, n = 209) = 6.68, p = .08, *phi* = .18, although the association did approach statistical significance (see Table 17). In this small sample, 55% of the participants who identified as "Other" for race/ethnicity had a bachelor's degree, while only 23% of "Hispanic or Latino," 24% of "White or Caucasian," and 40% of participants who identified as "Black or African American" earned a bachelor's degree or more. However, the relationship between educational attainment and race/ethnicity was not statistically significant at the $p < .05$ level ($df = 3$), and the effect was small. Thus, there was not enough evidence to conclude if there was a relationship between educational attainment and race/ethnicity.

As there were more than two categories in the race/ethnicity variable, the correction value of Yates' Correction for Continuity could not have been used. Furthermore, the lowest frequency of any cell in a chi-square test for independence should be five or more, or at least 80% of the cells should have a frequency of five or more. Since the criteria for frequency could not be met for the race/ethnicity categories of "Asian or Asian American," "Two or More Races," and "Other," these categories were combined into the existing category of "Other" prior to running the chi-square of independence test. The categories of "American Indian or Alaska Native," and "Native Hawaiian or other Pacific Islander" had zero responses and were not present in the analysis.

Research Questions 7 through 9

The Fisher's Exact Probability Test was used for statistical analyses of research questions seven, eight, and nine due to violated assumptions of the chi-square of independence tests (see Table 18). More specifically, tables with two variables that each

contained two categories were expected to have a frequency of at least 10 for any cell. Due to the results of each question producing at least one cell with a frequency less than 10, the Fisher's Exact Probability Test was reported. Furthermore, the nontraditional family structures of "Married (same-sex)," "Divorced or Separated," "Single," "Cohabitating," "Remarried," and "Other" were combined under a new category "Nontraditional" for clearer analysis of traditional and nontraditional family structures prior to running the chi-square of independence tests. Lastly, to avoid another violation of assumptions for the chi-square of independence test, requirements determined that because each variable had two categories, the correction value of Yates' Correction for Continuity was analyzed.

Table 18

Chi-Square Results for Research Questions 7 through 9 (n = 209)

Independent variable	Yes bachelor's degree		No bachelor's degree		Total	$\chi^2(2)$	*p*	*phi*
	n	*%*	*n*	*%*	*n*			
Millennials	28	32.94	57	67.06	85	2.89	.07	-.21
Traditional	19	42.22	26	57.78	45			
Nontraditional	9	22.50	31	77.50	40			
Generation Xers	17	23.29	56	76.71	73	.81	.27	-.14
Traditional	13	27.66	34	72.34	47			
Nontraditional	4	15.38	22	84.62	26			
Baby Boomers	12	23.53	39	76.47	51	.80	.27	.18
Traditional	7	18.92	30	81.08	37			
Nontraditional	5	35.71	9	64.29	14			
Full Sample	57	27.27	152	72.73	209	1.12	.26	-.08
Traditional	39	30.23	90	69.77	129			
Nontraditional	18	22.50	62	77.50	80			

Research Question 7. Research question number seven tested the relationship between educational attainment and family structure for individuals from the Millennial generation. A chi-square of independence test (with Yates' Continuity Correction and

Fisher's 2-sided Exact Probability Test) indicated no statistically significant association between educational attainment and family structure for individuals from the Millennial generation, χ^2 (1, n = 85) = 2.89, p = .07, *phi* = -.21, although the result did approach statistical significance (see Table 18). In this small sample, 42% of the Millennial participants from traditional family structures had a bachelor's degree, while only 23% of Millennial participants from nontraditional family structures earned a bachelor's degree or more. However, the relationship between educational attainment and family structure for individuals from the Millennial generation was not statistically significant at the $p <$ .05 level and the effect was small. Thus, there was not enough evidence to conclude if there was a relationship between educational attainment and family structure for the Millennial generation.

Research Question 8. Research question number eight tested the relationship between educational attainment and family structure for individuals from the Generation X generation. A chi-square of independence test (with Yates' Continuity Correction and Fisher's 2-sided Exact Probability Test) indicated no statistically significant association between educational attainment and family structure for individuals from Generation X, χ^2 (1, n = 73) = .81, p = .27, *phi* = -.14 (see Table 18). In this small sample, 28% of the Generation X participants from traditional family structures had a bachelor's degree, while only 15% of Generation X participants from nontraditional family structures earned a bachelor's degree or more. However, the relationship between educational attainment and family structure for individuals from Generation X was not statistically significant at the $p <$ .05 level and the effect was small. Thus, there was not enough evidence to

conclude if there was a relationship between educational attainment and family structure for the Generation X generation.

Research Question 9. Research question number nine tested the relationship between educational attainment and family structure for individuals from the Baby Boomer generation. A chi-square of independence test (with Yates' Continuity Correction and Fisher's 2-sided Exact Probability Test) indicated no statistically significant association between educational attainment and family structure for individuals from the Baby Boomer generation, χ^2 (1, n = 51) = .80, p = .27, *phi* = .18 (see Table 18). In this small sample, 36% of the Baby Boomer participants from nontraditional family structures had a bachelor's degree, while only 19% of Baby Boomer participants from traditional family structures earned a bachelor's degree or more. However, the relationship between educational attainment and family structure for individuals from the Baby Boomer generation was not statistically significant at the $p <$ .05 level and the effect was small. Thus, there was not enough evidence to conclude if there was a relationship between educational attainment and family structure for the Baby Boomer generation.

Research Question 10

Research question number 10 tested the difference in family structure acceptance rates for individuals from the Millennial, Generation X, and Baby Boomer generations. A one-way between-groups ANOVA was conducted to explore the effect of participant generation on the rate of family structure acceptance (see Table 14). Family structure acceptance was reported on a 5-point Likert scale on which lower rates represented less acceptance, after responses were reversed for coding purposes. Participants were divided

into three groups according to their generation (Millennials: 1981-current; Generation Xers: 1965-1980; Baby Boomers: 1946-1964). There was a statistically significant difference at the $p < .05$ level in family structure acceptance rates for the three generation groups: $F(2, 206) = 4.6$, $p = .011$. Despite reaching statistical significance, the actual difference in mean rates between the groups was small. The mean rates for each generation included Millennials with the highest mean rate of acceptance ($M = 4.01$, $SD = .92$), Generation Xers ($M = 3.90$, $SD = .97$), and Baby Boomers with the lowest mean rate of acceptance ($M = 3.53$, $SD = .81$). The effect size, calculated using eta squared, was .04. Post-hoc comparisons using the Tukey HSD Test indicated that the mean rate for Millennials was significantly different from Baby Boomers ($p = .009$ for $p < .05$), and Generation Xers did not differ significantly from either Millennials or Baby Boomers.

Conclusion

In summary, results reported in this chapter presented descriptive statistics for participant demographics, family background characteristics, educational characteristics, and family structure acceptance rates. This chapter also described the statistical results and analysis for each of the 10 research questions. In regard to research questions one and two, the data did not find statistical significance with family size, family income, family structure, or racial/ethnic group predicting educational attainment for the full sample. In analyzing research questions three through six, the data did not find statistical significance between educational attainment and family size, family income, family structure, or racial/ethnic group for the full sample. The relationship between educational attainment and racial/ethnic group approached statistical significance in research questions two and six. The data also did not find statistical significance between

educational attainment and family structure on a generational level for research questions seven through nine. The relationship between educational attainment and family structure for Millennials approached statistical significance in research question seven. There was statistical significance in the difference between family structure acceptance rates for the three generation groups in research question 10; however, the difference in mean rates between the groups was small. In contrast, post-hoc comparisons revealed a significant difference between the mean rates for Millennials and Baby Boomers.

CHAPTER V: DISCUSSION

Chapter 5 presents a summary of the study, which includes a review of the background, resource dilution theory, methodology, and research questions. Next, this section includes key findings and conclusions, limitations, implications and recommendations for future research, and implications and recommendations for education. Lastly, concluding remarks are presented.

Summary

Resource dilution theory states that the more children there are in a family, the more diluted the family resources become, thus negatively affecting the educational outcomes for each child (Black et al., 2005; Blake, 1967, 1981, 1989; Downey, 1995, 2001; Steelman & Powell, 1989). In addition, family structure has an effect on family resources in regard to family income and family size. As a result, nontraditional family structures, such as families with divorced parents, have historically had a negative effect on educational attainment coupled with the dilution of family resources (Biblarz & Raftery, 1999; Demir-Dagdaset al., 2018; Fagan & Churchill, 2012; Wojtkiewicz & Holtzman, 2011). As applied to this study, the resource dilution theory provided a viewpoint that family structure, through the mediating variables of family income and family size, may influence the educational attainment of four-year college degrees.

Overall, only 47% of children remain in traditional households with married parents by the time they turn 17 years old (Fagan & Churchill, 2012). Specifically, 36% of individuals from traditional family structures earn a bachelor's degree as compared to less than 20% from nontraditional family structures. Educational attainment has been studied since before the mid-1900s (Blake, 1967). It is crucial to understand the

underlying factors that affect educational attainment of four-year college degrees in America in order to make improvements to the educational system as well as to inform society how to better prepare families to battle against the odds of low educational attainment. In addition, previous research has shown that college graduates earn twice as much income as high school graduates (Alonzo, 2017), and that Millennials with college degrees not only have higher incomes than high school graduates, but Millennials with college degrees also exhibit higher job satisfaction, higher career attainment, and higher well-being (Pew Research Center, 2014).

Although the effect of family structure on the attainment of four-year college degrees has been studied and shown that nontraditional family structures have a negative effect, the change of effect over time has not been studied. Specifically, nontraditional family structures have higher rates of acceptance and are more prevalent in society than ever before (Fagan & Churchill, 2012; Gurrentz, 2019; Pagnini & Rindfuss, 1993; Stevenson & Wolfers, 2007; Thornton & Young-DeMarco, 2001), which increases the relevancy of family structure research. Therefore, research was needed in this area of study to determine whether the societal definition of family structure shifting from traditional structures, to include nontraditional structures, had an effect on educational attainment in regard to the resource dilution theory.

The researcher conducted a pilot study, prior to initiating the current study, and the survey instrument was determined to be valid and reliable. In addition, the pilot study assisted with evaluating the format of the survey in regard to the order of questions and verbiage, so that data was most accurately gathered in order to link results to the resource dilution theory. The pilot study also assisted the researcher in collecting valuable input on

survey improvements that enhanced the survey instrument for the final study. The purpose of the current quantitative study was to test how family structure affected educational attainment across generations of students and to link results to the resource dilution theory through a cross-sectional anonymous survey.

Quantitative analyses were carried out in order to answer each of 10 research questions. The first two research questions addressed if family size, family income, and family structure predicted the educational attainment of four-year college degrees and next calculated the greatest predictor of educational attainment, when considering family size, family income, family structure, and racial/ethnic group. These research questions specifically tested the resource dilution theory. Next, the following set of seven research questions tested the relationship between educational attainment and family size, family income, family structure, and racial/ethnic group. Furthermore, the researcher analyzed the relationship between educational attainment and family structure, independently, for each of the three generational categories which included Millennials, Generation Xers, and Baby Boomers. Lastly, the tenth research question analyzed differences in family structure acceptance rates for individuals from each generation of participants.

The current study analyzed the effect of family structure on the educational attainment of four-year college degrees for individuals from the Millennial, Generation X, and Baby Boomer generations through statistical analysis of a 10-question survey from a total of 209 participants from a Polk County government agency. Over a time frame of three weeks, participants were recruited, and survey responses were collected anonymously through SurveyMonkey.com. Every employee at the Polk County

government agency had the opportunity to participate in the current study, and participants were defined as those who completed the online survey.

The research design of this quantitative study included the researcher composing the survey, testing the reliability and validity of the survey through a pilot study, and concluding with the collection and statistical analysis of anonymous survey data. More specifically, data analysis first included the coding of survey results, followed by the use of IBM SPSS Statistics version 26 software to run statistical tests on each research question. Statistical tests were conducted in order to test for predictive variables in the resource dilution theory, relationships between independent variables and educational attainment, as well as the difference between family structure acceptance rates for Millennials, Generation Xers, and Baby Boomers.

Key Findings and Conclusions

Research Question 1

There was no predictive relationship of family size, family income, and family structure on educational attainment of four-year college degrees in this study. Although the strongest predictor of educational attainment has been family income in previous research, the current study could not distinguish between respondents who reported and did not report they had earned bachelor's degrees or higher. Specific to the current study, the strongest predictive relationship of educational attainment and family size, family income, and family structure, although not statistically significant, was family income, followed by family structure, when other variables were controlled.

This finding was consistent with other research, in the manner that family income was the strongest predictor. For example, previous studies found that family income was

consistently one of the best predictors of educational attainment (Kao & Thompson, 2003; Vartanian et al., 2007). On the other hand, this finding of the current study was not consistent with previous research as the predictive relationship was not found to be statistically significant. It is possible that there are stronger predictive variables for the educational attainment of four-year college degrees requiring further exploration.

Research Question 2

The greatest predictor of educational attainment, when considering family size, family income, racial/ethnic group, and family structure was racial/ethnic group. Racial/ethnic group was the greatest predictor, even though family income has been indicated as the greatest predictor in previous research, and racial/ethnic group was not a major variable in resource dilution research. In particular, none of the four predictors were statistically significant, although racial/ethnic group did approach statistical significance. The racial/ethnic group with the strongest predictive characteristic was "Other." This meant that individuals who identified as "Asian or Asian American," "Two or More Races," or "Other" were more likely to have four-year college degrees than individuals who identified as "White or Caucasian," "Hispanic or Latino," and "Black or African American."

This finding was not consistent with previous research on family income, as studies found that family income was one of the best predictors of educational attainment (Kao & Thompson, 2003; Vartanian et al., 2007). Furthermore, previous research stated when family income or parental SES were controlled for, educational attainment levels were mostly comparable between racial or ethnic groups (Kao & Thompson, 2003; Perna, 2000). This previous research was specifically inconsistent with the results of the current

study because racial/ethnic group was the only independent variable in the current study that approached statistical significance in a predictive relationship with educational attainment. With that being said, it is possible that racial/ethnic group is more predictive of educational attainment than family size, family income, and family structure.

Research Questions 3 through 6

There was no relationship found between educational attainment and family size, family income, family structure, or racial/ethnic group, although racial/ethnic group did approach statistical significance ($p = .08$) and had the lowest p-value of the tested variables. Although research states that family income, family size (Black et al., 2005; Blake, 1967, 1981, 1989; Downey, 1995, 2001; Steelman & Powell, 1989), family structure (Biblarz & Raftery, 1999; Demir-Dagdas et al., 2018; Fagan & Churchill, 2012; Wojtkiewicz & Holtzman, 2011), and racial/ethnic group (Kao & Thompson, 2003) affect the educational outcomes for students, no statistically significant relationships were found in this study between educational attainment and the four tested independent variables. Specific to the current study, the category for each variable with the greatest proportion of four-year college degree attainment included 31% of participants with one to two siblings, 31% of participants from middle-income households, 30% of participants from traditional family structures, and 55% of participants who identified as "Other" racial/ethnic group. Interestingly, when additionally considering the descriptive statistics, Millennials reported a larger proportion of middle to low family incomes, nontraditionally structured families (see Table 12), and higher education levels (see Table 13) when compared to Generation Xers and Baby Boomers.

These findings were not consistent with other research on family size, family income, family structure, or racial/ethnic group. Specific to family size and family income, the resource dilution theory stated that the more children there were in a family, the more diluted the family resources became, thus negatively affecting the educational outcomes for each child (Black et al., 2005; Blake, 1967, 1981, 1989; Downey, 1995, 2001; Steelman & Powell, 1989). In regard to family structure, research found that nontraditional family structures have historically negatively affected the educational attainment of children in those families (Amato, 2010; Biblarz & Raftery, 1999; Demir-Dagdas et al., 2018; Devor, 2014; Fagan & Churchill, 2012; Schmierer, 2011; Wojtkiewicz & Holtzman, 2011). Lastly, in previous research, racial/ethnic group was found to have a relationship with educational attainment particularly between "advantaged groups" which included White and Asian students, and "less advantaged groups" which included African American, Hispanic, and Native American students (Kao & Thompson, 2003).

In regard to racial/ethnic group research, the current study found the relationship between educational attainment and racial/ethnic group to approach statistical significance when family-related factors were controlled for, compared to previous research which found that educational attainment was instead consistent amongst racial/ethnic groups when family income and parental SES were controlled for (Kao & Thompson, 2003; Perna, 2000). In addition, family income and parental education have been the best predictors of educational attainment when compared to focusing strictly on racial or ethnic groups (Kao & Thompson, 2003; Vartanian et al., 2007). Lastly, gaps in educational attainment amongst racial or ethnic groups have become more narrow (Kao

& Thompson, 2003), demonstrating a decreasing relationship between racial/ethnic group and educational attainment.

It is possible that other barriers to educational attainment exist that need further exploration other than family size, family income, family structure, and racial/ethnic group on a generational level. These other barriers can be segmented by generation of participant and may include previously researched variables of K-12 average years of education, GPA, standardized achievement test scores, grades, cognitive skills, and academic achievements (Amato, 2010; Benner et al., 2016; Blake, 1989; Downey, 1995, 2001; Fagan & Churchill, 2012; Teachman, 1987; Travis & Kohli, 1995).

Research Questions 7 through 9

There was no relationship found between educational attainment and family structure for Millennials, Generation Xers, or Baby Boomers, although Millennials did approach statistical significance ($p = .07$) and had the lowest p-value of the three generation groups. Even though the proportion of nontraditionally structured families in the United States has increased with each generation and are most present in the Millennial generation, no statistically significant relationships were found with any of the generations. It is interesting to note, however not statistically significant, that in this small sample Millennials ($n = 19$) and Generation Xers ($n = 13$) were each more likely to have four-year college degrees when they came from traditionally structured families with a married mother and father.

Previous research has not investigated the generational differences between Millennials, Generation Xers, and Baby Boomers in the effect of family structure on the educational attainment of four-year college degrees. Instead, research has focused on the

age of participant (regardless of generation) or average years of K-12 education. Although the current study did not find statistical significance when analyzing the generations of participants, Millennials had the lowest *p*-value, indicating there was stronger evidence of a relationship between educational attainment and family structure with Millennials as compared to Generation Xers and Baby Boomers, meaning that family structure could have more of an effect on educational attainment of Millennials.

Research Question 10

There was a statistical difference, although small, in the difference between family structure acceptance rates for individuals from the Millennial, Generation X, and Baby Boomer generations. Specifically, there was a significant difference between the acceptance rates for Millennials ($M = 4.01$) and Baby Boomers ($M = 3.53$). This result demonstrated that Millennials of this current study were more accepting of different family structures than Baby Boomers. Furthermore, Millennials also rated their acceptance of nontraditional family structures higher than Generation Xers and Baby Boomers. For all family structures combined, as well as for individual types of family structures, Millennials had the highest acceptance rates, and Baby Boomers had the lowest acceptance rates.

This finding was consistent with other research on family structure acceptance rates by generation. For example, the Pew Research Center (2010) conducted a study, asking participants how they would define a family based on types of living arrangements or family structures. Demographic differences were particularly present amongst nontraditional living arrangements, where each generation rated unmarried, same-sex, and single-parent families lower than traditionally structured families with a married

mother and father. Furthermore, younger individuals in the Pew Research Center study were more accepting of nontraditional family structures as compared to older individuals. Specifically, individuals aged 18 through 29 rated single-parent families with an 88% acceptance rate and same-sex parent families with an 80% acceptance rate, as compared to individuals over the age of 65 with an acceptance rate of 68% for single-parent families and 37% for same-sex parent families.

Limitations

Limitations existed within the study, and those potential threats to the integrity of the study were minimized. It is the researcher's hope that this current study will be a starting seed for larger scale studies. First, the participants were limited to staff employed at a government agency in Polk County, Florida, and it is recommended that future studies include a larger and more diverse sample of participants and a variety of public or private workplace agencies. Including multiple workplace agencies, public or private, would provide a greater sample of the county population.

Second, the regional research site was geographically limited to the area of Polk County, Florida, in order to address the low educational attainment rate as compared to state and national statistics (United States Census Bureau, 2018b). Limited geographical studies are typical and acceptable in the educational research climate so that districts or counties may be studied on a smaller scale. It is recommended when studying smaller geographical areas, it may benefit future studies to research the regional cultural makeup, as to whether the region is mostly agricultural or industrial for example, in order to test implications these cultural makeups may have on educational attainment. However, future research may replicate this current study in surrounding counties to broaden the

scope of the geographical location and gain larger sample sizes for large scale studies. In comparison, larger geographical areas may be used to identify areas of need within a state, such as comparing results from the top five or 10 counties with the lowest educational attainment rates, or dividing a state into non-homogenous regions such as the northern, southern, central, east coast, and west coast regions of Florida to analyze similarities and differences in predictive factors of educational attainment. Additionally, the research site was geographically limited to the United States, as foreign educational systems vary from one county to another. However, there are foreign educational systems with similarities to the United States' that may provide additional insight into this issue on a global level.

Third, the central phenomenon was limited to employed individuals. The study excluded those who were experiencing unemployment; however, the purpose of this current study was to focus on factors influencing collegiate educational attainment, as educational attainment assists individuals in earning higher incomes with elevated job positions. The researcher recognizes the exclusion of individuals experiencing unemployment as a limitation, as these individuals are also affected by resource dilution. Future studies may opt to gather a sample of participants that additionally mimic the population demographics through the replication of the population unemployment rate within the sample.

Fourth, the definition of family size was limited to the number of siblings belonging to one or both parents living in the same household. However, the study excluded other dependents who may have been the financial responsibility of the participant's parents while living in the same household. For example, the exclusion of

other dependents did not account for the sandwich generation, where three generations of individuals live in one household, while the middle generation is financially responsible for their children as well as their parents. Other dependents may have been excluded from family size as well, such as other family members who lived in the same household as the participant. Furthermore, children who were financially supported by one or both parents of the participant's household, but lived elsewhere, were not accounted for in family size. This may include older dependent siblings who are away at college or elsewhere, as well as children from previous marriages. For example, one parent may pay child support for children living with their other parent or other family members. In regard to this current study, although these children could have been financially supported by the participants' households, they were not included in family size since the children did not live in the same households as the participants. It is recommended that future studies elect to include dependents who live in the same household as the participant or are financially dependent while living elsewhere. This data would capture sibling size, as well as financially dependent family members. More specifically, asking additional questions about family size is recommended as follows: the number of siblings living in the same household, the number of dependents (other than siblings) living in the same household, and the number of dependents living outside of the household.

Fifth, analyzing family income as the primary type of resource in this study was a limitation. Other types of tangible and intangible resources may be considered in future research, in addition to family income. Types of tangible resources might include access to educational materials, such as books and electronic devices, a place to study, or access to the internet. Intangible resources might include parental time, support, or energy, and

cultural capital and wealth. Overall, not all potential effects on family resources could have possibly been covered in this study, and it is recommended future studies focus on additional or other types of tangible or intangible family resources.

Sixth, the study was limited in the way family structure was studied. This current study focused on traditional and nontraditional family structures, which compared participants of a married male and female parent to participants of all other family structures. However, the idea of studying a two-parent family structure as compared to a one-parent family structure may also be of interest. This would then group the following family structures under the two-parent category: married (opposite sex), married (same-sex), cohabitating, and remarried. Grouping family structures into one and two-parent family structures would more broadly look into the effect of single-parent family structures on educational attainment. Overall, considering two-parent and one-parent family structures, in addition to traditional and nontraditional family structures, would add to the body of literature. Furthermore, future studies may also benefit from comparing participants from households with married family structures (opposite sex and same-sex) to all other family structures. This would allow further research to analyze the broader effect of marriage on educational attainment, as compared to traditional and nontraditional. Overall, it is recommended that future research not only analyze traditional and nontraditional family structures, but also compare two-parent family structures to one-parent family structures, as well as married family structures to non-married family structures.

Seventh, a limitation of the current study was the lack of analysis focusing on the effect of tuition reimbursement at the Polk County government agency. Participants, as

employees of the agency, had the capability to further their education through employment provided tuition. Eligibility requirements of the tuition reimbursement program included coursework that enhanced the knowledge, skills, and abilities related to work duties as well as prepared participants for future career advancement. It is recommended that future research isolate participant responses where tuition reimbursement was provided toward four-year college degrees, in order to analyze the isolated effect of tuition reimbursement, as well as a combined effect of tuition reimbursement and family structure, on educational attainment.

Lastly, the population sample was mostly female (82.3%) as gender was not a variable of focus in this current study, nor in the broad setting of the resource dilution theory. On the other hand, future studies are recommended to analyze gender differences within the resource dilution theory on a generational level. This is important to research, historically speaking, as each generational group had a differing proportion of females in the workforce alongside a differing necessity of females to possess four-year college degrees. Furthermore, with the American female population having entered the workforce later than the American male population, lower educational attainment may be more prominent with female participants of particular generations, rather than male participants.

Implications and Recommendations

Implications may be drawn from this current study, based upon the results of each research question. More specifically, overarching recommendations are presented for future research, as well as for educational settings.

Future Research Implications and Recommendations

The implications of this current study may change as Generation Z students enter the workforce and once the birthdate range of Generation Z is more defined. Members of Generation Z will have more experience with nontraditional family structures and family structure may demonstrate more of an effect, either way, on their educational attainment. Although it is premature to include Generation Z participants in this current study, the researcher recommends future research add Generation Zers in order to compare results amongst four generations to allow for improved trend analysis: Generation Zers, Millennials, Generation Xers, and Baby Boomers.

The effect that changes in family structures, like divorce or separation, have on students is an implication that can be further explored in future research. For instance, divorce affects children differently (Demir-Dagdas et al., 2018; Fagan & Churchill, 2012; Stevenson & Wolfers, 2007), depending on many factors such as the age of the child when divorce occurred, relationships that were maintained after the divorce, as well as if the divorce was considered "happy." For example, instead of parents combating each other after a divorce, did they both work toward the common goal of raising successful children despite the divorce? Future research may dive deeper into the analysis on how *changes* in family structure, such as divorce or separation, personally affect each participant. It may be beneficial to add survey questions about divorce, separation, or break-ups of the participant's parents. These questions may include asking the age of the participant when their family structure changed, whether or not they perceived their family structure change as "happy," as well as open-ended questions. Open-ended questions may ask for the participant's point-of-view on how their change in family

structure affected their educational journey and, more specifically, how their educational attainment of a four-year college degree was affected. This additional data, recommended for future research, has the potential to broaden the scope of this current study to incorporate the *change* of family structure during a child's life and the effect of family structure changes on educational attainment.

Further exploring the implication that changes in family structure during a child's lifetime has on educational attainment, it is also important to consider changes in family structure that occurred prior to the birth of the child. Specifically, future research could inquire about previous relationships the students' parents might have had to discover if those relationships resulted in dependent children needing financial support. Capturing the element of changes in family structure prior to, and during, a student's educational journey may assist with analyzing additional effects of family structure on educational attainment as well as additional dilution of family resources. On the other hand, as results pertaining to the effect of family structure on educational attainment were not statistically significant in this current study, family structure may not be that significant, and other variables such as family resources may be more beneficial to study.

In regard to family resources, family income was the variable collected for this current study as perceived by the participant at 17-years of age. Implications may be drawn that perceived family income level, as collected by the survey, could have inaccuracies. Therefore, it is recommended that future research ask for a specific dollar amount when asking participants to recall their family income, if possible, as well as the participant birth year. Collecting this data would involve additional analysis, as the present value of each participant's family income will need to be calculated through the

use of an inflation calculator. Focusing on income as the family resource, this information may improve the accuracy of family income reporting.

Although family income is a variable that is proven to affect educational attainment, future research may also take into consideration who financially supported the participant to attend college and who lived in their home. First, participants may be the financial responsibility of their parents; however, there are situations where participants attend college as an attribution of other financial sources, such as their own employment, financial support from grandparents or other family members, tuition reimbursement, student loans, as well as scholarships, such as Bright Futures in the state of Florida. Family income affects educational attainment through resource dilution; however, it is important to consider other sources of funding that made it possible for participants to attend college. Second, participant's college education may be financially supported by one or both of their parents with whom they may or may not live. Family income may need to be collected for the parent who specifically funded the participant's college education. Third, resources could further dilute if additional dependents lived in the participants' homes, such as grandparents or other dependents. Collecting information on dependents in participants' homes could capture the additional dilution of resources, caused by the combined household size to include parents, siblings, and dependents. Overall, it is recommended that future research collect additional participant information: who financially supported the participant to attend college, who the participant lived with prior to attending college, and how many financially dependent individuals lived in the same household as the participant including siblings and additional household dependents. Implementing these recommendations in future studies would strengthen the

literature by shifting from a focus on family size, to a new focus on household size, while incorporating financial sources and support.

Taking a closer look into sibling life could also benefit future studies, meaning the incorporation of sibship size, sibling spacing, sex composition, or birth order. Sibship size is the number of siblings belonging to the same biological mother and father, and sibling spacing is the amount of time that elapsed between the birth of each sibling. Sex composition focuses on the proportion of female siblings compared to male siblings in a family, and birth order accounts for when the participant was born, ranging from first born to last born. Sibship size, sibling spacing, sex composition, and birth spacing were not a major focus of this current study as these sibling characteristics are finer points in the resource dilution theory. Even though robust research exists in each of these focused areas for sibling studies, adding these variables to studies that incorporate family size, family income, and family structure would add depth to this area of research.

Lastly, future research can integrate qualitative elements in order to create a mixed methods research design, as compared to this current quantitative research design. Specifically, adding open-ended questions to the survey would add breadth to the quantitative survey responses, such as collecting details about family size and household dynamics. Family size details may assist the researcher with understanding the household situation when the participant was 17 years old. This information may shed light into the household dynamics of the parent or parents at the time, as well as provide the researcher with information describing financially dependent individuals and the participant's relationship to these dependents living in the same household. Additional qualitative information could be gathered on the participant's relationship with each of their parents

or guardians at that time, including whether the participant believes their household dynamics could have been described as a happy home or if their parents encouraged them to pursue education after high school. Incorporating family size descriptions, household dynamics, and participant-to-parent relationships would add a greater understanding and psychological viewpoint about participants' family backgrounds.

Educational Implications and Recommendations

This current study examined barriers that negatively affected educational attainment of four-year college degrees. It may be implied that this study will increase awareness of those barriers in hopes of increasing educational attainment of bachelor's degrees both locally in Polk County as well as statewide and nationwide.

First, parents will learn about factors that negatively affect their child's likelihood to graduate from college. It is the researcher's hope that parents will apply this new knowledge in encouraging and coaching their children to obtain four-year college degrees. Second, high school counselors can use this information when assisting parents and students through the college preparation and application process. Third, this research aims to inform higher education institutions what current factors to look for when recruiting and counseling students, and appreciate what the students have personally overcome in order to apply to four-year colleges or universities. Fourth, college funding agencies and scholarship organizations will have the opportunity to share learned knowledge from this study with families of high school students who are seeking scholarships or financial assistance to attend college. This study may help these organizations to make funds available or create scholarships specific to family structures, as well as provide information to families about opportunities for their children to apply

for college funding. Lastly, this study provided predictive statistics on which family related variables negatively affected educational attainment the most, therefore assisting high school counselors and higher education administrators in providing additional resources to their students.

An educational implication is that tuition reimbursement programs positively affect educational attainment; however, it is recommended that such an implication be researched within the design of this current study. Expansion of data collection is recommended, particularly from participants who accessed tuition reimbursement toward their four-year college degrees. Specifically, future research might capture data on whether students believe they would have attained four-year college degrees with or without tuition reimbursement. Future research may also quantify the students who selected particular workplace organizations because of tuition reimbursement opportunities, as compared to tuition reimbursement representing an added benefit to a preselected workplace. Lastly, researchers may be interested to discover why tuition reimbursement is used by students, as in whether or not it was a family-related reason or related to personal finances. Tuition reimbursement research, alongside resource dilution variables, could add to this area of research by incorporating tuition reimbursement as another source of income, and determining if tuition reimbursement made it possible for participants to earn four-year college degrees as opposed to other resource dilution theory variables.

It is also implied in education that first generation college students are less likely to attend and graduate from college, as compared to non-first generation college students. Therefore, the researcher recommends studying this implication within the design of this

current study. The experience and viewpoint of a first generation college student is different than that of a student coming from a family with parents who are college graduates. Capturing the specifics of participant's first generation college experience would add to the literature. Furthermore, to thoroughly explore the experience of a first generation college student, it would be critical to capture information on these students' parents, and why their parents did not attend college. Collecting data on parental influence and expectations, such as parents telling their children a college degree was or was not necessary for their success and is or is not necessary for their child's success, or a parent telling their child that education is or is not something of value, can largely influence a child's choice of pursuing a four-year college degree. Overall, the collection of data on first generation college students and the influence their parents had on their decision to not attend college, or to attend and graduate from college, would inform educational attainment research.

In education, another implication is that students begin their college education after graduating from high school at an age of 17 to 18 years old. On the contrary, anyone can become a college student at any time or any age after that have attained a GED or high school diploma. Therefore, future studies are recommended to collect the age in which participants chose to enroll in college, and qualitatively capture if particular family-related factors, such as family income, family size, or family structure, played a role in this decision. For example, some students may have chosen to delay their educational endeavors after high school, regardless of their family-related factors, in order to pursue an occupation or career that did not require a college degree. To summarize, the reasons behind delaying college attendance are plentiful, and

incorporating this qualitative information into resource dilution research would be beneficial in determining if family-related factors affect participant enrollment age in addition to educational attainment.

The age a student chooses to enroll in college is not the only implied personal choice in the educational environment, as the assumption is also made that individuals *want* to pursue four-year college degrees. It is important to remember that individuals without college degrees were not necessarily unable to attend college, but instead they may have chosen not to. Therefore, it is recommended that future research looks into the qualitative reasoning of why participants may not have attained four-year college degrees. For example, these qualitative reasons may include certain career paths that do not require four-year college degrees, individuals may lack interest in attending college, disabilities and other restrictions may have interfered, or maybe they were a caregiver for a family member. The list of reasons someone chooses not to attend and graduate from college is abundant, therefore, qualitatively capturing this information would be the best method in order to code such reasons into broader categories.

Lastly, it may be important to consider the educational implication that individuals automatically possess the motivation to further their education after high school. Although motivation is certainly not the only factor affecting college graduation rates, motivation does play a large role in the completion of college degrees. Therefore, it is recommended that a motivational Likert scale question, or series of questions, be added to the current study's survey to correlate participant motivation levels with levels of education. If a researcher prefers a mixed methods research design, an interview may capture additional information in this area. Generally, adding participant motivation

levels to this area of research would incorporate a characteristic of the participant, in addition to the characteristics of their family.

Overall, educational implications exist, and there are ways in which future research may address such implications. It is recommended that future research in resource dilution also consider the existence and use of tuition reimbursement programs, participant age of college enrollment, reasons why participants choose not to attend college, and motivation levels of participants. The provided recommendations will address implications in the educational environment through expanding the viewpoint of the resource dilution theory, adding a qualitative perspective to the research design, as well as considering personal choice and characteristics in addition to family characteristics.

Concluding Remarks

There are family-related variables that affect the educational attainment of four-year college degrees, such as family size, family income, family structure, and racial/ethnic group. The resource dilution theory, first developed by Judith Blake in 1981, stated that the more children there were in a family, the more diluted the family resources became, thus negatively affecting the educational outcomes for each child. In addition to the size of a family and family income affecting educational attainment, studies have shown that nontraditional family structures have historically had a strong negative effect on educational attainment (Amato, 2010; Biblarz & Raftery, 1999; Demir-Dagdas et al., 2018; Devor, 2014; Fagan & Churchill, 2012; Schmierer, 2011; Wojtkiewicz & Holtzman, 2011). Altogether, this meant that family structure had an additional effect on

educational attainment when considering family size and family income within the resource dilution theory.

Understanding the effect that family structure specifically has on students' education could potentially improve the educational attainment of four-year college degrees for Millennials as well as upcoming Generation Zers. This current study found the relationship between educational attainment and family structure for Millennials approached statistical significance, in addition to confirming an increasing trend in nontraditional family structures with younger generations. As nontraditional family structures are projected to continuously increase with younger generations, the relationship between educational attainment and family structure should be considered by parents, high school counselors, higher education institutions, as well as college funding agencies and scholarship organizations when focusing on family-related factors that can affect the educational attainment of future generations. Furthermore, the relationship between educational attainment and racial/ethnic group also approached statistical significance and should equally be monitored for the effect of racial/ethnic group on the educational attainment of future generations. As America becomes more diverse, racial/ethnic group may play a larger role in and have a greater effect on, educational attainment. Specifically, these learnings might benefit high school counselors when teaching students and families of the additional effect nontraditional family structures and racial/ethnic group may have on the future educational attainment of four-year college degrees. Furthermore, these learnings might benefit college funding agencies and scholarship organizations to make funds available or create scholarships for specific family structures and racial/ethnic groups.

Future research is recommended in order to further analyze the effect of family structure and racial/ethnic group on the educational attainment of four-year college degrees over time amongst different generations of individuals. Research should continue to study the effect of family-related barriers on educational attainment, including family structure, as well as evaluate the predictive properties of each variable. Additionally, the acceptance rate of family structures and recent trend in increased nontraditional family structures are important factors that should continue to be explored when studying the effect of family structure on educational attainment over time.

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APPENDICES

Appendix A

Templates for Participant Recruitment

Figure A1. *Video Script*

Disclaimer:
Any identifiers of the government agency have been removed from the following script, which are indicated by the use of fill-in-the-blank brackets.

Beginning of Script

Introduction
Good morning [agency name] team, and happy [day of the week]. I hope you are all having a wonderful week! As you know me, I am a [position at the agency] in the [department name] Department. However, I am also a full-time student at Florida Southern College. I am currently working on my dissertation as a requirement of the Doctorate of Education program, where I am learning valuable insight into leadership, high-level administrative functions, as well as how to better understand the world of research.

Dissertation Explanation
Speaking of research and my dissertation, you may ask… "Wait, what is a dissertation?" You can think of it as an in-depth research project, almost like writing a book. As a researcher, I must conduct a study and then write about the study in a very structured manner. This process will take me almost three years (in addition to two years of coursework) to complete, with the guidance of professors from Florida Southern College.

Dissertation Process
As a part of my dissertation process, there are many steps that I have to take.

First, I had to read, read, and read some more, to figure out what I wanted to conduct my study on. I had to find a question that I wanted to answer, but I had to answer that question in a unique way that no one else has done before. It's almost like walking in a new place, where no one has ever walked before.

So after reviewing hundreds of articles, books, and reports, I selected my topic of interest: which is to study the effect that family structure has on individuals earning a bachelor's degree. Family structure has changed a lot over the years (in the early 1900's family was defined as a married mother and father). However, today, family is defined to include structures such as single parents, divorced or separated parents, remarried parents, same-sex parents, and parents who live together and are not married.

Specifics of the Study
My research study will anonymously compare individuals from different generations to see if family structure affects each generation differently. For example, does family structure have a different effect on Baby Boomers and Generation Xers, as compared to Millennials? One could assume that because millennials are more used to different types of family structures, that this would have less of an effect on their education. However, others may argue that because family structure has changed so much, that family structure may actually have more of an effect on the attainment of a bachelor's degree. My dissertation research will attempt to answer these questions, which no one else has been able to scientifically answer before.

Conducting a Survey
Once I realized what I wanted to study for my dissertation, I needed to figure out how I could gather data, and I decided to conduct an anonymous survey. Conducting a survey may sound easy, but trust me, there is a lot that goes in to writing a survey. For example, in order to create my survey, I first reviewed over 40 national surveys in my subject area.

The next step in administering a survey was to conduct what is called a "pilot study," which you all helped me with in September of 2019. I needed 20 completed surveys, and ended up with 27 surveys; so thank you for your anonymous participation! The pilot study was a way to test out my anonymous survey on a small group of people to see if the survey questions gathered the information needed, but more importantly, to prove that the survey was statistically valid and reliable before giving the survey to a much larger group of individuals. Now that the survey has been proven to be statistically reliable and valid through the pilot study and with your help, I am now ready to administer the new and improved final survey.

Final Study
So today, I am here to ask for your help in my completion of this anonymous survey, and I will explain more on how you can play a part.

What is the topic again?
To recap, the overall topic that I am studying is the effect family structure has on the attainment of a bachelor's degree. I will be comparing groups of people from different generations to see if the way "family" was defined during that person's childhood had more or less of an effect on their attending and graduating from college.

What is the goal of your study?
You may ask… "Okay, I understand what you are studying, but why are you studying this?" My goal of this study is to see what types of family-related factors create barriers for students to graduate with a bachelor's degree. Although my major focus of the study will be the effect of family structure on earning a bachelor's degree, I will also be looking at the effect of family income level (low, medium, or high) as well as family size (the number of siblings in a family).

Ultimately, my goal is that this study will have a positive impact on the community as well as nationwide and possibly even worldwide. The results of my research study will inform parents, high school guidance counselors, and college administrators of what family-related factors may create barriers for children to attend college.

It is also my goal that this research will inform local scholarship agencies of which particular family-related factors create barriers to children graduating from college. Once these agencies are aware of these barriers, it would be wonderful if scholarships could be created for these particular students.

Why are you focusing on bachelor's degrees, instead of Associate's degrees?
Florida is a state that provides free tuition for dual enrollment courses, counting towards an Associate's degree. As my study focuses on family-related barriers to earning college degrees, the earning of free two-year degrees through dual enrollment would skew the data. Therefore, to eliminate any errors this may cause, I am focusing on four-year bachelor's degrees.

Why Polk County, Florida?
The community I have chosen to focus on is Polk County, Florida. I have chosen to conduct my study on Polk County because 20% of residents have a bachelor's degree, compared to the nation at 36%, meaning that Polk County has 16% lower amount of population with a bachelor's degree, and I would like to look into a few reasons why that is. With the [agency leader]'s permission, I will be using [agency name] staff as participants, because our office demographics closely match the demographics of Polk County residents in regard to age, race, education level, hourly and annual mean wages, and city of residence. Basically, what I am saying is that through anonymously surveying the employees of our offices I am aiming to receive enough surveys to statistically represent the population of Polk County.

Final Study Details
In order to complete the study, I will need to voluntarily and anonymously collect surveys from at least 200 individuals of the [agency name] team. You do not need to be a resident of Polk County to participate in the study; everyone at [agency name] is welcome to participate.

You will be receiving an email from my [agency name] email address with the hyperlink to a survey in Survey Monkey. The survey will only take approximately 10 minutes, and it is about 10 multiple-choice questions. I would really appreciate if you could complete the survey during your [training tool name] time tomorrow morning. This is completely voluntary, and the survey is 100% anonymous. The data from this survey will not be analyzed on an individual basis, and only I as the researcher will have access to the data for legal and ethical purposes. Furthermore, there is no possible way for me to tell which individuals respond to the survey or how any particular individual responded to the survey.

Once I have received data from the surveys, I will be able to run statistical tests on the anonymous data and begin writing the last two chapters of my dissertation. With your help, I can collect enough data to statistically represent the population of Polk County.

In closing, everyone will hear back from me in three weeks when the survey is closed, and I will let everyone know how many responses I received overall. Even those of you who participated in the pilot study, you may participate in this new and improved final survey, as only results from this version of the survey may be used for my dissertation analysis. Please feel free to contact me if you have any questions about the study. I am really excited to share what I've been working on these past few years, with all of you.

To Recap
You will be receiving an email from me today, with a list of highlights from today's video. Next, you will receive a second email from me, tomorrow morning, with the survey hyperlink.

Over the next few weeks, I will also send friendly reminder emails, to update everyone on the number of surveys I have received and the progress we have made. Please voluntarily participate in the survey if you can. It is completely anonymous, and will make a contribution to this community-focused study for our Polk County area and greater community. Thank you.

Figure A2. *Video Follow-Up Email*

Subject Line: Video Notes: How you can play a part in a research study!

Good Morning,

As a follow-up to the video you saw earlier today, here are a few highlights of what I discussed:

- I am currently working on my dissertation at Florida Southern College in the Doctor of Education program.
- **Dissertation Topic:** Effect of family structure on the earning of bachelor's degrees in Polk County, while comparing results among groups of individuals from various generations
- **Dissertation Goal:** Positively impact Polk County through informing the public as well as local scholarship agencies in order to increase educational attainment of bachelor's degrees in Polk County
- **Why Polk County, Florida?** Polk County has a lower rate of individuals with a bachelor's degree (20%) as compared to the nation (36%), which creates a useful population to survey when looking at barriers to higher education
- **Why [agency name]?** The demographics at the [agency name] are comparable to those of Polk County residents for age, race, education level, hourly and annual mean wages, and city of residence. This means that with at least 200 surveys from staff, I can statistically apply the results to the population of Polk County
- **How will you collect the data?** The study will use a survey, via Survey Monkey. The survey data is completely anonymous, and participation is voluntary
- **How can I participate?** I will be sending out an email with the survey hyperlink tomorrow morning, and reminder emails over the next three weeks, for those who are voluntarily and anonymously willing to participate
- **Who can participate?** <u>All</u> staff members of the [agency name], even those of you who participated in the pilot study, may participate in this final dissertation study

Thank you for your time, and please feel free to contact me with any questions.

Sincerely,
Mrs. Lindsey Thye Franson, *MBA, CPM*

Figure A3. *Start of the Survey Email*

Subject Line: Research Study Opportunity: Impact YOUR Community

Good Morning,

As a part of the study being conducted by Lindsey Thye Franson, Doctor of Education candidate from Florida Southern College, you have been selected to voluntarily participate in an anonymous survey for the "Quantitative Effect of Family Structure on Collegiate Educational Attainment" study. The brief survey will take approximately 10 minutes to complete. Please click on the hyperlink below if you wish to participate in this study (you may also cut and paste the URL into Google Chrome or Internet Explorer). The survey hyperlink will close at the end of day on [date].

Thank you in advance for your participation!

[hyperlink to survey]

Sincerely,
Mrs. Lindsey Thye Franson, *MBA, CPM*

Figure A4. *Continuous Recruitment Email*

Subject Line: Research Study Opportunity: Impact YOUR Community

Good Morning,

Update: If you have **not** already done so, please consider taking this 10-minute survey as there are [number of days] days remaining to participate. In order to statistically represent the population of Polk County, approximately 200 survey responses are needed by employees of [agency name]. To date, [number of received surveys] survey responses have been collected. Thank you!

As a part of the study being conducted by Lindsey Thye Franson, Doctor of Education candidate from Florida Southern College, you have been selected to voluntarily participate in an anonymous survey for the "Quantitative Effect of Family Structure on Collegiate Educational Attainment" study. The brief survey will take approximately 10 minutes to complete. Please click on the hyperlink below if you wish to participate in this study (you may also cut and paste the URL into Google Chrome or Internet Explorer). The survey hyperlink will close at the end of day on [date]. Thank you in advance for your participation!

[hyperlink to survey]

Sincerely,
Mrs. Lindsey Thye Franson, *MBA, CPM*

Figure A5. *End of the Survey Email*

Subject Line: Research Study Opportunity: Survey is now closed

Good Afternoon,

As a part of the study being conducted by Lindsey Thye Franson, Doctor of Education candidate from Florida Southern College, the anonymous survey for the "Quantitative Effect of Family Structure on Collegiate Educational Attainment" study has been closed. Thank you for your interest in this research study, and for consideration/participation to impact your local community through this survey.

The overall goal of the study was to receive feedback from approximately 200 staff members in order to statistically represent the population of Polk County, and the final survey received responses from [number of received surveys] study participants.

Thank you for your time and for your contribution to research!

Sincerely,
Mrs. Lindsey Thye Franson, *MBA, CPM*

Appendix B

Survey Cover Letter

Introduction

The purpose of this study is to explore whether or not the structure of a family has an effect on individuals earning four-year college degrees. Polk County, Florida, was selected for this regional study as Polk County has a lower proportion of its population having earned bachelor's degrees (20.0%) as compared to the nation's population having bachelor's degrees (36.0%). Employees of the [government agency] have been chosen as participants in this study because numerous demographic characteristics of the organization are comparable to the demographics of Polk County residents.

More specifically, results from this anonymous survey will be grouped by generation in order to determine if family structure has more, less, or the same effect on Millennials as compared to groups of individuals from other generations. In order to determine if particular generations have been affected differently by their family structures, a few questions in the survey will require you to answer the questions as if you were 17-years old (the typical age of a high school senior student). This imperative family-related information will paint a picture-in-time of family-related factors that may have affected the earning of a four-year college degree.

The results of this anonymous survey will assist families, high school counselors, college administrators, and local scholarship agencies in Polk County to direct attention, as well as funding, towards students who have barriers to attend college due to circumstances out of their control.

Thank you for participating in this research study!

Appendix C

Informed Consent Letter

Florida Southern College
Informed Consent to Participate in Research

Information to Consider Before Taking Part in this Research Study

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Project Title: Quantitative Effect of Family Structure on Collegiate Educational Attainment: Millennials, Generation Xers, Baby Boomers

Principal Investigator: Lindsey Thye Franson, MBA

Phone: [researcher cell number]

Email: LindseyFranson@[agency name].com

Faculty Sponsor: Dr. Linda Acocelli, EdD

Department: School of Education

PURPOSE OF THE STUDY: I am a graduate student in the Doctor of Education program at Florida Southern College, and I work in the [department name] Department at the [government agency]. You are being invited to participate in this research study because as an employee of a Polk County government agency, you represent the greater population of Polk County. The purpose of the study is to explore the difference amongst different generations of individuals, in regard to the effect family structures have on the attainment of four-year college degrees in Polk County, Florida, in order to increase educational attainment.

STUDY PROCEDURES: As part of this study, you will be asked to complete one survey about your educational and family background, including a few demographic questions. It will take you approximately 10 minutes to complete the survey.

RISKS AND DISCOMFORTS: There are no anticipated risks connected with this study. While you will not experience any direct benefits from participation, information collected in this study may benefit others in the future by helping to create opportunities for college funding agencies to educate and assist families seeking financial assistance for college enrollment.

POTENTIAL BENEFITS: You will not be paid for taking part in this study. Participation in the study will remain anonymous. If the results of this study show significant insights, the anonymous group results will be shared to help others in the future.

CONFIDENTIALITY: All data will be stored in a secured digital file on the Primary Investigator's password-protected computer. Your privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, and the Florida Southern College Institutional Review Board may inspect the records from this research project.

The results of this anonymous study will be published. However, only anonymous group results will be reported. The published results will not include your name, your agency's name, or any other information that would personally identify you in any way.

VOLUNTARY PARTICIPATION / WITHDRAWAL: Your decision to take part in this study is voluntary. You are free to withdraw from the study at any time without penalty. However, once you complete questions on the survey, there will be no way to withdraw your responses from the study because the survey contains no identifying information.

QUESTIONS, CONCERNS, OR COMPLAINTS: If you have any questions about this study, contact the Primary Investigator at the phone number or e-mail at the top of this form. If you have questions about your rights as an individual taking part in a research study, you may contact the Chair of the Florida Southern College Institutional Review Board at fscirb@flsouthern.edu or the Florida Southern College Vice President for Academic Affairs at (863) 680-4124.

CONSENT: By submitting this survey, you are indicating your consent to participate in this study.

Appendix D

Survey Instrument

The survey instrument consisted of 10 questions. A page break in the survey was represented with a new header. Each header contained the survey title and Florida Southern College logo. Question number 10 was a logic question that was only asked to those individuals who selected the response “1981 - Current” in question nine, as question 10 only applied to Millennials.

Educational Attainment Survey

1. What is the HIGHEST level of education you have completed?

- Less than high school
- Some high school, no diploma
- High school graduate or GED completed
- Some college credit, but no degree
- Completed a vocational, trade, or business school program
- Associate's Degree
- Bachelor's Degree
- Master's Degree
- Doctoral Degree (i.e. PhD, EdD, etc.) or Professional Degree (i.e. MD, JD, etc.)

Educational Attainment Survey

2. Have you received tuition reimbursement, towards a *Bachelor's* Degree, through your current workplace?

- ○ Yes
- ○ No

Educational Attainment Survey

Please read the following statements and decide how much you either agree or disagree with each. Using the scale provided, choose the number that best indicates how you feel.

3. It is acceptable and as good as any other arrangement for children to be raised by...

	1 - Strongly Agree	2 - Agree	3 - Neutral	4 - Disagree	5 - Strongly Disagree
Married parents (male and female)	○	○	○	○	○
Married parents (same-sex: 2 males or 2 females)	○	○	○	○	○
Unmarried parents living together	○	○	○	○	○
Single parent (never married, or widowed)	○	○	○	○	○
Divorced/separated parents	○	○	○	○	○

Educational Attainment Survey

Please answer the following question as you would have at the age of 17 years old:

4. When you were 17 years old, how many siblings (biological, adopted, step, half) did you have living in the **SAME** household, including yourself?"

- ○ 1 (you were the only sibling living in the household)
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7 or more

Educational Attainment Survey

Please answer the following question as you would have at the age of 17 years old:

Find the column that contains your year of birth, and use the table below to assist with your response:

	1981 - Current	1965 - 1980	1946 - 1964	Prior to 1946
Low	Less than $48,000	Less than $19,800	Less than $5,600	Less than $4,200
Middle	$48,000 - $145,400	$19,800 - $60,100	$5,600 - $17,000	$4,200 - $8,300
High	Greater than $145,400	Greater than $60,100	Greater than $17,000	Greater than $8,300

5. When you were 17 years old, what was your perceived family income level?

- ○ Low Income
- ○ Middle Income
- ○ High Income

Educational Attainment Survey

Please answer the following question as you would have at the age of 17 years old:

6. When you were 17 years old, what best described your family structure? My parents, who I lived with, were...

- ○ Married (male and female)
- ○ Married (same-sex: 2 males or 2 females)
- ○ Divorced or Separated
- ○ Single (never married, or widowed)
- ○ Cohabitating (living with significant other, but not married)
- ○ Remarried
- ○ Other

Educational Attainment Survey

These final three questions will ask about your demographic information.

7. What is your gender?

- ○ Female
- ○ Male
- ○ Other

8. With which racial/ethnic group do you **MOST** identify?

- White or Caucasian
- Hispanic or Latino
- Black or African American
- Asian or Asian American
- American Indian or Alaska Native
- Native Hawaiian or Other Pacific Islander
- Two or More Races
- Other

9. Based on birth year, what demographic group would you identify yourself in?

- 1981 - Current
- 1965 - 1980
- 1946 - 1964
- Prior to 1946

Educational Attainment Survey

10. If you are **under** the age of 25 and are **currently enrolled** in a 2 to 4-year college, what is the current degree you are working on?

- A vocational, trade, or business school program
- Associate's Degree
- Bachelor's Degree
- Not applicable (I am 25 years old or older and/or not currently enrolled)