ABSTRACT

Title of Dissertation: PATHWAYS TO ADULTHOOD AND THEIR PRECURSORS: ROLES OF GENDER AND RACE

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Doctor of Philosophy, 2016

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Research on the transition to adulthood dates back nearly four decades, but a growing body of research has taken a new approach by investigating multiple demographic markers in the transition to adulthood simultaneously. Using the life course perspective, this dissertation is built on the literature by first examining contemporary young adults' pathways to adulthood from ages 18 to 30 and their differences by gender. Data for this study were drawn from the National Longitudinal Survey of Youth 1997; the final sample included 2,185 men and 2,086 women. The *college-educated single workers* pathway, the *college-educated married working parents* pathway, and the *high-school-educated single parents* pathway were identified in both genders. For men, the study also identified the *high-school-educated single workers* pathway and the *high-school-educated married working parents* pathway. For women, the study also identified the *high-school-educated workers* pathway and the *high-school-educated married parents* pathway. Not only

did the definitions of some pathways differ by gender, but even in the pathways with the same definition, gender differences were found in the probabilities of being married, of being a parent, or of being employed full-time.

Based on the pathways to adulthood identified, this research examined the family and adolescent precursors and whether race moderates the associations between family structure experiences and young adults' pathways to adulthood. Parental education, family structure, GPA, delinquency, early sexual activity, and race/ethnicity were the family and adolescent precursors that distinguished among pathways taken by the youth. Two interactions between race and family structure/instability were identified. The positive association between growing up in a single-parent family and the odds of taking the *high-school-educated single workers* pathway compared to the *college-educated married working parents* pathway was weaker for Black males than for White males. The positive association between family instability and the odds of taking the *college-educated single workers* pathway compared to the *college-educated married working parents* pathway was weaker for Black females than for White females.

This dissertation accounted for changes in the multiple statuses related to becoming an adult by following contemporary young adults for 12 years. More research on contemporary young adults' pathways to adulthood and subgroup differences in the effects of precursors are recommended. Limitations and implications of this study are discussed.

# PATHWAYS TO ADULTHOOD AND THEIR PRECURSORS: ROLES OF GENDER AND RACE

by

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2016

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# Dedication

To my husband, S. Oh, and my parents, S. Lee and M. Gi

# Acknowledgements

I would like to acknowledge those who have helped me, for years, to complete my doctoral studies. First and foremost, I am greatly indebted to my advisor, Dr. Sandra L. Hofferth. Her passionate guidance has helped me clarify my vague research ideas and her generous support has enabled me to focus on my research. Without her encouragement, patience, and feedback, I would not have been able to finish this journey. I was blessed to meet and work with her in one of the most important stages in my life.

My sincere gratitude goes to all of the faculty members on my committee. Dr. Kevin Roy helped me broaden my perspective on life course and strengthen my dissertation in many ways. Dr. Amy Lewin not only guided me to hone my teaching skills, but always encouraged me to finish this dissertation and provided constructive feedback. Dr. Jeffrey Harring made himself available to me during his busy schedule and answered all of my silly questions about statistics. Dr. Kerry Green impressed me deeply with her insightful comments, which were very helpful as I finalized this dissertation. I was very fortunate to have all of them on my committee.

I am deeply thankful to Dr. Elaine Anderson for giving me a number of opportunities to become a competent scholar and to Dr. Jinhee Kim for caring me during the doctoral years. I am also grateful to Dr. Meejung Chin for encouraging me to make the most of my time as a Ph.D. student and to Dr. Jaerim Lee for sharing her research experiences. It was always a delight to talk with them. My doctoral years would have been quite different without them.

My family of course is also very deserving of acknowledgement. A great deal of gratitude goes to my parents who have shown me unconditional support, love, trust, and encouragement all the time. I also thank my brother and his family who are always on my side and support my work. I would like to acknowledge my grandmother. Although I cannot see and hug her anymore, she will be delighted in heaven to hear my achievement. My thanks are extended to my parents-in-law who have graciously supported my study abroad.

Finally, I want to express my heartfelt gratitude and love to my husband and best friend, Seongtaek. His unconditional support and endless love made it possible for me to start and complete this long journey. Thank you for always being there for me from the beginning of my doctoral study. I am forever grateful.

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# Chapter 1: INTRODUCTION

As young people move from adolescence to adulthood, they achieve independence from parents through completing school and being employed full-time or through forming their own family through marriage, cohabitation, or childbearing (Furstenberg, 2010; Settersten & Ray, 2010). When there were strict age norms and age-based rules, the timing and sequence of these life events were predictable. Since the 1970s, however, the transition to adulthood has been de-standardized and individualized (Fussell & Furstenberg, 2005), producing greater variability in the timing and sequencing of the demographic markers and greater individual control over the life course.

One characteristic of the transition to adulthood that has become salient in recent decades is that it takes much longer for young people to transition to adulthood today than in the past (Arnett, 2000; Furstenberg, 2010; Settersten & Ray, 2010). Arnett (2000) proposed the concept of "emerging adulthood" to refer to the period from the late teens to early twenties. This is when young adults can explore their identity and examine diverse life possibilities by postponing marriage or childbirth until at least their late twenties. The extended transition to adulthood is also found in recent statistics. The median age at first marriage of men was 23 in 1970 but 28.7 in 2010; that of women was 20 in 1970 but 26.7 in 2010 (Frech, 2014; Payne, 2012a). Additionally, in the 1980s it tended to take approximately 32 months for married women to have a first marital birth but for their counterparts in the 2000s, it tended to take 37 months (Payne, 2012b).

In contrast, a noticeable subgroup of young adults experience rapid transitions to adulthood (Kendig, Mattingly, & Bianchi, 2014; Roy & Jones, 2014; Settersten & Ray, 2010). For example, those whose parents lack resources to support the extended transition to adulthood take on adult roles, such as a full-time worker or a parent, earlier than their affluent peers (Kendig et al., 2014; Roy, Messina, Smith, & Waters, 2014). This subgroup provides insight into the many disadvantaged youths who are systematically excluded from the opportunity for identity exploration. Bynner (2005) thus argued that the concept of "emerging adulthood" developed by Arnett (2000) may not be applicable to all young adults.

A burgeoning body of research also documents several ways young adults move from adolescence to adulthood (Amato et al., 2008; Dariotis, Pleck, Astone, & Sonenstein, 2011; Fomby & Bosick, 2013; MacMillan & Copher, 2005; Oesterle, Hawkins, & Hill, & Bailey, 2010). Due, however, to the differences in the cohorts examined, the age observed, and the demographic markers included, there is less that is clearly known about whether contemporary young adults move from adolescence to adulthood differently by gender. It is well-known that gender differences are found regarding whether young adults experience each of the aforementioned demographic markers and, if so when. Further research is thus needed to investigate whether and how such gender differences would be found when examining the occurrence and timing of the demographic markers related to becoming an adult simultaneously. This dissertation addresses this research gap by following contemporary young adults for about ten years from their late teens to track their life course patterns and by examining gender differences.

Young adulthood from the late teens to the twenties is an important stage in the life course because it has been known that more transitions take place during this period than in any other stage in life (Rindfuss, 1991). It is also important because such transitions are influenced by childhood and adolescent precursors, such as family-of-origin characteristics. As briefly mentioned above, young adults who grow up in families with limited resources may become full-time workers or parents at very young ages. This research thus examines the set of advantages or disadvantages earlier in life that influence young adults' transition to adulthood.

Of particular interest is whether there are racial differences in the associations between the experiences of family structure during their upbringing and the ways young adults move into adulthood. With the growth of cohabitation and the decoupling of marriage and childbearing, it has become increasingly common over the last few decades for children to grow up outside of a stable, two biological parent family or to experience repeated changes in family structure (Cherlin, 2010). Whereas numerous studies have found how family structure or repeated changes in it is related to developmental outcomes in childhood or adolescence (Waldfogel, Craigie, & Brooks-Gunn, 2010), few studies have attempted to examine whether such experiences in family structure cast a long shadow on the transition to adulthood. Also, studies have yet to investigate racial differences in assessing the associations, while the literature on family structure or family structure instability has long acknowledged racial variations. The present study addresses this research gap.

In this dissertation, the researcher draws on data from the National Longitudinal Survey of Youth 1997. This data set is particularly adequate for this

study because it is one of the few nationally representative longitudinal surveys of the millennials in the U.S. Since this survey contains a number of questions about employment, schooling, cohabitation, marriage, and childbearing, it provides valuable results regarding how contemporary young adults move from adolescence to adulthood and what precursors explain their diverse transitions. Several key concepts and principles of the life course perspective provide the overall motivation for the research questions and validate the selection of the current young adult cohort. Taken together, this study extends prior work in three distinct ways (1) by examining gender differences in the ways contemporary young adults move into adulthood, (2) by investigating their precursors, and (3) by exploring racial differences in the associations between family structure experiences and young adults' several ways of transitioning into adulthood. A summary of the research questions is given below.

***Research Questions***

1-1. What are men's pathways to adulthood from ages 18 to 30?

1-2. What are women's pathways to adulthood from ages 18 to 30?

1-3. Do their pathways to adulthood differ by gender?

2-1. How do family and adolescent precursors predict young adults' pathways to adulthood?

2-2. Does race moderate the association between family structure and young adults' pathways to adulthood?

2-3. Does race moderate the association between family instability and young adults' pathways to adulthood?

# Chapter 2: THEORY & LITERATURE REVIEW

The purpose of this chapter is to provide the theoretical framework and background for this study. The first section begins with a review of the key concepts and principles in the life course perspective and is followed by a review of previous studies regarding the pathways to adulthood and their precursors. This chapter concludes with a summary of research questions and hypotheses.

## *Section I: Theoretical Background*

The present study is built upon the life course perspective. The perspective's key concepts are useful to clarify the meaning of the term pathway. The *transition* concept is defined as "changes in state that are more or less abrupt" (Elder, 1985, pp. 31-32). Transitions are typically short in duration, such as getting married or giving birth. The *event* concept also indicates any changes in state. Elder (1985) explained that the former refers more clearly to changes than does the latter. After people experience events or transitions, they are in *statuses*, such as being in marriage or parenthood. *Trajectories* are charted with a series of transitions across an extended period of time. For example, entries into and exits from full-time jobs are embedded into trajectories of work life. Transitions, statuses, and trajectories in and of themselves, however, cannot fully characterize the life course because life course dynamics arise from diverse timing and sequencing of interconnected multiple transitions, statuses, and trajectories (Elder, 1994, 1998). To capture such interdependence simultaneously, scholars have used the term *pathways*, meaning interlocked trajectories followed by individuals and groups through society (Elder,

Johnson, & Crosnoe, 2003). This definition is adopted for the current study because it helps focus attention on the interlocking nature of individuals' multiple trajectories and the influences of social structure or institutions on particular routes that individuals choose.

The life course perspective also provides several principles that guide this research. The principle of *linked lives* indicates that "lives are lived interdependently" (Elder, 1998, p.4) through shared relationships, such as family. This principle suggests models that incorporate the life histories of family members and family circumstances to understand young adults' pathways to adulthood. For example, parental education attainment has been closely associated with offspring's postsecondary schooling (Teachman, 1987). The parent's family structure or economic circumstances has also been examined as a predictor of young adults' transition to adulthood. Thus, in this study several variables related to young adults' family-of-origin are included as precursors of the pathways to adulthood. More generally, this principle can refer to "the interaction between the individual's social worlds" (Elder, 1994, p. 6). It is well known that those who become a parent in their late teens or early twenties have more difficulty pursuing or completing postsecondary education than their counterparts, suggesting that a trajectory of parenthood is related to that of education. In line with the definition of *pathways*, the *linked lives* principle underscores why it is essential to incorporate multiple trajectories to depict young adults' life course.

The principle of *timing* suggests that meanings, antecedents, and consequences vary depending on when status transitions occur in one's life (Elder,

1985, 1994, 1998; Elder et al., 2003). There are social norms or expectations regarding the timing of status attainment (Hutchison, 2014; Settersten, 2003). For example, in contemporary American society childbirth in the early teen years is considered 'off-time' as parenthood at such a young age may lead to truncated education opportunities and later adversities. In contrast, those who delay parenthood until the late twenties are likely to spend their early twenties pursuing postsecondary education or working. The accumulation of human and financial capital increases later economic security. The timing of obtaining one status in parental life also affects offspring's pathways to adulthood. For instance, maternal first birth at younger ages has affected early transition to parenthood for both women and men (Hardy et al., 1998; Pears et al., 2005). This principle is thus helpful to understand different meanings of the pathways to adulthood depending on when young adults start to obtain status related to becoming an adult. It is also suitable to incorporate antecedents that may have different implications depending on the timing of occurrences, such as maternal age at first birth.

A final principle is *time and place*, meaning that the life course of individuals is influenced by historical times and places (Elder et al., 2003). As noted in the previous chapter, this study focuses on a contemporary cohort of young adults who were born between 1981 and 1985 in the U.S. They are the oldest members of the generation known as the "Millennials." The millennial generation is known to have established distinctive paths to adulthood (Pew Research Center, 2014). Of previous cohorts (Baby boomers and Generation X) at the same life stage, theirs had the highest proportion obtaining a four-year college degree or higher but faced the most

economic hardships, such as low wages and high levels of student loan debt and unemployment. Additionally, the millennial generation tends to delay marriage but when some of its members do marry, they tend to be those who have a higher education and income. In the past, adults were married at similar rates across all socioeconomic groups. Out-of-wedlock births are also more prevalent in the millennial cohort than in other cohorts.

Thus, although there have been several studies that examine the pathways to adulthood (Dariotis et al., 2011; MacMillan & Copher, 2005; Rindfuss, 1991) using the baby boom cohort, it seems worthwhile to examine the pathways using contemporary young adults. For example, Rindfuss (1991) documented that the young adult years are marked from age 18 to 30, and that these years, compared to any other stage in life, are "demographically dense" due to the high rates of demographic indicators, such as fertility, school leaving, or marriage. Given the distinctive characteristics of the millennial generation, however, this argument may no longer hold. Nowadays, researchers generally agree with the age of 18 as the starting point of adulthood but acknowledge that the endpoint cannot be specified (Settersten et al., 2005). This principle provides a rationale for the selection in this research of contemporary young adults. The principle also helps the researcher discuss what becoming an adult means to contemporary young adults.

### *Section II: Gender Differences in the Pathways to Adulthood*

In this research four statuses in the transition to adulthood are used to construct the concept of pathways to adulthood: Enrollment status in school, union

status (cohabitation and marriage), parenthood, and full-time employment. Each of the statuses is briefly reviewed to depict young adults' pathways to adulthood and to investigate any gender variation.

**Gender Differences in Four Statuses in the Transition into Adulthood**

By enrolling in school, particularly postsecondary school, young adults can develop knowledge and social networks that increase career prospects (Brock, 2010), explore career options (Arnett, 2000), and have more chances for upward mobility (Bailey & Dynarski, 2011). Among 18- to 24-year-old adults, 41% were enrolled in degree-granting institutions in 2012 (U.S. Department of Education, 2013); there was variation by gender. Among females, 44.5% were enrolled in degree-granting institutions, but it was 37.6% among males. For young adults aged 25 to 29 years, 34% completed a bachelor's degree or higher in 2014 (U.S. Department of Education, 2014) but the percentage was higher in females than in males (37.2% and 30.9%, respectively). These statistics show that females tended to be enrolled in postsecondary educational institutions and obtain a college degree more than males. Since postsecondary education affects young adults' decision on union and family formation, these variations may contribute to gender differences in the pathways to adulthood.

Union status includes cohabitation and marriage. Similar in that they are coresidential relationships, their timing and relationship to other statuses differ. For example, contemporary young adults generally postpone marriage, not cohabitation, when they enroll in postsecondary school, and cohabitation is shorter in duration than marriage. These two statuses yield different contexts in which parenthood occurs

(Smock & Greenland, 2010); parenthood in marriage is generally considered more stable than that in cohabitation. Because of these different characteristics, both are included in this study as subcategories of young adults' union status. Statistics have shown some gender variation in cohabitation and marriage. The median age at first cohabitation from 2006 to 2010 was 21.8 for women and 23.5 for men (Manning, Brown, & Payne, 2014). Regarding marriage, the median age at first marriage during the same period was 25.9 for women and 27.6 for men. Hence, not only the type of unions that young adults establish but also their timing and their relationship to other statuses, such as parenthood, help the researcher understand the life course patterns.

Parenthood is the only irreversible status of the four considered in this study. Compared to enrollment in school or employment, most young people take on the parental role for the first time in adulthood (Oesterle et al., 2010). Additionally, because caring for young children requires a great deal of time, energy, and attention toward others (the children), not themselves (Arnett, 2006), parenthood has been considered an important indicator of being an adult. It is generally difficult to combine parenthood with college education, so that young people who pursue college education tend to postpone childbirth and those who give birth experience difficulty in continuing or obtaining postsecondary education. As observed in other statuses, there is gender variation in parenthood. From 2006 to 2010, the probability of a woman having a first child was 45% by age 25 and 65% by age 30, and the comparable probability for men was 29% by age 25 and 52% by age 30 (U.S. National Center for Health Statistics, 2012). Taking into consideration the union status in which parenthood occurs, women are more likely than men to give birth and

live with their children outside marriage (Seltzer, 2000). Such variations in the timing and context of parenthood may contribute to gender differences in pathways to adulthood.

Full-time employment indicates financial independence from parents, a defining characteristic of attaining adulthood (Arnett, 2000). A majority of adolescents work part time during high school; their jobs could be tentative and unrelated to their future career plans and their earnings are not sufficient to fully support their lives. By having a full-time position in adulthood, young adults can live on their own without receiving money from parents. According to the U.S. Bureau of Labor Statistics (2014a), 59.8% of women aged 20 to 24 and 63.5% of men within the same age range participated in the labor force in 2013. This gender difference was consistently found in the prime working age (ages 25 to 54).

The four statuses reviewed are related to each other so focusing on each status in and of itself is not sufficient to understand the life course of young adults. Early work revealed a number of life course patterns (Hogan, 1978) and few gender differences (Marini, 1984) by analyzing the aforementioned statuses simultaneously. However, the number was unmanageably large. For instance, Rindfuss and colleagues (1987) examined the transition from school to work, homemaker, military, or other and the timing of parenthood and discovered 1,098 sequences in 6,696 men and 1,827 sequences in 7,095 women. This is one of the most often cited articles to highlight a great deal of variability of life course during the transition to adulthood, but the author did not clarify how to deal with such a large number of sequences. Pointing out this limitation, Jackson and Berkowitz (2005) investigated the sequencing of

marriage, employment, and parenthood and showed 30 categories of status configurations.

To describe the life course of young adults in a more succinct way, other researchers have recently employed advanced statistical techniques, like latent class analysis (LCA). This typology approach has been utilized in a number of studies examining the complex combination of multiple statuses, but most of the research has shown young adults' status configurations at a single time point in the mid-twenties (Huh et al., 2013; Jang, 2014; Maggs, Jager, Patrick, & Schulenberg, 2012; Osgood et al., 2005; Räikkönen, Kokko, Chen, & Pulkkinen, 2012; Salmela-Aro, Ek, Taanila, & Chen, 2012; Sandefur, Eggerling-Boeck, & Park, 2005; Schoon, Chen, Kneale, & Jager, 2012) or at age 30 or 33 (Ross, Schoon, Martin, & Sacker, 2009). To understand the dynamics of young adults' statuses across an extended period of time, however, it is necessary to analyze their statuses measured at multiple time points. When a latent class model is applied to a longitudinal data set so that categorical indicators of the latent variable are repeatedly measured three or more times, it is called RMLCA (Collins & Lanza, 2010). RMLCA fits best to the definition of the construct 'pathway', but as summarized in Table 1, a small number of studies are based on RMLCA in the pathways to adulthood literature.

In the following section, descriptions on the names of latent classes and some of the item-response probabilities given a latent class are provided for a clear understanding of current research on the pathways to adulthood. Figure 1 shows the conceptual model for the first research questions.

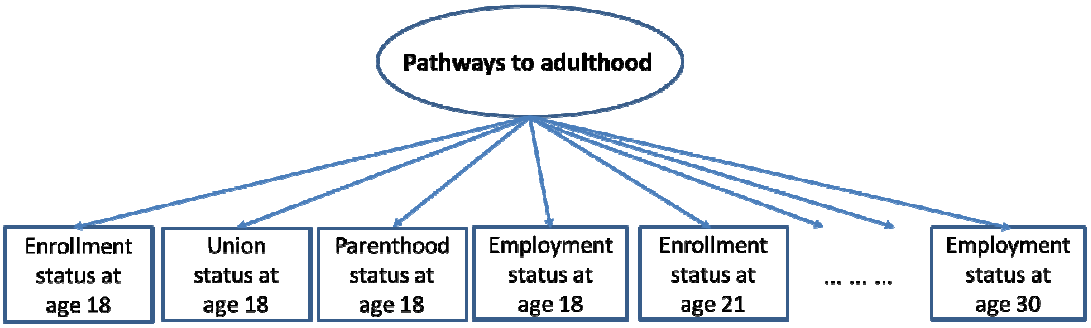



Figure 1. Conceptual Model for Identifying Men's and Women's Pathways to Adulthood

**Pathways to Adulthood by Gender**

A small body of recent studies has shown the pathways to adulthood using LCA in a longitudinal data set, but whether the pathways to adulthood would differ by gender has not been extensively examined in the literature. Two studies included men and women in their samples (Fomby & Bosick, 2013; Oesterle et al., 2010) but only Oesterle et al. (2010) paid particular attention to gender differences in the pathways to adulthood. They identified three pathways to adulthood in men ("unmarried men with limited postsecondary education," "married fathers," and "postsecondary-educated men without children") and in women ("unmarried early mothers," "married mothers," and "postsecondary-educated women without children"). Although the number of pathways identified and the names of the second and third pathways were the same for both genders, the authors found several differences, such as the timing of marriage and when they began to live with children, and the likelihood of combining both roles. They did not think that these were unique pathways that should be found only in their sample of urban young adults (362 males

and 366 females), but other pathways to adulthood or gender differences could be found with a larger sample.

Although gender differences in the pathways to adulthood were not the main focus of the study, Fomby and Bosick (2013) briefly noted that the five pathways identified in a combined sample of males and females were robust across models in which males and females were run separately. The discrepancy between these two studies might be due to the different samples or different age periods observed, but no further studies thoroughly investigated gender differences in the pathways to adulthood. As presented in Table 1, most researchers focused on just one gender in their studies.

Table 1. Summary of the Key Components of the Pathways to Adulthood Literature

| | Amato et al. (2008) | Dariotis et al. (2011) | Fomby & Bosick (2013) | Macmillan & Copher (2005) | Oesterle et al. (2010) |
|---|---|---|---|---|---|
| Data/ Sample | 2,290 females from the Add Health data | 2,800 males from the NLSY79 | 8,841 male and female young adults from the Add Health data | 584 African American (AA), 373 Hispanic, and 1,234 White females from the NLSY79 | 362 males and 366 females from the Seattle Social Development Project |
| Variables | Five statuses (cohabitation, marriage, childbearing, full-time employment, and schooling) measured at each age from ages 18 to 23 | Three statuses (ever-married, ever-fatherhood, and full-time employment) measured at 10 age points (18, 20, 22, 24, 26, 28, 30, 32, 35, and 37). | Age at completing each of the five events (cohabitation, marriage, childbirth, full-time employment, and graduation from a 4-year college or university) by age 24 | Four statuses (marriage, parenthood, employment, and schooling) measured at 5 age points (ages 17, 19, 21, 23, and 25) | Four statuses (marriage, parenthood, employment, and school attendance) measured at 5 age points (ages 18, 21, 24, 27, and 30) |
| Characteristics of latent classes (pathways) and class membership probabilities | 1. *College-no family formation* (.29)<br>A high probability of being in school by age 21 and a rising probability of full-time employment after age 21.<br>2. *High school-no family formation* (.19)<br>A declined probability of being in school from ages 18 to 19. The probability of working full-time was already close to 1 by age 21.<br>3. *Cohabiting without* | 1. *On-time on-sequence fathers* (.13)<br>Their median ages at first fatherhood, first marriage, and rates of full-time employment were close to the medians of the same cohort as the NLSY79. Half of men on this pathway experienced full-time employment nearly age 20, were married about age 23, and then became fathers around age 27. | 1. *Traditional college* (.36)<br>Rising probabilities of finishing college and full-time work from age 21, reaching .6 and .7, respectively, at age 24.<br>2. *Early workers* (.23)<br>A rapidly rising probability of full-time employment from age 17, reaching 1 by age 20.<br>3. *Cohabiting parents* (.14)<br>Increasing probabilities of childbirth and | [AA women]<br>1. *Rapid school-to-parent transition* (.32)<br>A declining probability of schooling and a sharply increasing probability of parenthood, reaching .9 by age 21.<br>2. *School-to-parent transition* (.35)<br>A declining probability of schooling and an increasing probability of parenthood, reaching .8 by age 23.<br>3. *School-to-work transition* (.33) | [Men]<br>1. *Unmarried men with limited postsecondary education* (.26)<br>A steep decline in the probability of attending school after age 18 and a very low probability of marriage.<br>2. *Married fathers* (.31)<br>Increasing probabilities of full-time employment, marriage, and living with children.<br>3. *Postsecondary-educated men without* |

| Amato et al. (2008) | Dariotis et al. (2011) | Fomby & Bosick (2013) | Macmillan & Copher (2005) | Oesterle et al. (2010) |
|---|---|---|---|---|
| *children* (.15)<br>A rapidly rising probability of cohabitation, reaching at .9 by age 21. The probability of full-time employment was between .6 and .8.<br>4. *Married mothers* (.14)<br>An increasing probability of marriage in tandem with that of parenthood.<br>5. *Cohabiting mothers* (.10)<br>Increasing probabilities of cohabitation and parenthood together<br>6. *Single mothers* (.08)<br>An increasing probability of parenthood, reaching at 1 by age 21, and low probabilities of marriage and cohabitation.<br>7. *Inactive* (.06)<br>Low probabilities of cohabitation, marriage, parenthood, and full-time work. A declining probability of being in school from .8 at age 18 | 2. *Teen married fathers* (.08)<br>Almost 70% became fathers and 95% were married by age 20.<br>3. *Young married fathers* (.04)<br>More than 80% were full-time working married fathers by age 24.<br>4. *Young later-marrying fathers* (.04)<br>All became fathers but none of them were married by age 26.<br>5. *Young underemployed married fathers* (.02)<br>The proportion of full-time employment at the childbirth was below .5. All became married fathers by age 28.<br>6. *Young underemployed single fathers* (.12)<br>The proportion of full-time employment at the childbirth was also below .5 and all became fathers by age 28 but | cohabitation in tandem by 1 at age 22.<br>4. *Married parents* (.09)<br>Increasing probabilities of full-time work, marriage, and childbirth together, reaching around .7 at age 24.<br>5. *Cohabiting workers* (.19)<br>The probability of cohabitation by age 24 was almost 1 and that of full-time work increased across all ages. | A declining probability of schooling and an increasing probability of full-time employment, reaching .7 by age 25.<br>[Hispanic women]<br>1. *School-to-family transition* (.42)<br>Increasing probabilities of both parenthood and marriage across ages. The declining probability of schooling to .1 at age 19.<br>2. *School-to-work-to-work and family* (.32)<br>A rapidly declining probability of schooling and an increasing probability of full-time employment.<br>3. *Extended schooling-delayed work* (.27)<br>A high probability of schooling by age 21 and an increasing probability of full-time work to .6 at age 25.<br>[White women]<br>1. *School-to-early work transition* (.30)<br>A sharply declining | *children* (.42)<br>Low probabilities of marriage and living with children. The probability of attending school gradually declined.<br>[Women]<br>1. *Unmarried early mothers* (.27)<br>An increasing probability of living with children, reaching at 1 at age 27 but a low probability of marriage.<br>2. *Married mothers* (.29)<br>Increasing probabilities of marriage and living with children together.<br>3. *Postsecondary-educated women without children* (.43)<br>A gradually declining probability of attending school, a high probability of full-time employment, and a low probability of living with children. |

| Amato et al. (2008) | Dariotis et al. (2011) | Fomby & Bosick (2013) | Macmillan & Copher (2005) | Oesterle et al. (2010) |
|---|---|---|---|---|
| to less than .2 at age 20. | none was in marriage by that age. | | probability of schooling and an increasing probability of full-time work from age 19.<br>2. *Extended schooling-delayed work* (.29)<br>A high probability of schooling by age 21 and an increasing probability of full-time employment thereafter.<br>3. *School-to-work, work-to-family transition* (.22)<br>Increasing probabilities of parenthood and marriage together. Parenthood was almost a certainty at age 25. The probability of full-time employment was flat around .5.<br>4. *School-to-early family transition* (.19)<br>High probabilities of marriage and having children at age 19 and thereafter. | |

*Note. Add Health: the National Longitudinal Survey of Adolescent and Adulthood Health data; NLSY79: the National Longitudinal Survey of Youth 1979*

**Reconciling the Pathways across Studies**

Although the gender, race, and age compositions of the samples varied across the studies, several findings were helpful to guide the hypotheses of the first set of research questions. With regard to the number of pathways to adulthood, researchers have reported 3 to 7 pathways in the samples of respondents followed to the mid-twenties (Amato et al., 2008; MacMillan & Copher, 2005), but Fomby and Bosick (2013) selected 5 pathways to adulthood out of 11 or 12 pathways for theoretical validity and empirical usefulness. From the samples of respondents followed to the age of 30, three pathways were identified (Oesterle et al., 2010). Dariotis and colleagues (2011) followed men until age 37 and presented 6 pathways to adulthood but they originally identified 15 latent classes. Thus, it is expected to identify at least three latent classes showing distinctive pathways to adulthood. The maximum number of the pathways would be determined, with consideration of various model fit indices and theoretical parsimony and validity.

Five distinctive pathways to adulthood have been commonly found in both genders, and they are expected to be identified in this study. First, young adults were highly likely to attend postsecondary school and then work at a full-time job by the mid-twenties (the *college-no family formation* pathway in Amato et al. (2008), the *traditional college* pathway in Fomby & Bosick (2013), and *the extended schooling-delayed work* pathway among White women or Hispanic women in MacMillan & Copher (2005)). Two pathways could diverge thereafter; first, most were likely to marry and have children, such as the *on-time on-sequence fathers* pathway in Dariotis and colleagues (2011) or second, a substantial portion of the young adults were likely

to delay marriage and parenthood, such as the *postsecondary-educated women without children* pathway and the *postsecondary-educated men without children* pathway in Oesterle and colleagues (2010). These two pathways can be referred to as a college-educated married working parents pathway and as a college-educated single workers pathway.

Next, young adults were highly likely to work, instead of pursuing postsecondary education, and postpone family formation by the mid-twenties (the *high school-no family formation* pathway in Amato et al. (2008), the *early workers* in Fomby & Bosick (2013), and the *school-to-work transition* pathway among African American women or the *school-to-early work transition* pathway among White women in MacMillan & Copher (2005)). A majority of them could be unmarried by age 30, such as the *unmarried men with limited postsecondary education* pathway in Oesterle and colleagues (2010). This pathway can be labeled as a high-school-educated single workers pathway.

In the fourth pathway, young adults were highly likely to both marry and have children in early twenties such as the *married mothers* pathway in Amato and colleagues (2008), the *teen married fathers* in Dariotis and colleagues (2011), or the *school-to-early family transition* pathway among White women in MacMillan and Copher (2005). The likelihoods of marriage and parenthood could increase gradually by the mid-twenties, such as the *married mothers* pathway and the *married fathers* pathway in Oesterle and colleagues (2010) or the *young married fathers* in Dariotis and colleagues (2011). If the likelihood of full-time employment was low, the pathway would be similar to the *school-to-family transition* pathway among Hispanic

women in MacMillan and Copher (2005) or the *young underemployed married fathers* in Dariotis and colleagues (2011). This can be referred to as a high-school-educated married parents pathway.

The fifth pathway would be that a majority of young adults were likely to have children by the mid-twenties but the likelihood of marriage was not high. In other words, young adults would not give birth or raise their child in marriage. This is similar to the *single mothers* pathway in Amato and colleagues (2008), the *rapid school-to-parent transition* pathway and the *school-to-parent transition* pathway among African American women in MacMillan and Copher (2005), the *young underemployed single fathers* in Dariotis and colleagues (2011), and the *unmarried early mothers* pathway in Oesterle and colleagues (2010). Some of the young adults may take another pathway by marrying in the late twenties, such as the *young later marrying fathers* in Dariotis and colleagues (2011). This can be referred to as a high-school-educated single parents pathway.

A group of pathways characterized by a high probability of cohabitation was found in several studies, such as the *cohabiting without children* pathway in Amato and colleagues (2008) and the *cohabiting workers* pathway in Fomby and Bosick (2013). As well, when the probability of parenthood was high, researchers identified the *cohabiting mothers* pathway (Amato et al., 2008) or the *cohabiting parents* pathway (Fomby & Bosick, 2013). Because most of the researchers have not taken cohabitation into consideration when identifying pathways to adulthood, it was unclear whether these pathways were truly distinctive or could be combined with other similar pathways. Given that cohabitation tends to be short in duration and

young adults in cohabitation may end up getting married, the aforementioned pathways would be combined with other pathways.

In the pathways to adulthood there could be several gender differences. First, even if the pathways to adulthood are named the same in both genders, the probability of being married would rise from earlier ages in women. Oesterle and colleagues (2010) found *the postsecondary-educated men/women without children* pathway; however, among women the probability of being married increased from age 21 whereas among men it began to increase from age 24. This is plausible based on the fact that women get married at earlier ages than men. Second, the probability of being a parent would increase from earlier ages in women than in men as women become a parent at younger ages than men.

Third, women would have a lower probability of being employed full-time than men. As reviewed, at prime working age women show a lower participation level in the labor force, so this gender difference would be found, despite the pathways being named the same. Lastly, the probability of membership in pathways characterized by college graduates would be higher among women, as women are more likely to complete a college degree than men (U.S. Department of Education, 2014). In this research young adults who attend postsecondary schooling are separately coded from those who receive a college degree, so this gender difference could be investigated.

This section concludes with addressing the limitations in the literature. First, most researchers, when identifying young adults' pathways to adulthood, have focused on the age range of late teens to mid-twenties. While this period may be

sufficient for studying emerging adulthood (Arnett, 2000), it is certainly insufficient for observing the transition to adulthood at age 30. This insufficiency is particularly evident when studying men's transition to adulthood because men begin union and family formation at older ages than women. Additionally, increasing participation in postsecondary education and the rising median age in marriage and childbirth have prolonged the transition to adulthood for both males and females, requiring a longer follow-up period. Very few studies have followed young adults up to their late twenties or early thirties (see Dariotis et al., 2011; Oesterle et al., 2010).

Second, there have been too few studies on contemporary young men's pathways to adulthood. Dariotis and colleagues (2011) investigated the longest period of time (from ages 18 to 37) among men in U.S. These men, however, were born between 1957 and 1964, so their pathways to adulthood took place during the mid-1970s to the late 1990s. Such pathways could be quite different from those who were born in the early 1980s and initiated their pathways to adulthood during the 2000s. Oesterle and colleagues (2010) followed these new millennials, but their sample was not large enough to show diverse pathways to adulthood. Fomby and Bosick (2013) also examined contemporary young men, but their study was limited by the authors' combining men with women in their analyses.

Thus, gender differences in the pathways to adulthood have not been thoroughly examined among contemporary young adults. In contemporary young adults, does the number of the pathways to adulthood differ by gender? Does the meaning of the pathways to adulthood differ by gender? Do both genders share common pathways? If so, what are those pathways? These questions have not been

clearly answered due to the relatively narrow age range observed and the lack of a large representative data set that includes both men and women.

Investigating the first set of research questions could help contribute to an understanding of the transition to adulthood literature by (a) following young adults from age 18 to age 30, (b) using a nationally representative data set, and (c) paying particular attention to gender differences in the pathways to adulthood.

## Hypotheses

The following hypotheses are posited based on the literature.

*Hypothesis 1a*: Among men and women, there will be five pathways to adulthood: the college-educated single workers pathway, the college-educated married working parents pathway, the high-school-educated single workers pathway, the high-school-educated married parents pathway, and the high-school-educated single parents pathway.

*Hypothesis 1b*: The pathways to adulthood from age 18 to age 30 will differ by gender.

## *Section III: Precursors of the Pathways to Adulthood*

This section provides background on family and adolescent precursors so as to help answer the second set of research questions: How do family and adolescent precursors predict young adults' pathways to adulthood? Does race moderate the association between family structure and young adults' pathways to adulthood? Does race moderate the association between family instability and young adults' pathways to adulthood?

### Family Socioeconomic Status and the Pathways to Adulthood

**Parental education**. As an indicator of a family's socioeconomic status, parental education is an important predictor of offspring's educational or occupational attainment (Teachman, 1987). Research on the four statuses that construct the pathways to adulthood has shown that young adults raised in families of higher SES, measured by parents' educational attainment, were more likely than those from lower SES families to pursue higher education, as assessed by enrollment status in a 2- or 4-year postsecondary school (Aquilino, 1996; Bailey & Dynarsk, 2011; Crosnoe, Mistry, & Elder, 2002; Kendig et al., 2014). Given that postsecondary education delays marriage and childbearing (Glick, Ruf, White, & Goldscheider, 2006), it is likely that even among those who pursue postsecondary education, a higher level of parental education attainment may predict later marriage or childbearing. However, parents' education level did not predict young women's nonmarital cohabitation (Amato & Kane, 2011a).

A small set of studies on the pathways to adulthood also showed that young adults with high parental educational attainment were less likely to take pathways characterized by secondary education than pathways characterized by postsecondary education or late family formation (Amato et al., 2008; Fomby & Bosick, 2013; Oesterle et al., 2010). Thus, it is hypothesized that, as parental educational attainment increases, young adults are less likely to take pathways characterized by secondary education than pathways characterized by postsecondary education.

**Economic hardship**. With parental education level, whether young adults experienced economic hardship during childhood or adolescence indicates their family's socioeconomic status. This has been measured in diverse ways, such as a comprehensive item including annual income, educational attainment of parents, or receipt of public assistance (Crosnoe et al., 2002) or whether a respondent had lived in overcrowded or temporary accommodation (Ross et al., 2009). Researchers have documented that economic hardship negatively predicted young adults' likelihood of being enrolled in or having graduated from a 2- or 4-year college (Crosnoe et al., 2002). In a study examining family and nonfamily role configurations of young adults in the early thirties, Ross and colleagues (2009) found that the experience of material hardship was positively associated with being single or being in disadvantaged families and negatively associated with being married parents or being career-oriented adults without children. Lastly, Fomby and Bosick (2013) showed that those whose household usually had sufficient money to pay bills were more likely than their counterparts to take the traditional college pathway than other pathways. Thus it is posited that compared to young adults who have not experienced economic

hardship, those who have are more likely to take pathways characterized by secondary education or nonmarital relationships than pathways that involve postsecondary education.

### Family Structure Experience and the Pathways to Adulthood

**Family structure**. Family structure has long been studied as a key predictor of an offspring's family formation because it is closely associated with parental resources, support, and the opportunities to learn about parents' relationship skills and expectations (McLanahan & Sandefur, 1994). Studies have found that family structure tends to have a weak association with pursuing postsecondary education (Sandefur et al., 2005), but it exerts direct and indirect influences on union status or parenthood. For example, youths who had not lived in two-parent families were likely to have low academic achievements in school, leading to taking on family responsibilities (cohabitation, marriage, or parenthood) prior to, on average, age 20 (Wickrama, Conger, Wallace, & Elder, 2003). Also, women raised in single-parent families were likely to engage in nonmarital cohabitation and childbearing (Miller, 2002).

Regarding the association between family structure and the pathways to adulthood, young adults who had not lived with two parents were more likely than those who had to take pathways that involve either early parenthood or nonmarital relationships (Fomby & Bosick, 2013; Oesterle et al., 2010). These pathways would also be characterized by limited postsecondary education because early childbearing makes it difficult to pursue postsecondary education in a person's twenties. Based on the findings, it is posited that young adults were not raised in two-biological-parent

families are more likely than those raised in two-biological-parent families to take pathways characterized by early childbearing or nonmarital relationships, rather than pathways characterized by postsecondary education or late marriage or parenthood.

**Family instability**. Family instability refers to the changes in a parent's union status that children have experienced over a long period of time (Fomby, Mollborn, & Sennott, 2010). As divorce, cohabitation, and nonmarital childbearing have increased over decades, family structure is no longer fixed or stable in offspring's lives (Cherlin, 2010). To measure such a fluid nature, researchers have employed the concept of family instability. Its four dimensions identified in the literature include the number of family structure transitions, the types of transitions (e.g., from marriage to divorce or from being single to cohabitation), their timing, and the duration of time children spend in a certain type of family structure (Ryan, Franzetta, Schelar, & Manlove, 2009). Among the four dimensions, the number of family structure transitions has been associated in the literature with the most outcomes (Amato, 2010), including the early transition to adulthood (Hofferth & Goldscheider, 2010). The consistent finding in these studies is that more or repeated family structure transitions are associated with greater negative developmental outcomes, above and beyond family structure measured at any time point, because of the repeated uncertainty and changes in relationships.

Family instability tends to exert a direct influence on various statuses. Compared to youths who continually lived in single-parent families, those who had experienced multiple family transitions during childhood were less likely to enroll in postsecondary school (Aquilino, 1996). Also, a greater number of family transitions

predicted a higher likelihood of cohabitation (Ryan et al., 2009) and non-marital births (Wu & Martinson, 1993). When both family structure and family instability were taken into consideration, it was family instability that consistently predicted men's early transition to parenthood; women's early transition to parenthood was predicted by both measures (Hofferth & Goldscheider, 2010). Changes in parents' union status during childhood were associated with young adults' paid employment at age 30 (Gibb, Fergusson, & Horwood, 2012), though the direction of the association was not clearly explained.

The literature offers few examples where family instability is studied in the pathways to adulthood. Fomby and Bosick (2013) showed that compared to young adults without family instability, those who experienced it from ages 5 to 14 were more likely to take the *cohabiting workers* or the *married parents* pathway than the *traditional college* pathway. However, this finding should be interpreted with caution. For one thing, it has not been substantiated by other research and for another most of the direct associations between family instability and young adults' pathways to adulthood were mediated by other family characteristics or adolescent factors. Given the findings about family instability and the four statuses reviewed, it is hypothesized that as young adults experience more family instability, they are more likely to take pathways characterized by early childbearing or nonmarital relationships than pathways characterized by postsecondary education or late marriage or parenthood.

### Adolescent Precursors and the Pathways to Adulthood

**Race: Direct and moderating influences**. Race, which in this study refers to being White or Black, has been a predictor of differences in the four statuses that

comprise the construct of pathways to adulthood. Blacks were less likely than Whites to be enrolled in school (U.S. Department of Education, 2013) and to earn a Bachelor's degree or higher (U.S. Department of Education, 2014). Blacks tended to become a parent earlier but to marry later than Whites (MacMillan & Copher, 2005), suggesting that single parenting is much more prevalent among Blacks than Whites. This is particularly common for women. The participation in the labor force was more common among Whites than Blacks (U.S. Bureau of Labor Statistics, 2014a).

Racial differences have also been found in the ways that these individual status transitions come together. For example, Black young adults have been found to be more likely to take pathways characterized by early nonmarital childbearing and limited postsecondary education than White young adults, particularly for women (Amato et al., 2008; Oesterle et al., 2010). Based on the findings, it is posited that compared to White young adults, Black young adults are more likely to take pathways characterized by early nonmarital childbearing than pathways characterized by postsecondary education or childbearing at later ages.

Given that race is closely related to parenting practices and cultural norms about marriage or parenthood, race may also exert interactive effects with the family structure experience variables. Several studies have demonstrated that the influence of family structure on delinquency or cognitive abilities may be stronger for Whites than for Blacks (Duncan, 1994; Dunifon & Kowaleski-Jones, 2002). However, virtually no research has examined racial differences in the effects of family structure on the pathways to adulthood. With regard to family instability, research considering the effects of family instability on early sexual initiation and childbearing has shown

stronger positive associations for White women than for Black women (Wu & Martinson, 1993; Wu & Thomson, 2001). Fomby and Bosick (2013) also suggested that such variation may be found in the pathways to adulthood, but no studies have yet examined this.

Researchers who examined these racial differences in family structure or family instability effects have argued that Blacks have more emotional and instrumental support provided by kin and extended family members than Whites (McLoyd, Cauce, Takeuchi, & Wilson, 2000). As a result, such support can buffer any negative effects of living in a single-parent family or repeated changes in a parent's union status. Additionally, single parenthood is more prevalent in Blacks than in Whites so any consequences of living with one parent could be less pronounced in the former than in the latter.

In this study, the moderating effects of race on the associations between the two family structure experience variables and pathways to adulthood are tested after all of the direct effects of the variables are tested. It is posited that the positive association between living in a single-parent or other family and the odds of taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will be weaker for Black respondents than White respondents. It is also hypothesized that the positive association between family instability and the odds of taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will be weaker for Black respondents than White respondents.

**Academic performance in high school**. It is well established that higher academic performance in high school predicted higher educational attainment (Melby et al., 2008), such as investment in postsecondary education and college graduation. Also, it is negatively related to the likelihood of cohabitation, nonmarital birth, and marital birth for women (Amato & Kane, 2011a). For men, academic performance also reduced the odds of becoming a father (Pears et al., 2005). It also predicted positive work outcomes measured by the number of working hours, benefits received, and personal income (Faas, Benson, & Kaestle, 2013), suggesting that academic achievement may predict young adults' full-time employment status.

As expected, academic achievement has been positively associated with young adults' membership in the pathway characterized by college education and late marriage and childbearing (Amato et al., 2008; Fomby & Bosick, 2013; Oesterle et al., 2010) and negatively associated with membership in the pathway characterized by nonmarital childbearing for men (Oesterle et al., 2010). It is thus hypothesized that young adults are less likely to take pathways characterized by secondary education or early childbearing than pathways characterized by postsecondary education or late marriage or childbearing as their academic performance in high school increases.

**Delinquency**. Engagement in delinquent activities has been known to be closely linked with leaving high school early or early entry into parenthood (Brook, Richter, Whiteman, & Cohen, 1999; Hofferth & Goldscheider, 2010). With regard to delinquency and pathways to adulthood, young adults' delinquency score has predicted their higher membership in the pathways including cohabitation (Amato et al., 2008; Fomby & Bosick, 2013). However, this association was not found by

Oesterle and colleagues (2010), who followed young adults up to age 30 and cohabitation was not measured as one type of union formation. It is thus worthy to test whether delinquency is associated with taking pathways characterized by low educational attainment or early childbearing.

**Early sexual activity**. Early sexual activity, alongside engagement in delinquent activities, is another risk factor that affects low educational attainment and early family formation. Research documented that having sex before the age of 15 predicted earlier transition to parenthood for both men and women (Hofferth & Goldscheider, 2010), and young adults who experienced early sexual involvement were more likely to take pathways that involve either union formation or parenthood than those who experienced it later (Fomby & Bosick, 2013; Oesterle et al., 2010). Based on the findings, it is posited that young adults who initiated sexual activity early would be more likely to take pathways characterized by low educational attainment or early family formation than pathways characterized by postsecondary education or late marriage or childbearing.

### Control Variables

To clarify what family and adolescent precursors are associated with young adults' pathways to adulthood, other confounding factors should be controlled. First, maternal age at the adolescent's birth has been positively associated with membership in the *traditional college* pathway in Fomby and Bosick (2013) and the *postsecondary-educated men without children* pathway in Oesterle and colleagues (2010). However, Turley (2003) found that a significant predictor of children's development was maternal age at first birth, not maternal age at a given child's birth,

especially for non-firstborn children. Given this finding, maternal age at first birth is included as a control variable.

Second, the age of young adults in the sample is controlled. Information about family characteristics was mainly collected in the first parental survey round; young adults in the sample were 13 to 18 at the time. Although the range is not wide, the age of young adults is controlled.

Researchers in the studies reviewed primarily focused on discovering which family or adolescent precursors predicted young adults' pathways to adulthood, but some of the associations may unfold differently by race. Thus, this study contributes to the current literature by (a) examining whether diverse family and adolescent precursors predict young adults' pathways to adulthood, (b) exploring whether young adults' pathways to adulthood are influenced by family structure differently according to race, and (c) investigating whether young adults' pathways to adulthood are predicted by family instability differently according to race.

To test all of the hypotheses, this study uses as a reference category the college-educated married working parents pathway. Based on the literature, this pathway is one of those clearly expected to be identified in this study. Respondents on this pathway are likely to obtain most of the statuses considered as becoming an adult at the age of 30. Additionally, since this pathway is characterized by respondents' completed college education, those on this pathway can be considered an advantageous group, which helps the researcher compare it to respondents on other pathways and understand any differences. The conceptual model for the second set of

research questions is presented in Figure 2, and this model is tested separately in men and women.

**Hypotheses**

The first four hypotheses test the direct associations between all of the family precursors and young adults' pathways to adulthood.

*Hypothesis 2a*: The odds of respondents taking pathways characterized by secondary education compared to the college-educated married working parents pathway will decrease as parental educational attainment increases.

*Hypothesis 2b*: The odds of respondents who experienced economic hardship taking pathways characterized by secondary education or nonmarital relationships compared to the college-educated married working parents pathway will be greater than the odds of respondents who did not experience economic hardship.

*Hypothesis 2c*: The odds of respondents who were not raised in two-biological-parent families taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will be greater than the odds of respondents raised in two-biological-parent families.

*Hypothesis 2d*: The odds of respondents taking pathways characterized by early childbearing or non-marital relationships compared to the college-educated married working parents pathway will increase as they experience more family instability.

The following four hypotheses test the direct associations between all of the adolescent precursors including race and young adults' pathways to adulthood.

*Hypothesis 2e*: The odds of Black respondents taking pathways characterized by early nonmarital childbearing compared to the college-educated married working parents pathway will be greater than the odds of White respondents.

*Hypothesis 2f*: The odds of respondents taking pathways characterized by secondary education compared to the college-educated married working parents pathway will decrease as their high school GPA increases.

*Hypothesis 2g*: The odds of respondents taking pathways characterized by secondary education or early childbearing compared to the college-educated married working parents pathway will increase as their delinquency score increases.

*Hypothesis 2h*: The odds of respondents who experienced early sexual activity taking pathways characterized by secondary education or early childbearing compared to the college-educated married working parents pathway will be greater than the odds of respondents who did not experience early sexual activity.

The following two hypotheses test the moderating associations between two family structure experience variables and young adults' pathways to adulthood by race.

*Hypothesis 2i*: The positive association between not living in two-biological-parent families and the odds of taking pathways characterized by early

childbearing or non-marital relationships compared to the college-educated married working parents pathway will be weaker for Black respondents than for White respondents.

*Hypothesis 2j*: The positive association between family instability and the odds of taking pathways characterized by early childbearing or non-marital relationships compared to the college-educated married working parents pathway will be weaker for Black respondents than for White respondents.

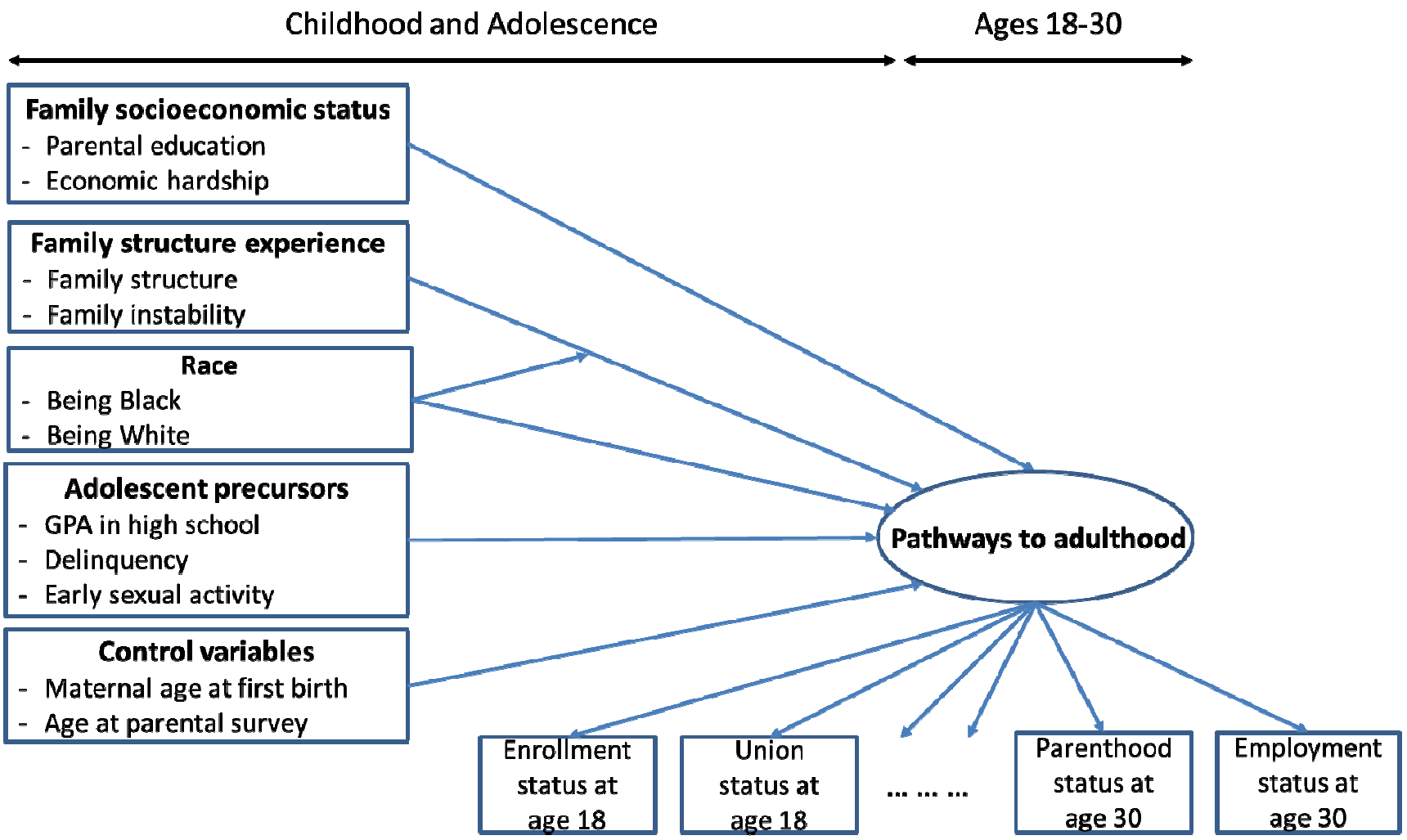



Figure 2. Conceptual Model for Examining Precursors of the Pathways to Adulthood

### *Section IV: Summary of Research Questions and Hypotheses*

The research questions and hypotheses of this study are as follows:

**Research Question 1 and Hypotheses**

What are men's pathways to adulthood from ages 18 to 30? What are women's pathways to adulthood from ages 18 to 30? Do their pathways to adulthood differ by gender?

*Hypothesis 1a*: Among men and women, there will be five pathways to adulthood: the college-educated single workers pathway, the college-educated married working parents pathway, the high-school-educated single workers pathway, the high-school-educated married parents pathway, and the high-school-educated single parents pathway.

*Hypothesis 1b*: The pathways to adulthood from age 18 to age 30 will differ by gender.

**Research Question 2 and Hypotheses**

How do family and adolescent precursors predict young adults' pathways to adulthood? Does race moderate the association between family structure and young adults' pathways to adulthood? Does race moderate the association between family instability and young adults' pathways to adulthood?

*Hypothesis 2a*: The odds of respondents taking pathways characterized by secondary education compared to the college-educated married working parents pathway will decrease as parental educational attainment increases.

*Hypothesis 2b*: The odds of respondents who experienced economic hardship taking pathways characterized by secondary education or nonmarital relationships compared to the college-educated married working parents pathway will be greater than the odds of respondents who did not experience economic hardship.

*Hypothesis 2c*: The odds of respondents who were not raised in two-biological-parent families taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will be greater than the odds of respondents raised in two-biological-parent families.

*Hypothesis 2d*: The odds of respondents taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will increase as they experience more family instability.

*Hypothesis 2e*: The odds of Black respondents taking pathways characterized by early nonmarital childbearing compared to the college-educated married working parents pathway will be greater than the odds of White respondents.

*Hypothesis 2f*: The odds of respondents taking pathways characterized by secondary education compared to the college-educated married working parents pathway will decrease as their high school GPAs increases.

*Hypothesis 2g*: The odds of respondents taking pathways characterized by secondary education or early childbearing compared to the college-educated

married working parents pathway will increase as their delinquency score increases.

*Hypothesis 2h*: The odds of respondents who experienced early sexual activity taking pathways characterized by secondary education or early childbearing compared to the college-educated married working parents pathway will be greater than the odds of respondents who did not experience early sexual activity.

*Hypothesis 2i*: The positive association between not living in two-biological-parent families and the odds of taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will be weaker for Black respondents than for White respondents.

*Hypothesis 2j*: The positive association between family instability and the odds of taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will be weaker for Black respondents than for White respondents.

# Chapter 3: METHODS

This chapter begins with an overview of the National Longitudinal Survey of Youth 1997, followed by a description of the participants in the current study. Next the chapter provides details of the variables, followed by an outline of the analytic method. The chapter concludes with a statement regarding the protection of human subjects in research.

## *Data*

The data used in this study were drawn from the National Longitudinal Survey of Youth 1997 (NLSY97), part of the National Longitudinal Survey (NLS) program. The NLSY97 is sponsored by the U.S. Bureau of Labor Statistics and is conducted by the Ohio State University and the National Opinion Research Center (NORC) at the University of Chicago. This survey is designed to represent youths living in the U.S. in 1997 who were born between 1980 and 1984, and asks a variety of questions regarding the transition from school to work and from adolescence to adulthood, as well as youths' family and community backgrounds (U.S. Bureau of Labor Statistics, 2014b). It was annually administered from 1997/98 (round 1) to 2011/12 (round 15) and biannually thereafter. Currently, rounds 1 through 16 are available to the public and round 17 will be released in 2017.

The NLSY97 cohort was selected in multiple phases. First, investigators developed a list of 96,512 households in 147 non-overlapping primary sampling units (PSUs) from the NORC's 1990 national sample. Second, NORC interviewers visited the households and administered a short screening interview to identify eligible

participants whose ages ranged from 12 to 16 as of December 31, 1996. These screening interviews were completed in 75,291 housing units, and 9,806 household members were considered eligible to participate in the NLSY97. Of these eligible individuals, a total of 8,984 respondents (91.6%) were interviewed during the first survey round, a period of time that ranged from February to October in 1997 and from March to May in 1998. They are the NLSY97 cohort members.

The NSLY97 cohort consists of two samples. A cross-sectional sample (6,748 respondents) represents youths living in the U.S. during round 1 and who were born between January 1, 1980 and December 31, 1984. A supplemental sample (2,236 respondents), which was designed to facilitate reliable statistical analyses, oversampled Hispanic and Black respondents living in the U.S. during round 1 and who were born between January 1, 1980 and December 31, 1984. Researchers can combine these two samples to represent the national population within the same age range, using individual sample weights developed by the NORC at the University of Chicago. To maximize the final sample size, both of the samples were used in this study.

The main NLSY97 instrument is the youth questionnaire that focuses on a variety of topics including employment, schooling, family formation, family background, health, and attitudes, behaviors, and time use. In addition, the parent questionnaire, conducted only in round 1, was answered by one parent of each youth who resided in the same household as the youth. If the youth did not live with a parent-type figure or lived with those who were not a preferred responding parent (e.g., a foster parent with whom the youth had lived less than 2 years), the parent

questionnaire was not conducted. This instrument covered the extensive personal background information of the responding parent or guardian, such as marital and employment histories. Due to ineligibility and non-responses, 7,942 youths of the NLSY97 cohort (88.4%) have a completed parent interview. A computer-assisted personal interviewing (CAPI) system was utilized in the interviews, with the use of audio computer-assisted self-interview (ACASI) for questions on sensitive topics such as criminal activity or sexual behavior.

Most of the information for this research came from the aforementioned questionnaires, but some information also came from such sources as the household roster, high school transcripts collected in 1999-2000 for NLSY97 respondents born in 1980 and 1981 and in 2004 for those born in 1982 through 1984, and a childhood retrospective section in rounds 7 – 9.

### *Sample*

The final sample was drawn from all of the 16 survey rounds available and was based on the following criteria. First, respondents should reach at least the age of 31 in any available round to cover their entire 12 months at the age of 30. Out of the 8,984 respondents, 5,378 youths met this criterion. There were 280 respondents who were estimated to meet this criterion based on their date of birth and the survey fielding periods but did not participate in the latest survey so their information at the age of 30 was not available. Although their information on the key indicators about the pathways to adulthood was missing, this can be taken into account with full information maximum likelihood estimation in the analyses. In addition, because some of their childhood and adolescent information was not missing, they were

included in the sample. The second criterion is their race. In this research, the race of the respondents had to be non-Hispanic Black or non-Hispanic White (Black or White hereafter). This resulted in a sample of 4,271 respondents, including 2,185 males and 2,086 females. This sample was used for the identification of the pathways to young adulthood from ages 18 to 30 (RQ1; see Appendices 1 and 2 for their sociodemographic information). For the analysis of predictors that explain the pathways to adulthood (RQ2), respondents who did not have complete data on the predictors were excluded from this sample, resulting in a sample of 1,946 males and 1,847 females.

***Missing data***

No respondents lacked information on age, race, or gender, but data were missing on other variables when the parent of respondents did not participate in the parent survey or when respondents did not complete the annual surveys. When the missing values occurred on the dependent variables, full information maximum likelihood (FIML) was used in M*plus*. This technique requires the assumption be made that missing data are missing at random (MAR), meaning that the probability of data missing on a variable depends on other variables, not the variable itself (Enders & Bandalos, 2001). In order for the MAR assumption to be approximately satisfied, it is important to include available auxiliary variables in the analyses (Collins, Schafer, & Kam, 2001). Thus, respondents who did not have values on some of the dependent variables remained in the sample because their other available auxiliary variables were included in the estimation of a casewise likelihood function and its accumulation and maximization in the entire sample.

Almost one third of respondents did not have values on some of the independent variables. To reduce the number of missing cases, the author attempted to substitute data drawn from other variables, taking advantage of this longitudinal data set. First, some of the missing values were filled in when the same question was asked in other waves and respondents' answers were considered to be consistent, regardless of when asked. For example, the relationship of the parent figure(s)/guardian(s) to respondents at age 6 was first asked in the parent survey in round 1. This question was also asked in the childhood retrospective survey in rounds 7 to 9. When the former was unavailable, the latter was substituted. Second, missing information on the responding parent was substituted for that of the non-responding parent. This substitution reduced the number of missing cases substantially. For the remaining respondents with missing values, listwise deletion was used in M*plus*. About 10 percent of respondents had missing data on the independent variables for RQ2 ($n$ = 239, 10.94% of the total sample for males and $n$ = 239, 11.46% of the total sample for females; the number of missing cases on each independent variable is presented in Appendices 1 and 2). A test of mean differences was conducted to uncover any differences in the independent variables between respondents who had complete information (1,946 men and 1,847 women) and those who did not and were subsequently dropped (239 men and 239 women). This test was conducted in PROC SURVEYREG in SAS with the same variance estimates that can be obtained in PROC SURVEYMEANS.

In males, the findings indicate differences in the independent variables. Compared to respondents who were retained in the sample, those who were dropped

from the sample showed a lower proportion of living in a two-biological-parent family ($F(1, 1980) = 25.89$, $p < .001$; mean difference = -0.19) and a higher proportion of living in other family ($F(1, 1980) = 29.78$, $p < .001$; mean difference = 0.15). With regards to adolescent precursors, deleted respondents were more likely to be Black than retained respondents ($F(1, 1985) = 9.38$, $p < .01$; mean difference = 0.08). Also, deleted respondents reported a lower GPA in high school ($F(1, 1895) = 12.79$, $p < .01$; mean difference = -0.23) and a higher proportion of having early sexual activity ($F(1, 1977) = 33.88$, $p < .001$; mean difference = 0.22) than retained respondents. No difference was found in the control variables.

In females, the mean difference test results indicate some differences between the missing and non-missing groups. Compared to respondents who were retained in the final sample, those who were dropped reported lower years of their parent's schooling ($F(1, 1812) = 3.93$, $p < .05$; mean difference = -0.36). Deleted respondents reported lower proportions of living in a two-parent family ($F(1, 1883) = 17.37$, $p < .001$; mean difference = -0.15) and in a single-parent family ($F(1, 1883) = 10.82$, $p < .01$; mean difference = -0.09) but a higher proportion of living in other family ($F(1, 1883) = 42.99$, $p < .001$; mean difference = 0.19) than retained respondents. Racial difference was found in the adolescent precursors: deleted respondents were more likely to be Black than retained respondents ($F(1, 1887) = 7.50$, $p < .01$; mean difference = 0.09). Lastly, deleted respondents had a lower GPA in high school ($F(1, 1813) = 5.09$, $p < .05$; mean difference = -0.14) and a higher proportion of having an early sexual activity ($F(1, 1879) = 15.47$, $p < .001$; mean difference = 0.15) than retained respondents. Except for the differences in the years of respondents' parental

schooling and the proportions of living in a single-parent family, the mean differences in male and female samples appeared to be similar to each other. However, the mean differences suggest that some of the characteristics may have inhibited the participants from completing the survey items (e.g., living in family without parents). In the current study, respondents who were missing any of the independent variables were dropped from the analyses; this potential bias must be considered when interpreting the results.

### *Weights*

As noted in the Data section, the supplemental sample oversampled Black and Hispanic respondents. To represent the national population within the same age range, the NLSY97 User's Guide recommends using sample weights to combine them appropriately with the cross-sectional sample. Without weights, the greater number of Black and Hispanic respondents may skew population estimates (e.g., means) toward Black and Hispanic estimates (U.S. Bureau of Labor Statistics, 2014b). Since both the cross-sectional and supplemental samples were used in this research, that bias may be reduced by weighting the data. The NLSY97 User's Guide recommends using a customized weight for research based on multiple survey years. Hence, a customized weight was utilized in this research, created by using the NLSY97 Custom Weighting program at the website (for further details regarding the use of weights in national longitudinal samples, refer to Stapleton, Harring, & Lee (2015)).

In addition to weights, the analyses included information on stratification and clustering because both affect parameter estimates, tests of model fit, and standard

errors (Asparouhov, 2005). Stratum and PSU identifiers were combined to create a scale of cluster identification, and this was included in the analyses to adjust standard errors of the parameter estimates for non-independence of observations.

## *Variables*

### Pathways to adulthood

To construct pathways to adulthood, the study utilized, as discussed in the previous chapter, four status variables related to becoming an adult (enrollment status, union status, parenthood status, and full-time employment status). Whether respondents occupy each of the statuses was assessed at three-year intervals from age 18 to age 30 (ages 18, 21, 24, 27, and 30), resulting in 20 variables (four statuses across five time points) for each respondent.

**Enrollment status.** Enrollment in secondary or postsecondary school was assessed by monthly records of schooling. For secondary school, if respondents were "attending grade K-12" or "on vacation" in any month at a given age, they were coded as being enrolled in secondary school. If they were "not enrolled," "expelled from school," or in "other" status in any month at a given age, they were coded as not being enrolled in secondary school. For postsecondary school, if respondents were "enrolled in 2-year-college," "enrolled in 4-year-college," or "enrolled in graduate school" in any month at a given age, they were coded as being enrolled in postsecondary school. If they were "not enrolled in college" during any month at a given age, they were coded as not being enrolled in postsecondary school. If respondents earned their bachelor's degree during the period observed, they were coded as college graduates for that and subsequent ages, regardless of whether or not

they were enrolled in graduate school at a given age. Respondents were finally coded as being enrolled in school (1) if they were coded as being enrolled in either secondary or postsecondary school. They were coded as not being enrolled in school (2) if they were coded as not being enrolled in either secondary or postsecondary school. Lastly, they were coded as college graduates (3) if they had obtained a college degree. If none of these statuses was available, respondents were coded as missing.

**Union status.** Young adults' monthly marital status histories were used to determine their union status. If they were "never married, cohabiting" in any month at a given age, they were coded as cohabiting (1). Those who were "married" in any month at a given age were coded as being married (2). If they were "never married, not cohabiting," "legally separated," "divorced," or "widowed" during any month at a given age, they were coded as being non-married, non-cohabiting (3). For example, say a woman was single at age 18 but cohabited from ages 19 to 25 and married at age 26 and remained married thereafter, her union status variables would be 3 at age 18, 1 at age 21, 1 at age 24, 2 at age 27, and 2 at age 30. Say that a woman, while she was 21, cohabited for three months and was later married for three months, she would be coded as 2 for the union status variable at age 21, as this study prioritized marriage over cohabitation. It should be noted that this categorization only counts cohabitation prior to marriage and omits cohabitation among those who had previously been married because cohabitation histories are not available. Those with no cohabitation in existing rosters and with some missing household rosters prior to marriage were coded as being non-married, non-cohabiting. If monthly marital status histories were not available, union status was coded as missing.

**Parenthood status.** The age when respondents gave birth to their first resident child was calculated based on their fertility histories. Respondents were coded as being parents for that and subsequent ages (1). Those who had yet to give birth were coded as not being parents (2). The limitation of this definition is that respondents who never lived with their child were not considered as parents. This is likely to be more common among male respondents than female respondents. This limitation is addressed in the Discussion.

**Full-time employment status.** Full-time employment is defined here as a job at a given age at which respondents worked 35 hours or more per week and for at least 26 weeks or more (6 months or more). The cutoff of 26 weeks or more (6 months or more) may seem arbitrary but it represents half or more of the entire 12 months of a given age, and follows the example set by an earlier study (Oesterle et al., 2010). If they met this criterion based on their weekly employment status histories, they were coded as being employed full-time (1). Otherwise they were coded as not being employed full-time (2). Those whose employment statuses were not available were coded as missing.

### Family precursors

**Parent education.** The highest grade completed by a respondent's biological, residential, or adoptive parent was used to measure parent's education level. This variable was available in the parent survey in round 1, ranging from 0 (none) to 20 ($8^{th}$ year college or more). The first source of this information was a respondent's residential mother. To reduce the number of missing cases on this variable, if this is not available, his or her residential father's education was chosen. If neither

residential parent's education was available, a biological mother's education and, if this was not available, a biological father's education was selected.

Next, if none of these types of parent's education was available, the highest degree received by a respondent's parents in the childhood retrospective survey was selected. A biological mother was the most preferred parent, followed by a biological father, an adoptive mother, and an adoptive father. Because parent's education level in the childhood retrospective survey was assessed on a scale of 1 (none) to 8 (professional degree (DDS, JD, MD)), it was converted to the scale used in the parent survey. For example, say a respondent reported that his or her biological mother's highest educational degree was "high school diploma (Regular 12 year program)." This would be re-coded as 12 ($12^{th}$ grade). This conversion could underestimate the actual years in school, which is addressed as a limitation in the Discussion.

**Economic hardship.** Economic hardship was captured with five items. The first item was drawn from the parent survey, asking "Sometimes children go through hard times. For example, they live in a place without water or electricity, or in a homeless shelter. To the best of your knowledge, has [this youth] ever experienced such hard times?" The remaining four items came from the recipiency histories of these programs (Aid to Families with Dependent Children (AFDC)/Temporary Assistance for Needy Families (TANF)/Aid to Dependent Children (ADC), the Women, Infants, and Children (WIC) program, Food Stamps, and unemployment insurance) while respondents were between age 14 to 17. If respondents experienced any of these five economic hardships, they were coded as yes (1). Otherwise, they

were coded as no (0). They were coded as missing if there was no information on any of the five items.

**Family structure.** Family structure was measured using the relationship of the parent figure(s)/guardian(s) in the household to the respondent in the first survey round. Respondents were coded into four categories: living in a two-biological-parent family, living in a step-parent family (two parents, biological mother; two parents, biological father), living in a single-parent family (biological mother only; biological father only), and living in other family (adoptive parent(s); foster parent(s); no parents, grandparents; no parents, other relatives; anything else). Respondents who did not have this information were coded as missing.

**Family instability.** Family instability was assessed using the relationships of the parent figure(s)/guardian(s) in the household to the respondent when respondents were at ages 2, 6, 12, and the first survey. At each time point, the relationships were first classified into three categories depending on the presence and number of biological parents in the household: two parents in the household (both biological parents; biological mother, other parent present; biological father, other parent present), one parent in the household (biological mother, marital status unknown; biological father, marital status unknown), and no parent in the household (adoptive parent(s); foster parent(s); other adults; group quarters). Next, the number of changes among these categories across the four time points was calculated, ranging from 0 to 3. For example, say respondents lived with both biological parents at ages 2, 6, 12, and the first survey. Their family instability variable would be coded as 0 because the number of parent's co-residential union changes is 0. If respondents lived with both

biological parents at age 2, with a single parent at ages 6 and 12, and with no parent at the first survey, their family instability variable would be coded as 2 (first change from age 2 to 6 and second change from age 12 to first survey). A higher score indicates more changes in the parent's co-residential union statuses. The relationships of the parent figure(s)/guardian(s) in the household to the respondent at ages 2, 6, and at 12 were first asked in round 1. If this was not available, the identical questions asked in the childhood retrospective survey were selected. Respondents who did not answer any of these questions were coded as missing. Since the parent's co-residential union statuses were captured only at four time points, this research could underestimate their actual number of co-residential union status changes.

**Adolescent precursors**

**Race.** Based on respondents' self-identified race and Hispanic and Latino origin, respondents were classified as being Black (1) and White (0). There were no missing cases on this item.

**GPA in high school.** This variable was first selected from the NLSY97 transcript survey conducted in 1999-2000 and in 2004 for respondents who provided written permission to contact their school for transcript collection and who already graduated or left high school. A majority of respondents were coded with their overall credit-weighted grade point averages on a 4-point scale. For those whose GPA in high school in the transcript survey was unavailable, their self-reported grades in high school ($9^{th}$ grade or higher) in the yearly surveys were chosen. Because the self-reported grades were letter grades, they were converted to a 4-point scale. Thus, higher scores indicate better grades, regardless of where this information came from.

Respondents who did not provide any of their grades in high school were coded as missing.

**Delinquency.** Delinquency was measured using the Delinquency Index Score provided by the NLSY97 in the youth questionnaire. The Delinquency Index items were adopted from items developed by Del Elliot to capture delinquency and criminality in the National Youth Survey (U.S. Bureau of Labor Statistics, 2014b). There were 10 items in the Index asking whether or not respondents had experienced delinquent/criminal acts, such as carrying a hand gun, belonging to a gang, or being arrested by the police or taken into custody for an illegal or delinquent offense (not including arrests for minor traffic violations). Because these items were asked on a binary scale (Yes/No), the responses were summed for a possible total of 10. Higher scores indicate more delinquency. Their Delinquency Index score in the first survey round was selected for this study, and respondents who did not answer these questions were coded as missing.

**Early sexual activity.** Respondents were asked whether they had "ever had sexual intercourse, that is, made love, had sex, or gone all the way with a person of the opposite sex." For those who answered yes to this item, they were asked to report how old they were at that time. These two items were used to determine the age of respondents' first time having sex. Those who had their first sex in early adolescence (before age 15) were coded as 1; those who had their first sex at age 15 or older or those who had never had sex were coded as 0. Respondents who had had sex but left their age unreported were coded as their age when they first reported that they had

experienced sexual activity. Those who did not answer any of these questions were coded as missing.

### Control variables

The first research question is descriptive, so no control variables were needed. Below are the control variables for the second set of research questions.

**Maternal age at first birth.** Maternal age at first birth was measured using the age of the respondents' biological mother when she gave birth to her first child. The NLSY97 User's Guide suggests that extreme responses, such as a first birth occurring at age 3, may reflect unedited interview data that were reported during the survey. Thus, this study deleted responses reporting under the age of 10. The cutoff of age 10 may still seem to be young but this has been used in the birth reports by the Center for Disease Control and Prevention. For those who did not have this information in the parent's survey, their birth order was calculated among siblings who have the same biological parents in the household roster in the first survey round. If they were the firstborn, the maternal age at the respondent's birth was selected. For those who still did not have this information, this variable was imputed with the estimated age by subtracting the age of the oldest child on the household roster in round 1 from the age of the resident mother. This was missing when she did not live with the oldest child in round 1. In this case, her age was brought from subsequent survey rounds when she first appeared on the household roster and calculated based on her date of birth and the survey date. Unfortunately, these approaches do not take into consideration non-resident children. Age at first birth for

respondents whose information was not available in any of these procedures was coded as missing.

**Young adults' age.** Respondents' age in the first survey round was included as a control variable. No respondents had missing values on this item.

### *Analysis Strategy*

First, descriptive statistics were estimated on all of the variables for men and women in SAS 9.3. Next, to address two sets of research questions, repeated-measures latent class analysis (RMLCA) was conducted separately for men and women. RMLCA refers to a latent class analysis (LCA) model applied to a longitudinal data set so that categorical indicators of the latent variable are repeatedly measured three or more times (Collins & Lanza, 2010). LCA enables us to identify latent classes or subgroups among a set of observed categorical variables (Clogg, 1995), resulting in a small but distinctive number of classes or subgroups. This is similar to cluster analysis, in that both are useful to discover groups of individuals based on observed data. However, LCA is a 'model-based' clustering approach using a probabilistic model that describes distribution of data; cluster analysis is largely a non-parametric approach based on a set of ad-hoc rules and procedures. Thus, LCA estimates each individual's probability of membership in each class, whereas cluster analysis assigns individuals into subgroups absolutely. Another analogous model of LCA is factor analysis because both posit an underlying latent variable that is measured by observed variables (Collins & Lanza, 2010). Their key difference is the nature of latent and observed variables. In LCA, both variables are categorical; in factor analysis, both are continuous. In addition, LCA is a person-centered approach,

so its goal is to look for subtypes of individuals that exhibit similar characteristics. Factor analysis is, however, a variable-oriented approach, identifying relationships between variables. Because the pathway to adulthood in this research is a hypothesized construct that is assumed to be latent and categorical and that implies the dynamics of young adults' statuses across an extended period of time, RMLCA, or LCA applied to a longitudinal data set, is considered to be the most appropriate approach. Below is a brief overview of LCA for a better understanding of RMLCA.

Suppose that there are a set of *J* dichotomous observed variables (j = 1, …, *J*) and that *L* represents the categorical latent variable with *k* = 1, …, *K* latent classes. The probability of observing a particular response pattern "y" is expressed in the following formula.

$$P(Y = y) = \sum_{k=1}^{K} \Pr(c = k) \Pr(Y = y | c = k)$$

This formula can be broken into two important ideas. The first one is *class membership probability*, referring to the expected probability of belonging to each latent class within the data set. The total of the class membership probabilities should be 1, regardless of the number of classes identified.

$$\sum_{k=1}^{K} \Pr(c = k) = 1$$

The second idea is *local independence*, which is a fundamental assumption in LCA. This assumption indicates that conditional on class membership, the observed variables are independent.

$$\Pr(Y = y|c = k) = \prod_{j=1}^{J} \Pr(yj|c = k)$$

Hence, in this formula the probability of obtaining a response pattern "y" for latent class *k* can be found by multiplying the probabilities of observing each response conditional on a particular latent class *k* (Collins & Lanza, 2010).

Additionally, LCA yields *item-response probabilities conditional on class membership* (or *class-specific item-response probabilities*). It refers to the likelihood that members of a particular class will endorse an observed item (Lanza, Collins, Lemmon, & Schafer, 2007). It expresses the relation between each observed variable and each latent class and provides a basis for interpretation of the latent classes. These concepts introduced in LCA hold the same meaning in RMLCA. The difference is that researchers can obtain the item-response probabilities conditional on class membership across multiple time points in RMLCA.

The first step of RMLCA in this study was to include all of the 20 indicators in the model and estimate the highest log-likelihood values replicated multiple times. This step is very important because many of the indices to determine the appropriate number of classes are based on the log-likelihood statistic. To avoid local solutions (Hipp & Bauer, 2006; Li, Harring, & Macready, 2014), random starting values were increased in the second run: 100 initial-stage random values and 20 final-stage random values in the first run and 500 initial-stage random values and 100 final-stage random values in the second run. This estimation was conducted between 2 and 7 classes, because the 8-class models gave convergence problems. In the second run, the best log-likelihood values reported in this research were replicated from at least

24 times to 100 times, depending on the number of classes. This provides a confidence that the highest log-likelihood at a global solution was estimated in the models.

Then, the appropriate number of classes was determined for men and women. Information criteria, such as the Bayesian Information Criterion (BIC; Schwarz, 1978), and the sample-size adjusted BIC, were used to compare models with different numbers of classes. Lower scores on the latter two criteria indicate a preferred model (Nylund, Asparouhov, & Muthén, 2007). Both of the criteria only serve to compare relative model fit, so the bootstrapped likelihood ratio test (McLachlan & Peel, 2000) is also widely used in the literature. Because this test was not conducted with a weighted data set in M*plus*, this test result was not presented in this study. Another widely-known likelihood-ratio test is the Lo-Mendell-Rubin likelihood ratio test (Lo, Mendell, & Rubin, 2001); recently, this has been known to be flawed (Jeffries, 2003). Next, relative entropy is taken into consideration, which indicates the internal validity or accuracy of classification (Muthén, 2004; Petras & Masyn, 2010). Relative entropy ranges from 0 to 1, and higher scores indicate a preferred model. In addition to these statistical criteria, previous research findings were extensively used to determine the final number of classes in this study. Once the most appropriate number of classes was selected for both men and women, the meaning of the classes was interpreted to answer the first set of research questions.

After the number of classes was determined, the second and third steps were executed to answer the second set of research questions. In the second step, a most likely class variable was defined using the highest posterior probability from the

latent class posterior distribution obtained in the first step (Asparouhov & Muthén, 2014). In the third step, the most likely class variable was used as a nominal latent class indicator with uncertainty rates prefixed as the misclassification rates estimated in the first step. The second and third steps were simultaneously performed with the R3STEP option in M*plus* when including the independent variables in the analyses.

This new three-step approach is first discussed in the context of LCA in Vermunt (2010) and extended to any mixture modeling in Asparouhov and Muthén (2014). The second and third steps in the new three-step approach are particularly different from those in the conventional three-step approach in which individuals are deterministically assigned to one class to which they have the highest class membership probabilities. Bolck, Croon, and Hagenaars (2004) found that this conventional three-step approach underestimated the relationships between covariates and class membership. It can also be problematic when class membership probabilities are similar among classes (e.g., .33, .34, and .33). With the new three-step approach, less biased estimates were presented in this research.

### *Human Subjects Protection*

This study utilized a secondary data analysis of a publicly available NLSY97 data set. The NLSY97 was reviewed and approved by the institutional review boards at the Ohio State University and the NORC at the University of Chicago that manage and conduct the survey. The participants' informed consent was obtained by these investigators. Confidentiality was maintained in this research, as there was no contact with respondents and no identifiable information (e.g., names, addresses) in the data. There were no foreseeable risks or benefits to the respondents in these analyses. The

research proposal was submitted to the University of Maryland Institutional Review Board and on February 10, 2016, notification was received that this project was exempt from human subject review.

# Chapter 4: RESULTS

This chapter begins with descriptive statistics of the key variables and findings about latent classes identified in men and women. Next the chapter provides the associations between the precursors and membership in the pathways to adulthood in men and women. The chapter concludes with findings as to whether race moderates the associations between two family structure experience variables and membership in the pathways to adulthood.

## *RQ 1: Identifying the Pathways to Adulthood*

### Descriptive Analyses

Table 2 presents the weighted proportions of men and women in various statuses by age. With regards to enrollment status in men, as the proportion enrolled in school declined from .80 at age 18 to .06 at age 30, the proportion not enrolled in school and graduated from college increased from .20 to .65 and .00 to .29, respectively. Changes in enrollment status of women were similar to those of men, but the proportions of females enrolled in school and graduated from college were slightly higher than those of males across all age points. For example, the proportion of women enrolled in school was .84 at age 18 and .09 at age 30; that of college graduates was .00 at age 18 and .38 at age 30.

Changes in union status varied by not only the gender of the respondents but also the specific types of unions that they form. First, the proportion cohabiting increased from age 18 to the mid-twenties, then decreased afterwards in both genders. The highest proportion cohabiting was even lower than .25, suggesting that this form

of union (cohabitation prior to marriage) was not dominant in both genders in this research sample (As noted, cohabitation following marriage is not included). The proportion married was the lowest at age 18 in both genders (.01 in men and .05 in female), but it became the highest at age 30 (.44 in men and .51 in women). The gender discrepancy gradually increased from .04 at age 18 to .10 at age 27 (.34 in men and .44 in women) then it decreased to .07 at age 30 (.44 in males and .51 in females). Regardless of age, the proportion married was higher for women than for men. Lastly, the proportion single (neither married nor cohabiting) continuously declined in both genders from .92 at age 18 to .39 at age 30 in men and from .81 to .34 in women.

With regards to parenthood status, 13% of women were already parents at age 18, whereas 6% of their male counterparts were. As respondents aged, the proportion of parents increased in both genders, but gender differences were also found at later ages. More than half of women (.54) were parents at age 27 and 70% were parents at age 30, whereas it was not until age 30 that half of men became parents (.59). These are quite similar to national statistics: the probability of a woman having a first child was 65% by age 30 and the comparable probability for men was 52% by age 30 (U.S. National Center for Health Statistics, 2012).

Regarding employment status, less than one-third of men (.27) and less than one-fifth of women (.19) were employed full time at age 18. Across all age points, the proportion of full-time employees was always higher in men than in women. At age 30, almost 70% of men worked at a full-time job whereas for women the proportion was only slightly higher than .50. Because the number of respondents whose

employment information was available declined from age 27 to age 30, these statistics should be viewed with caution.

Table 2. Weighted Proportions of Men and Women in Various Statuses by Age

| | Men ($N$ = 2,185) | | | | | Women ($N$ = 2,086) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.80 | 0.37 | 0.13 | 0.08 | 0.06 | 0.84 | 0.47 | 0.17 | 0.11 | 0.09 |
| Not in school | 0.20 | 0.60 | 0.67 | 0.68 | 0.65 | 0.16 | 0.48 | 0.55 | 0.56 | 0.53 |
| College graduates | 0.00 | 0.03 | 0.20 | 0.24 | 0.29 | 0.00 | 0.05 | 0.28 | 0.33 | 0.38 |
| *N* | 2,120 | 2,063 | 1,991 | 1,919 | 1,744 | 2,023 | 1,985 | 1,932 | 1,893 | 1,800 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.07 | 0.16 | 0.21 | 0.21 | 0.18 | 0.14 | 0.22 | 0.23 | 0.20 | 0.14 |
| Marriage | 0.01 | 0.09 | 0.23 | 0.34 | 0.44 | 0.05 | 0.17 | 0.32 | 0.44 | 0.51 |
| Non-married, non-cohabited | 0.92 | 0.75 | 0.56 | 0.45 | 0.39 | 0.81 | 0.61 | 0.45 | 0.36 | 0.34 |
| *N* | 2,131 | 2,062 | 1,984 | 1,900 | 1,686 | 2,040 | 1,984 | 1,920 | 1,862 | 1,727 |
| Parenthood status | | | | | | | | | | |
| Yes | 0.06 | 0.17 | 0.30 | 0.43 | 0.59 | 0.13 | 0.28 | 0.42 | 0.54 | 0.70 |
| No | 0.94 | 0.83 | 0.70 | 0.57 | 0.41 | 0.87 | 0.72 | 0.58 | 0.46 | 0.30 |
| *N* | 2,184 | 2,077 | 1,990 | 1,957 | 1,909 | 2,086 | 2,001 | 1,940 | 1,917 | 1,878 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.27 | 0.47 | 0.68 | 0.69 | 0.72 | 0.19 | 0.37 | 0.57 | 0.56 | 0.55 |
| No | 0.73 | 0.53 | 0.32 | 0.31 | 0.28 | 0.81 | 0.63 | 0.43 | 0.44 | 0.45 |
| *N* | 2,093 | 2,020 | 1,947 | 1,856 | 1,582 | 2,008 | 1,942 | 1,889 | 1,828 | 1,649 |

*Note*. All proportions are subject to rounding error.

**Model Selection**

The author first examined the fit statistics to identify the number of classes for men and women. Table 3 presents the fit statistics of the RMLCA models with between 2 and 7 classes. For both men and women, there was no single model that all of the fit indices pointed to as the most preferred one. The BIC and S-BIC declined continually as the estimated number of classes increased, suggesting that models with more classes are preferred. Although the relative entropy is not the fit index, it was quite high (greater than .85) in all models. In men, the entropy did not change between the 4- and 6-class models; in women, there was a minimal decrease from the 4-class to the 6-class model (.92 to .88). It was thus necessary to examine the classes in each of the models between 4 and 6 classes and decide the most theoretically meaningful and parsimonious one.

The 4-class model in Appendices 3 and 4 had only one class characterized by a high probability of being a college graduate ("college-educated married working parents" pathway). Since there were two classes characterized by a high probability of being college graduates in the 5- and 6-class models and these had been identified in prior literature, the 4-class model was not selected. There was substantive overlap between the 5- and 6-class models, but the difference was that there were two classes that could be named as "high-school-educated married parents" in the 6-class model (see Appendices 5 and 6). One class showed that the probability of becoming a parent was already 1 at age 24; in contrast, the other class showed that it was nearly 0 until age 24 and increased thereafter. As noted in the previous chapter, whether or not male respondents are parents at a given age may not be precise in this study because it was

measured by whether respondents lived with their child. In men, it may be redundant to have two similar classes except for the probability of being a parent. Another consideration when evaluating the 5- and 6-class models for both men and women was parsimony, meaning that "all else being equal, simpler models are preferred to more complex models" (Collins & Lanza, 2010, p. 82). The 5-class model had fewer parameters estimated than the 6-class model, and other classes overlapped between these two models. With these two considerations, alongside the fit indices, the 5-class model was finally selected.

Table 3. Fit Statistics of the Repeated-Measures Latent Class Models

| Number of classes | Log-likelihood value | Number of parameters | BIC | S-BIC | Relative entropy |
|---|---|---|---|---|---|
| Men ($N$ = 2,185) | | | | | |
| 2 | -23253.28 | 59 | 46960.22 | 46772.77 | 0.93 |
| 3 | -21297.46 | 89 | 43279.27 | 42996.50 | 0.90 |
| 4 | -20764.30 | 119 | 42443.64 | 42065.56 | 0.86 |
| 5 | -20290.91 | 149 | 41727.53 | 41254.14 | 0.86 |
| 6 | -19875.09 | 179 | 41126.58 | 40557.87 | 0.86 |
| 7 | -19668.21 | 209 | 40943.51 | 40279.48 | 0.85 |
| Women ($N$ = 2,086) | | | | | |
| 2 | -24357.24 | 59 | 49165.42 | 48977.97 | 0.91 |
| 3 | -22602.51 | 89 | 45885.25 | 45602.48 | 0.93 |
| 4 | -22061.09 | 119 | 45031.69 | 44653.61 | 0.92 |
| 5 | -21551.32 | 149 | 44241.45 | 43768.06 | 0.89 |
| 6 | -21218.65 | 179 | 43805.39 | 43236.69 | 0.88 |
| 7 | -21028.81 | 209 | 43655.02 | 42991.00 | 0.89 |

*Note*. BIC = Bayesian Information Criterion. S-BIC = Sample-size adjusted BIC.

**Men's Pathways to Adulthood**

The probabilities of obtaining four statuses at the five age points by class are presented in Table 4 and graphically depicted in Figure 3. Men in the first class, representing 13% of the sample ($n$ = 226), showed very high probabilities of being in school at age 21 (.83 - .98), plummeting to .20 at age 24, because a majority of them graduated from college. At age 30, it was almost a certainty that men in this class were college graduates (.98). In addition, the probability of being single (not-married, not-cohabited) was very high at age 18 (.99) and at age 21 (.80) but it dropped rapidly thereafter, as they tended to get married, showing the rising probability of being married from age 21 (.11) to age 30 (.96). The probabilities of being a parent were low before age 24, but increased thereafter and by age 30 reached .89. The probability of being employed full-time was low at age 21 (.22), but rapidly increased to .78 at age 24. These results indicate that most of men in this class by age 30 had graduated from college, were employed full-time, married, and parents. Thus, this is referred to as the college-educated married working parents pathway.

Compared to the first class, the second class ($n$ = 282, 13% of the sample) showed very similar patterns in enrollment status and full-time employment status, compared to those in the first class. The probability of being in school was high at ages 18 and 21, and thereafter the probability of being college graduates became the highest. The probability of being employed full-time rose rapidly from age 21 (.16) to age 24 (.64) and it continuously increased to .83 at age 30. Men in the second class, however, showed a very low probability of being a parent. It was 0 by age 27, and .11 at age 30. The probability of being married was also low (less than .03 by age 27 and

.23 at age 30). The probability of cohabiting gradually increased from .08 at age 24 to .23 at age 30, but a majority in this class were likely to be neither married nor cohabiting. Thus, this class is labeled as the college-educated single workers pathway.

Standing in stark contrast to those in the first two classes were men in the third class ($n$ = 446, 20% of the sample). At age 18, the probability of being in school was .55, which was much lower than that in the first two classes, and at all age time points the probability of being a college graduate was 0. In the union status, the probability of cohabiting was .20 at age 18 but at age 21 it increased to .33 and then decreased thereafter. The probability of being married gradually increased from .05 at age 18 to .36 at age 24 and then stayed at a similar level by age 30. These results suggest that some were likely to cohabit for a short period of time or get married, but a sizable fraction of men were likely to live without a partner during the observed periods. The probability of being a parent was already .28 at age 18 and rose to 1 at age 24. The probability of being employed full-time was around .5 from age 21. Based on the low probability of being in school and the high probability of being a parent, this class is referred to as the high-school-educated single parents pathway.

The fourth class ($n$ = 824, 38% of the sample) was characterized by a minimal fraction of college graduates and low probabilities of being married and being a parent. This group had a .81 probability of being in school at age 18. Some were likely to attend school at age 21 (.30) but a majority of them were unlikely to be in school anymore (.70). The probability of being married was very low (.00 at age 18 to .16 at age 30), and so was that of being a parent (.00 at age 18 to .16 at age 30). The probability of being employed full-time gradually increased throughout the observed

periods (.28 at age 18 to .59 at age 30). Thus, this class is referred to as the high-school-educated single workers pathway.

The fifth class ($n$ = 408, 19% of the sample) was similar to the fourth class with respect to changes in enrollment status. The difference was found in the probability of being married and that of being a parent. These were very low before age 21, but both gradually increased thereafter and by age 30 had reached .77 (being married) and .91 (being a parent). Men in this class also showed a high probability of being employed full-time at age 21 (.74) and it remained at that level to age 30 (.88). In highlighting the high probabilities of obtaining family-related statuses and working at a full-time job, alongside the low probability of being college graduates, this class is referred to as the high-school-educated married working parents pathway.

Table 4. Latent Pathways to Adulthood and Item-response Probabilities Conditional on Membership: Men (5-class model)

| | College-educated married working parents (*n*=226, 0.10) | | | | | College-educated single workers (*n*=282, 0.13) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.98 | 0.83 | 0.20 | 0.06 | 0.02 | 0.99 | 0.89 | 0.15 | 0.01 | 0.00 |
| Not in school | 0.02 | 0.06 | 0.03 | 0.01 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 |
| College graduates | 0.00 | 0.11 | 0.77 | 0.92 | 0.98 | 0.00 | 0.10 | 0.83 | 0.99 | 1.00 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.01 | 0.09 | 0.16 | 0.06 | 0.00 | 0.01 | 0.00 | 0.08 | 0.21 | 0.23 |
| Marriage | 0.00 | 0.11 | 0.52 | 0.87 | 0.96 | 0.00 | 0.00 | 0.01 | 0.03 | 0.23 |
| Non-married, non-cohabited | 0.99 | 0.80 | 0.31 | 0.07 | 0.04 | 0.99 | 1.00 | 0.91 | 0.77 | 0.54 |
| Parenthood status | | | | | | | | | | |
| Yes | 0.02 | 0.06 | 0.16 | 0.45 | 0.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.11 |
| No | 0.98 | 0.94 | 0.85 | 0.55 | 0.11 | 1.00 | 1.00 | 1.00 | 1.00 | 0.89 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.12 | 0.22 | 0.78 | 0.83 | 0.92 | 0.08 | 0.16 | 0.64 | 0.74 | 0.83 |
| No | 0.88 | 0.78 | 0.22 | 0.17 | 0.08 | 0.92 | 0.84 | 0.36 | 0.26 | 0.17 |
| | High-school-educated single parents (*n*=446, 0.20) | | | | | High-school-educated single workers (*n*=824, 0.38) | | | | |
| | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.55 | 0.09 | 0.07 | 0.06 | 0.08 | 0.81 | 0.30 | 0.18 | 0.13 | 0.09 |
| Not in school | 0.45 | 0.91 | 0.93 | 0.94 | 0.92 | 0.19 | 0.70 | 0.82 | 0.87 | 0.87 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.20 | 0.33 | 0.27 | 0.24 | 0.19 | 0.04 | 0.10 | 0.14 | 0.22 | 0.24 |
| Marriage | 0.05 | 0.24 | 0.36 | 0.35 | 0.38 | 0.00 | 0.02 | 0.05 | 0.08 | 0.16 |
| Non-married, non-cohabited | 0.75 | 0.44 | 0.36 | 0.41 | 0.43 | 0.95 | 0.89 | 0.81 | 0.70 | 0.60 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parenthood status | | | | | | | | | | |
| Yes | 0.28 | 0.74 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.16 |
| No | 0.72 | 0.26 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.96 | 0.84 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.38 | 0.57 | 0.60 | 0.54 | 0.57 | 0.28 | 0.45 | 0.57 | 0.58 | 0.59 |
| No | 0.62 | 0.42 | 0.40 | 0.46 | 0.43 | 0.72 | 0.55 | 0.43 | 0.42 | 0.41 |

| | High-school-educated married working parents ($n$=408, 0.19) | | | | |
|---|---|---|---|---|---|
| | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | |
| In school | 0.83 | 0.22 | 0.09 | 0.08 | 0.06 |
| Not in school | 0.17 | 0.78 | 0.91 | 0.92 | 0.93 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| Union status | | | | | |
| Cohabitation | 0.04 | 0.24 | 0.37 | 0.25 | 0.13 |
| Marriage | 0.01 | 0.10 | 0.35 | 0.67 | 0.77 |
| Non-married, non-cohabited | 0.95 | 0.66 | 0.28 | 0.08 | 0.10 |
| Parenthood status | | | | | |
| Yes | 0.00 | 0.00 | 0.28 | 0.67 | 0.91 |
| No | 1.00 | 1.00 | 0.72 | 0.33 | 0.09 |
| Full-time employment status | | | | | |
| Yes | 0.36 | 0.74 | 0.90 | 0.90 | 0.88 |
| No | 0.64 | 0.26 | 0.10 | 0.10 | 0.12 |

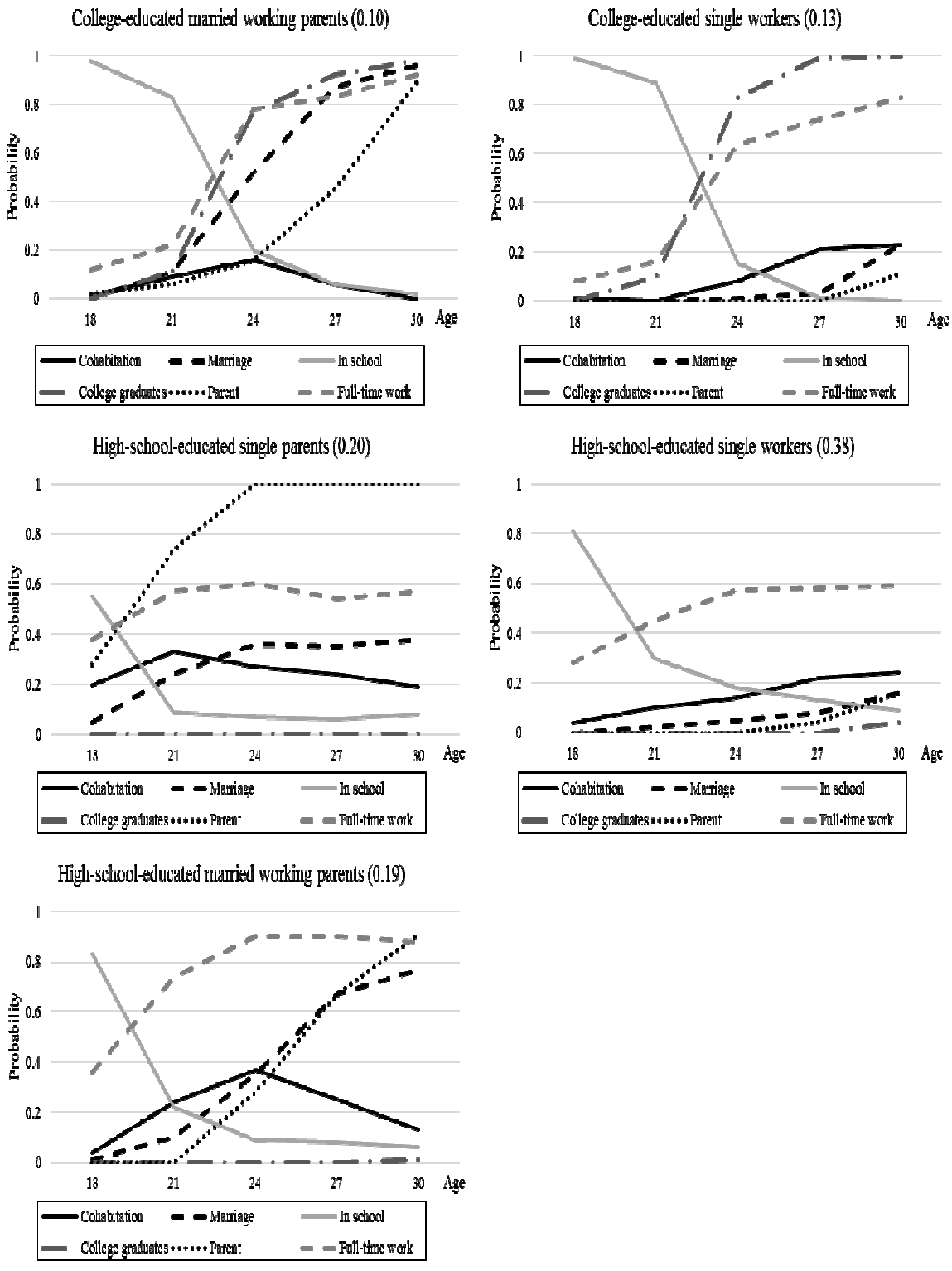



Figure 3. Five Pathways to Adulthood from Age 18 to Age 30 in Men

**Women's Pathways to Adulthood**

Table 5 and Figure 4 show the probabilities of being in the four statuses at different ages in each of the five classes. In the first class ($n$ = 266, 13% of the sample), the probability of being in school was very high until the age of 21 (.98 at age 18 and .84 at age 21), and that of being a college graduate became the highest after age 24 and reached 1 by age 30. Regarding union status, women in this class were highly likely to be single (non-married, non-cohabited) at ages 18 and 21, but they were highly likely to get married thereafter. The probability of being married at age 30 was .91. The probability of being a parent showed a similar pattern: it was very low until age 21 and increased rapidly from .23 at age 24 to .93 at age 30. The probability of being employed full-time peaked at age 24 (.72) and declined slightly to .62 at age 30. These results indicate that a majority of women in this class were highly likely to be college graduates, married, parents, and working full-time. Hence, this class is referred to as the college-educated married working parents pathway.

Women in the second class ($n$ = 403, 19% of the sample) were similar to those in the first class in enrollment status; a majority of them were likely to attend school by age 21 and became college graduates thereafter. At age 30, it was a certainty that women in this class were college graduates. The probability of being married was very low until age 27 and rose to .34 at age 30. Women in this class had a .23 probability of being a parent at age 30, but before this age, it was close to 0. The probability of being employed full-time increased rapidly from .15 at age 21 to .65 at age 24, and increased continually until age 30 (.82). This class was thus characterized

by being college graduates, working at a full-time job, and delaying marriage and childbirth, so it is referred to as the college-educated single workers pathway.

In the third class ($n$ = 354, 17%), the probability of being in school at age 18 was .65, which was the lowest when comparing to the probability at the same age in other classes. The probability of not being in school was over .80 from ages 21 to 30, but a small fraction of women were still likely to attend school. The probability of being a parent at age 18 was already .37 and rose to almost 1 at age 24, whereas the probability of being married was very low throughout their twenties. Instead, women were likely to either cohabit (.38 at age 24 and .39 at age 27) or live without a partner (.62 at age 24 and .61 at age 27). At age 30, a small portion of women were likely to be married (.13), which was higher than that at age 18 or 21. The probability of being employed full-time was lower than .50 throughout the age periods observed. This class was characterized by low levels of being in school and of working at a full-time job and a high probability of being a parent, so it is referred to as the high-school-educated single parents pathway.

Women in the fourth class ($n$ = 621, 30% of the sample) showed a high probability of being in school at age 18 (.88), which then dropped to .41 at age 21. This was higher than the same probability in the fifth class (.71 at age 18 and .21 at age 21). Presumably, women in the fourth class were likely to graduate from high school and go to college, but they were less likely to finish college. This was because the probability of being a college graduate was close to 0 and that of not being in school was quite high at age 24 (.75) and beyond. The probability of being married was very low until age 21, but increased from .19 at age 24 to .42 at age 30. The

probability of being single (neither married nor cohabited) gradually decreased from .88 at age 18 to .40 at age 30. Thus, at the end of their twenties, women in this class were similarly likely to be married or be single. The probability of being a parent was 0 by age 24, and it gradually rose to .39 at age 30. Lastly, the probability of being employed full-time was .52 at age 21 and slightly increased to .64 at age 24. These results suggest that women in this class tended to attend school in their early twenties and thereafter to work full-time. They were also likely to delay childbirth and marriage. Taken together, this class is referred to as the high-school-educated workers pathway.

The fifth class ($n$ = 443, 21% of the sample) was characterized by being married and becoming a parent at a relatively young age. The probability of being married was .14 at age 18, but continually increased to .80 at age 24. It was .87 at age 27, but slightly decreased to .79 at age 30, suggesting that some of the women were likely to divorce in their later twenties. The probability of being a parent was already .28 at age 18 and rose to 1 at age 27. However, the probabilities of being in school or being employed full-time were not high. The probability of being in school was .71 at age 18 and dropped rapidly to .21 at age 24. That of being college graduates was nearly 0. The probability of being employed full-time was never higher than .5. Thus, this class was referred to as the high-school-educated married parents pathway.

Table 5. Latent Pathways to Adulthood and Item-response Probabilities Conditional on Membership: Women (5-class model)

| | College-educated married working parents (*n*=266, 0.13) | | | | | College-educated single workers (*n*=403, 0.19) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.98 | 0.84 | 0.12 | 0.01 | 0.00 | 0.99 | 0.83 | 0.13 | 0.01 | 0.00 |
| Not in school | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.01 | 0.06 | 0.00 | 0.00 |
| College graduates | 0.00 | 0.15 | 0.87 | 0.99 | 1.00 | 0.00 | 0.16 | 0.81 | 0.99 | 1.00 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.03 | 0.11 | 0.21 | 0.04 | 0.01 | 0.02 | 0.09 | 0.20 | 0.30 | 0.20 |
| Marriage | 0.02 | 0.17 | 0.57 | 0.92 | 0.91 | 0.00 | 0.00 | 0.02 | 0.12 | 0.34 |
| Non-married, non-cohabited | 0.95 | 0.72 | 0.22 | 0.04 | 0.07 | 0.98 | 0.91 | 0.78 | 0.58 | 0.46 |
| Parenthood status | | | | | | | | | | |
| Yes | 0.01 | 0.07 | 0.23 | 0.51 | 0.93 | 0.00 | 0.00 | 0.00 | 0.04 | 0.23 |
| No | 0.99 | 0.93 | 0.77 | 0.49 | 0.07 | 1.00 | 1.00 | 1.00 | 0.96 | 0.77 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.11 | 0.22 | 0.72 | 0.70 | 0.62 | 0.07 | 0.15 | 0.65 | 0.80 | 0.82 |
| No | 0.89 | 0.78 | 0.28 | 0.30 | 0.39 | 0.93 | 0.85 | 0.35 | 0.20 | 0.18 |
| | High-school-educated single parents (*n*=354, 0.17) | | | | | High-school-educated workers (*n*=621, 0.30) | | | | |
| | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.65 | 0.20 | 0.18 | 0.15 | 0.16 | 0.88 | 0.41 | 0.25 | 0.19 | 0.12 |
| Not in school | 0.35 | 0.80 | 0.82 | 0.84 | 0.80 | 0.12 | 0.59 | 0.75 | 0.81 | 0.83 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.06 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.24 | 0.39 | 0.38 | 0.39 | 0.32 | 0.11 | 0.22 | 0.28 | 0.26 | 0.19 |
| Marriage | 0.03 | 0.04 | 0.00 | 0.00 | 0.14 | 0.01 | 0.07 | 0.19 | 0.32 | 0.42 |
| Non-married, non-cohabited | 0.72 | 0.57 | 0.62 | 0.61 | 0.54 | 0.88 | 0.71 | 0.52 | 0.42 | 0.40 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parenthood status | | | | | | | | | | |
| Yes | 0.37 | 0.75 | 0.97 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.16 | 0.39 |
| No | 0.63 | 0.25 | 0.03 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.84 | 0.61 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.26 | 0.37 | 0.38 | 0.40 | 0.39 | 0.21 | 0.52 | 0.64 | 0.61 | 0.57 |
| No | 0.74 | 0.63 | 0.62 | 0.60 | 0.61 | 0.79 | 0.48 | 0.36 | 0.39 | 0.43 |

| | High-school-educated married parents ($n$=443, 0.21) | | | | |
|---|---|---|---|---|---|
| | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | |
| In school | 0.71 | 0.21 | 0.12 | 0.14 | 0.14 |
| Not in school | 0.29 | 0.79 | 0.88 | 0.85 | 0.81 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 |
| Union status | | | | | |
| Cohabitation | 0.29 | 0.26 | 0.09 | 0.00 | 0.00 |
| Marriage | 0.14 | 0.52 | 0.80 | 0.87 | 0.79 |
| Non-married, non-cohabited | 0.57 | 0.21 | 0.12 | 0.13 | 0.21 |
| Parenthood status | | | | | |
| Yes | 0.28 | 0.61 | 0.92 | 1.00 | 1.00 |
| No | 0.72 | 0.39 | 0.08 | 0.00 | 0.00 |
| Full-time employment status | | | | | |
| Yes | 0.25 | 0.46 | 0.46 | 0.38 | 0.41 |
| No | 0.75 | 0.54 | 0.54 | 0.62 | 0.59 |

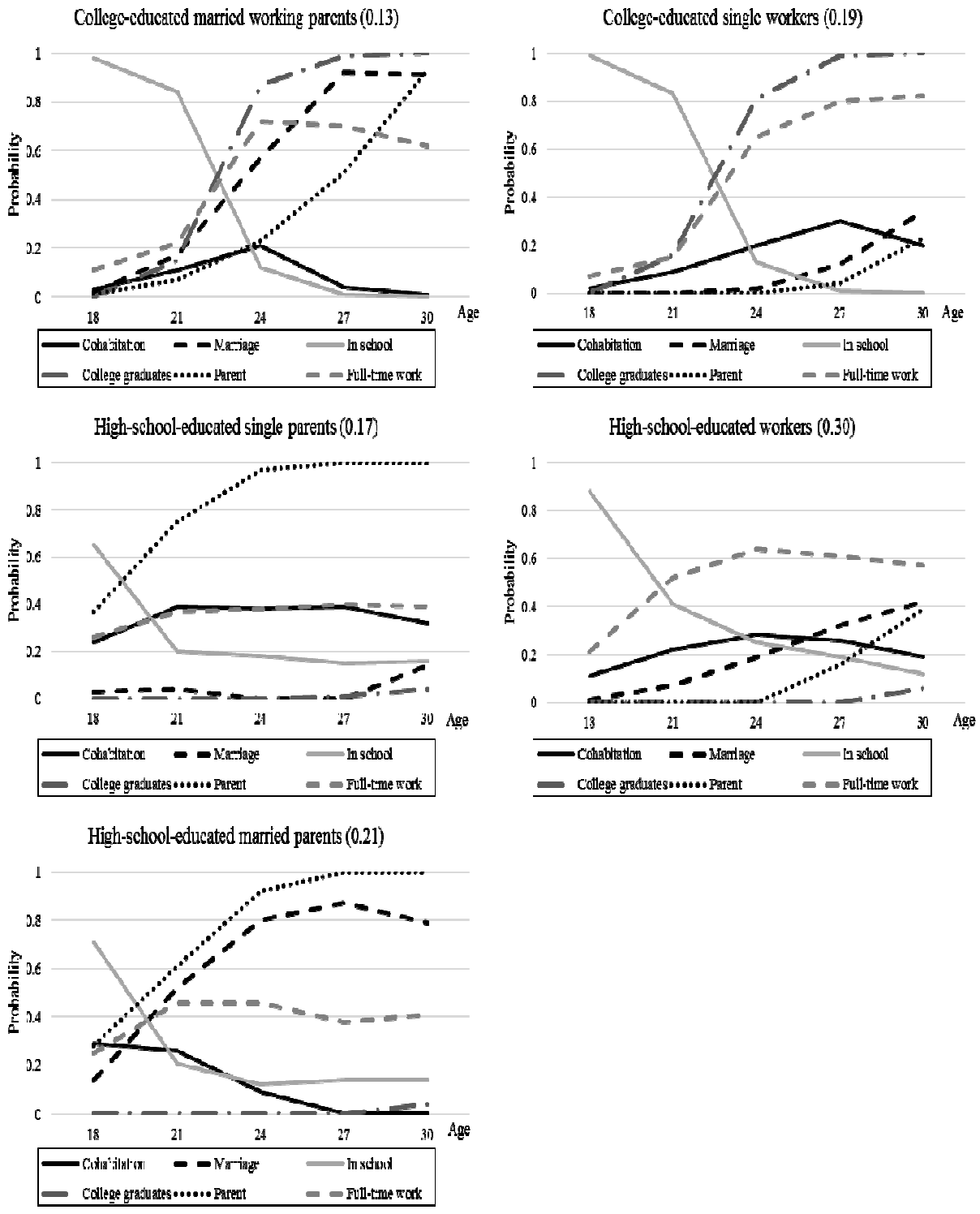



Figure 4. Five Pathways to Adulthood from Age 18 to Age 30 in Women

### Gender Differences in the Pathways to Adulthood

Although the number of pathways to adulthood identified was the same and there were similarities across gender, the descriptive statistics, definitions, and composition of some pathways differed by gender. Men and women on the first pathway (college-educated married working parents) were very similar with respect to changes in the enrollment status, union status, and parenthood status throughout the periods observed. The probability of being employed full-time was different from age 24 to age 30, however. Men showed an increase in the probability of being employed full-time (.78 to .92), whereas women showed a slight decrease (.72 to .62). This might be a reflection of some women quitting their job to raise their child.

Men and women on the second pathway (college-educated single workers) showed similarities in the changes in enrollment and employment statuses. However, differences were found in other aspects. First, when they began to become a parent differed by gender. Women began to enter parenthood at age 27 so their probability of being a parent at age 30 was already .23. Men began to enter parenthood at age 30, so their probability of being a parent was only .11 at age 30. Their second difference was found in the probability of being married. Although both men and women on this pathway were likely to get married starting at age 24, women were more likely than men to be married at age 30 (.34 for women and .23 for men). Overall, these two pathways, representative of a majority of college graduates, comprised 32% of the women's sample and 23% of the men's sample. This reflects the gender difference in the proportion of college graduates found in Table 2 and is similar to the difference shown in national statistics (U.S. Department of Education, 2014).

Men and women on the third pathway (high-school-educated single parents) were similar in that they became parents at a relatively young age. However, women began to become a parent at younger ages than men; the probability of being a parent at age 18 was higher in women (.37) than men (.28). Another gender difference was found in the probability of being married. Women were likely to live with a partner, rather than get married, by age 27, so the probability of being married was close to 0, whereas approximately one-third of men were likely to be married by age 27. Given changes in the union status throughout the age periods studied, both men and women tended to live in fragile families, but women were less likely to marry than men by age 30. The probability of being employed full-time was lower in women than in men.

Unlike the aforementioned three pathways, the name of the fourth pathway differed by gender (high-school-educated single workers for men and high-school-educated workers for women). This was because women tended to attend school longer than men, indicated by the higher probability of being in school in their twenties. Another reason was that women were likely to marry at an earlier age than were men, and the probability of being married at age 30 was higher in women (.42) than in men (.16). The probability of being a parent was also higher in women (.39 at age 30) than in men (.16 at age 30).

It is important to note that more than half of men and women on this pathway were yet to get married or give birth by age 30. Given that the probability of being college graduates was close to 0, involvement in postsecondary education does not explain why they tended to marry and become parents at later ages. Young adults on

this pathway may live with their parents due to economic reasons. It is also worth noting that men on this pathway represent 38% of the sample, and women on this pathway represent 30% of the sample, making them the most common pathways for both genders. Such a finding diverges from a previous one by Oesterle and colleagues (2010), who found the most prevalent pathway to be characterized by postsecondary education and a delay of marriage and childbirth.

Men and women on the fifth pathway (high-school-educated married working parents for men and high-school-educated married parents for women) were also different from each other in almost every aspect, although the lack of college graduates and involvement in marriage and parenthood were distinctive characteristics of this pathway in each gender. On enrollment status, men were slightly more likely to be in school than women at age 18 (.83 for men and .71 for women), but women were likely than men to attend school longer throughout their twenties. Women were likely than men to be married and become parents at younger ages, and women were less likely to work at a full-time job than men throughout their twenties.

In summary, five pathways to adulthood were identified in both genders. Although the names of the pathways were slightly different in some pathways from those posited in *Hypothesis 1a*, overall changes in the statuses from age 18 to age 30 were similar to findings reconciled across studies. *Hypothesis 1b*, suggesting that the pathways to adulthood will differ by gender, was also supported by the descriptive differences in four aspects. First, the probability of being married began to increase at younger ages for women than for men. Second, the probability of being a parent also

began to increase at younger ages for women than for men. Third, the proportion of pathways characterized by involvement in postsecondary education was higher for women than for men. Lastly, the probability of being employed full-time tended to be lower for women than for men. On the basis of the membership in the five pathways to adulthood, findings about precursors of the pathways follow in the next section.

### *RQ 2: Precursors of the Pathways to Adulthood*

#### Descriptive Analyses

Table 6 presents the weighted proportions or means and the standard deviations of the precursors and control variables in the final samples. Parents of male respondents had completed 13.21 years of schooling, and very few respondents (.05) reported experiencing economic hardship. Regarding family structure, about half of men (.55) lived in two-biological-parent families and 14% lived in step-parent families. A little more than one-fourth (.27) lived in single-parent families before they initiated their pathways to adulthood. They experienced less than one change in their parents' coresidential union status (.49).

Almost 80% of the men were White and 18% were Black. Their GPA in high school was 2.68, and their delinquency score was around 2, indicating few delinquent acts. Almost 40% of male respondents (.41) had had sex before age 15. Their mother's age at first birth was around 23, and their age at parental survey, or the first survey, was 15.26.

Descriptive statistics for women were similar to those for men. Parents of female respondents also had spent some years in college (13.22), and about one-tenth

experienced economic hardship. Almost half of the respondents (.51) lived with two biological parents and 15% lived with step-parents before they started their pathways to adulthood. Three in ten lived with single parents, and 3% lived in other types of families. As found for men, the number of parents' coresidential union changes experienced was also very low (.53).

A majority of women were White (.83) and 17% were Black. Their high school GPA was 2.97 and they reported about one delinquent act in adolescence (1.10). Almost one-third (36%) of the female respondents had had first sex before the age of 15. In terms of control variables, their mother's age at first birth was 23.34 and their age at parental survey was 15.28.

As documented in the Methods, economic hardship was measured with five items, including whether respondents participated in the WIC program. Since this is highly relevant to motherhood, the proportion of men who reported not only their participation in this program but also overall economic hardship was very low. This resulted in highly inflated coefficients of the economic hardship variable in the models in men. Correlations between the economic hardship variable and other variables were low (0.01 – 0.09) and the results were very similar regardless whether or not the economic hardship variable was included in the models. Thus, this variable was excluded in the following final analyses in men. Dropping this variable did not change the sample size. Zero-order correlations among the variables are presented in Table 7.

Table 6. Weighted Descriptive Statistics of the Precursors and Control Variables in the Final Samples

| | Men | | Women | |
|---|---|---|---|---|
| Variable | *M* | *SD* | *M* | *SD* |
| **Family precursors** | | | | |
| Family socioeconomic status | | | | |
| Parent's years of education | 13.21 | 2.45 | 13.22 | 2.36 |
| Economic hardship | 0.05 | | 0.13 | |
| Family structure experience | | | | |
| Family structure | | | | |
| Two-biological-parent family | 0.55 | | 0.51 | |
| Step-parent family | 0.14 | | 0.15 | |
| Single-parent family | 0.27 | | 0.30 | |
| Other family | 0.04 | | 0.03 | |
| Family instability | 0.49 | 0.73 | 0.53 | 0.73 |
| **Adolescent precursors** | | | | |
| Race | | | | |
| Non-Hispanic White | 0.82 | | 0.83 | |
| Non-Hispanic Black | 0.18 | | 0.17 | |
| GPA in high school | 2.68 | 0.69 | 2.97 | 0.67 |
| Delinquency | 2.04 | 2.18 | 1.10 | 1.61 |
| Early sexual activity | | | | |
| Yes | 0.41 | | 0.36 | |
| No | 0.59 | | 0.64 | |
| **Control variables** | | | | |
| Maternal age at first birth | 23.31 | 4.71 | 23.34 | 4.75 |
| Age at parental survey | 15.26 | 1.01 | 15.28 | 1.00 |
| *N* | 1,946 | | 1,847 | |

Table 7. Correlations among Precursors and Control Variables

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Parent education | - | -0.05$^{*}$ | -0.14$^{***}$ | -0.13$^{*}$ | -0.07$^{**}$ | -0.22$^{***}$ | -0.23$^{***}$ | 0.31$^{***}$ | -0.05 | -0.18$^{***}$ | 0.35$^{***}$ | -0.04 |
| 2. Step-parent family | -0.03 | - | -0.30$^{***}$ | -0.09$^{***}$ | 0.50$^{***}$ | -0.01 | -0.04 | -0.07$^{**}$ | 0.07$^{**}$ | 0.03 | -0.11$^{***}$ | 0.03 |
| 3. Single-parent family | -0.13$^{***}$ | -0.28$^{***}$ | - | -0.16$^{***}$ | 0.23$^{***}$ | 0.19$^{***}$ | 0.30$^{***}$ | -0.19$^{***}$ | 0.12$^{***}$ | 0.13$^{***}$ | -0.11$^{***}$ | 0.03 |
| 4. Other family | -0.05$^{*}$ | -0.09$^{***}$ | -0.15$^{***}$ | - | 0.05$^{*}$ | 0.11$^{***}$ | 0.12$^{***}$ | 0.08$^{***}$ | -0.00 | 0.07$^{**}$ | 0.14$^{***}$ | 0.01 |
| 5. Family instability | -0.06$^{**}$ | 0.52$^{***}$ | 0.20$^{***}$ | 0.05$^{*}$ | - | 0.08$^{***}$ | 0.05$^{*}$ | -0.13$^{***}$ | 0.12$^{***}$ | 0.11$^{***}$ | -0.10$^{***}$ | 0.03 |
| 6. Economic hardship | -0.09$^{***}$ | 0.07$^{**}$ | 0.09$^{***}$ | 0.01 | 0.07$^{**}$ | - | 0.19$^{***}$ | -0.23$^{***}$ | 0.14$^{***}$ | 0.26$^{***}$ | -0.19$^{***}$ | -0.03 |
| 7. Black | -0.20$^{***}$ | -0.04 | 0.30$^{***}$ | 0.12$^{***}$ | 0.07$^{**}$ | 0.06$^{*}$ | - | 0.24$^{***}$ | -0.02 | 0.14$^{***}$ | -0.29$^{***}$ | 0.07$^{**}$ |
| 8. GPA in HS | 0.22$^{***}$ | -0.09$^{***}$ | -0.18$^{***}$ | -0.02 | -0.10$^{***}$ | -0.09$^{***}$ | -0.24$^{***}$ | - | -0.25$^{***}$ | -0.25$^{***}$ | 0.21$^{***}$ | -0.06$^{**}$ |
| 9. Delinquency | -0.05$^{*}$ | 0.08$^{***}$ | 0.08$^{***}$ | 0.02 | 0.11$^{***}$ | 0.05$^{*}$ | -0.04 | -0.20$^{***}$ | - | 0.27$^{***}$ | -0.05$^{*}$ | 0.03 |
| 10. Early sexual activity | -0.22$^{***}$ | 0.04 | 0.21$^{***}$ | 0.06$^{**}$ | 0.11$^{***}$ | 0.09$^{***}$ | 0.32$^{***}$ | -0.31$^{***}$ | 0.27$^{***}$ | - | -0.13$^{***}$ | -0.03 |
| 11. Mat. age at 1$^{st}$ birth | 0.35$^{***}$ | -0.12$^{***}$ | -0.10$^{**}$ | -0.03 | -0.14$^{***}$ | -0.08$^{***}$ | -0.24$^{***}$ | 0.20$^{***}$ | -0.03 | -0.16$^{***}$ | - | -0.05 |
| 12. R. age at w1 | 0.00 | -0.01 | 0.04$^{*}$ | -0.03 | 0.02 | 0.04 | -0.00 | -0.00 | 0.05$^{*}$ | -0.02 | -0.00 | - |

*Note*. $^{*}$ $p < .05$. $^{**}$ $p < .01$. $^{***}$ $p < .001$. Mat. Age at 1$^{st}$ birth = maternal age at first birth, R. age at w1 = respondent's age at parental survey. Below the diagonal are correlations in men ($N$ = 1,946); above the diagonal are correlations in women ($N$ = 1,847).

### Precursors of the Pathways to Adulthood: Men

Table 8 presents the multinomial logistic regressions of latent class membership on precursors in men. Serving as a reference category was the college-educated married working parents pathway. As expected, parental educational attainment was a consistent predictor of young adults pursuing postsecondary education and delaying marriage or parenthood. A 1-year increase in parental schooling was associated with 13% greater odds of taking the college-educated single workers pathway (OR = 1.13, $p < .05$), 27% lower odds of taking the high-school-educated single parents pathway (OR = 0.73, $p < .001$), 11% lower odds of taking the high-school-educated single workers pathway (OR = 0.89, $p < .05$), and 20% lower odds of taking the high-school-educated married working parents pathway (OR = 0.80, $p < .001$) compared to the college-educated married working parents pathway. The odds of male respondents living in a single-parent family or living in other family taking the high-school-educated single parents pathway compared to the college-educated married working parents pathway were greater than the odds of male respondents living in a two-biological-parent family (OR = 2.53, $p < .01$, and OR = 12.42, $p < .01$, respectively). The odds of male respondents raised in a single-parent family or other family taking the high-school-educated single workers pathway compared to the college-educated married working parents pathway were greater than the odds of male respondents living in a two-biological-parent family (OR = 2.29, $p < .01$, and OR = 5.51, $p < .05$, respectively). Family instability was, however, not a significant predictor.

The odds of Black men taking the high-school-educated married working parents pathway compared to the college-educated married working parents pathway were lower than the odds of White men (OR = 0.33, $p < .01$). Like parental educational attainment, respondent's GPA in high school was highly associated with pursuing postsecondary education and delaying marriage or parenthood. Greater high school GPA was associated with 93% lower odds of taking the high-school-educated single parents pathway (OR = 0.07, $p < .001$), 93% lower odds of taking the high-school-educated single workers pathway (OR = 0.07, $p < .001$), and 91% lower odds of taking the high-school-educated married working parents pathway (OR = 0.09, $p < .001$) compared to the college-educated married working parents pathway. Delinquency score predicted men's membership in the pathways adulthood in the opposite way from high school GPA. Each additional score on the delinquency index was associated with 32% greater odds of taking the high-school-educated single parents pathway (OR = 1.32, $p < .001$) and 16% greater odds of taking the high-school-educated single workers pathway (OR = 1.16, $p < .05$) compared to the college-educated married working parents pathway. Lastly, early sexual activity experience was also a significant predictor, increasing the odds of taking the high-school-educated single parents pathway by 240% (OR = 3.40, $p < .001$), the high-school-educated single workers pathway by 97% (OR = 1.97, $p < .05$), and the high-school-educated married working parents pathway by 108% (OR = 2.08, $p < .01$) compared to the college-educated married working parents pathway. As a control variable, a 1-year increase in maternal age at first birth was associated with 7%

greater odds of taking the college-educated single workers pathway compared to the college-educated married working parents pathway (OR = 1.07, $p < .05$).

Table 8. Multinomial Logistic Regressions of the Pathways to Adulthood on Precursors: Men

| | Referent class: College-educated married working parents pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated single workers | | High-school-educated single parents | | High-school-educated single workers | | High-school-educated married working parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.12* | 1.13 | -0.32*** | 0.73 | -0.12* | 0.89 | -0.22*** | 0.80 |
| | (0.05) | [1.02, 1.25] | (0.06) | [0.65, 0.82] | (0.06) | [0.80, 0.99] | (0.06) | [0.72, 0.89] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.39 | 0.68 | 0.60 | 1.83 | 0.04 | 1.04 | -0.06 | 0.94 |
| | (0.49) | [0.26, 1.75] | (0.50) | [0.68, 4.88] | (0.53) | [0.37, 2.92] | (0.50) | [0.35, 2.52] |
| Single-parent family | -0.26 | 0.77 | 0.93** | 2.53 | 0.83** | 2.29 | 0.44 | 1.55 |
| | (0.36) | [0.38, 1.56] | (0.33) | [1.34, 4.79] | (0.32) | [1.23, 4.26] | (0.33) | [0.81, 2.99] |
| Other family | 0.03 | 1.03 | 2.52** | 12.42 | 1.71* | 5.51 | 1.02 | 2.79 |
| | (0.99) | [0.15, 7.16] | (0.78) | [2.69, 57.38] | (0.77) | [1.22, 24.81] | (0.85) | [0.53, 14.49] |
| Family instability | 0.25 | 1.28 | 0.35 | 1.45 | 0.13 | 1.14 | 0.22 | 1.25 |
| | (0.25) | [0.78, 2.10] | (0.25) | [0.77, 2.73] | (0.24) | [0.71, 1.82] | (0.24) | [0.78, 2.00] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |
| White (ref.) | | | | | | | | |
| Black | -0.02 | 0.99 | 0.37 | 1.45 | -0.57 | 0.57 | -1.12** | 0.33 |
| | (0.33) | [0.51, 1.89] | (0.32) | [0.77, 2.73] | (0.31) | [0.31, 1.04] | (0.33) | [0.17, 0.63] |
| GPA in high school | -0.48 | 0.62 | -2.69*** | 0.07 | -2.71*** | 0.07 | -2.45*** | 0.09 |
| | (0.26) | [0.37, 1.02] | (0.25) | [0.04, 0.11] | (0.23) | [0.04, 0.10] | (0.24) | [0.05, 0.14] |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Delinquency | -0.03 | 0.98 | 0.28*** | 1.32 | 0.15* | 1.16 | 0.09 | 1.09 |
| | (0.07) | [0.85, 1.12] | (0.07) | [1.14, 1.52] | (0.07) | [1.02, 1.33] | (0.07) | [0.95, 1.25] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | 0.45 | 1.57 | 1.22*** | 3.40 | 0.68* | 1.97 | 0.73* | 2.08 |
| | (0.31) | [0.87, 2.86] | (0.30) | [1.90, 6.07] | (0.29) | [1.13, 3.45] | (0.29) | [1.17, 3.69] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | 0.06* | 1.07 | -0.03 | 0.97 | -0.01 | 0.99 | -0.01 | 0.99 |
| | (0.03) | [1.02, 1.12] | (0.03) | [0.91, 1.03] | (0.03) | [0.93, 1.06] | (0.03) | [0.93, 1.05] |
| Age at parental survey | -0.02 | 0.98 | -0.14 | 0.87 | -0.11 | 0.89 | 0.03 | 1.03 |
| | (0.11) | [0.79, 1.22] | (0.12) | [0.69, 1.11] | (0.10) | [0.73, 1.09] | (0.12) | [0.82, 1.29] |
| Intercept | -1.36 | | 13.76*** | | 11.87*** | | 10.38*** | |
| | (2.28) | | (2.10) | | (1.91) | | (2.19) | |
| *N* | | | | 1,946 | | | | |

*Note.* * $p < .05$. ** $p < .01$. *** $p < .001$.

**Moderating Effects of Race: Men**

The next research question asked whether the effects of the two family structure experience variables are similar across two racial groups. The interactions between being Black and three subcategories of the family structure variable were first tested and presented in Table 9. There was one significant interaction between being Black and living in a single-parent family when comparing the high-school-educated single workers pathway to the college-educated married working parents pathway. For White men raised in single parent families, the odds of taking the high-school-educated single workers pathway compared to the college-educated married working parents pathway were 3.39 times (= exp(1.22), $p < .01$) the odds for those raised in two-biological-parent families. For Black men raised in single-parent families the comparable odds were 0.61 times (= exp(1.22 + (-1.72)), $p < .05$) for the odds for those raised in two-biological-parent families. Note that the coefficient of being Black (0.25) was added to the intercept.

That the positive association for men between living in a single-parent family and taking the high-school-educated single workers pathway compared to the college-educated married working parents pathway was weaker for Black men than for White men is presented in the probability metric in Figure 5. Holding all of the precursors and control variables at the values listed in *Note*, the predicted probability of White men raised in single-parent families taking the high-school-educated single workers pathway was 0.49, and the comparable probability of those raised in two-biological-parent families was 0.36. For Black men, the predicted probabilities were 0.34 and 0.38, respectively (Refer to Table 10 for the predicted probabilities of respondents in

other types of families). This finding is also presented in the odds metric in Appendices 7 and 8. Lastly, the interaction between being Black and family instability was examined and presented in Table 11, but it was not statistically significant.

Table 9. Multinomial Logistic Regressions Estimating Race as a Moderator of the Association Between Family Structure and the Pathways to Adulthood: Men

| | Referent class: College-educated married working parents pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated single workers | | High-school-educated single parents | | High-school-educated single workers | | High-school-educated married working parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.12* | 1.12 | -0.32*** | 0.73 | -0.13* | 0.88 | -0.23*** | 0.80 |
| | (0.05) | [1.02, 1.24] | (0.06) | [0.65, 0.81] | (0.06) | [0.79, 0.98] | (0.06) | [0.71, 0.89] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.32 | 0.73 | 0.95 | 2.58 | 0.32 | 1.37 | 0.13 | 1.14 |
| | (0.56) | [0.24, 2.17] | (0.58) | [0.83, 8.02] | (0.60) | [0.43, 4.42] | (0.57) | [0.38, 3.44] |
| Single-parent family | -0.07 | 0.93 | 1.24** | 3.45 | 1.22** | 3.39 | 0.72 | 2.05 |
| | (0.46) | [0.38, 2.30] | (0.44) | [1.47, 8.11] | (0.40) | [1.56, 7.35] | (0.41) | [0.92, 4.55] |
| Other family | 0.40 | 1.49 | 2.99** | 19.91 | 1.87 | 6.48 | 1.32 | 3.72 |
| | (1.39) | [0.10, 22.90] | (1.07) | [2.47,160.52] | (1.05) | [0.83, 51.05] | (1.10) | [0.43, 32.30] |
| Family instability | 0.20 | 1.22 | 0.25 | 1.28 | 0.02 | 1.02 | 0.14 | 1.15 |
| | (0.27) | [0.72, 2.04] | (0.26) | [1.77, 2.13] | (0.25) | [0.63, 1.66] | (0.25) | [0.70, 1.89] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |
| White (ref.) | | | | | | | | |
| Black | 0.39 | 1.48 | 1.16* | 3.19 | 0.25 | 1.28 | -0.65 | 0.52 |
| | (0.44) | [0.62, 3.53] | (0.48) | [1.25, 8.16] | (0.48) | [0.51, 3.26] | (0.50) | [0.19, 1.40] |
| GPA in high school | -0.48 | 0.62 | -2.70*** | 0.07 | -2.72*** | 0.07 | -2.47*** | 0.09 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (0.26) | [0.37, 1.03] | (0.25) | [0.04, 0.11] | (0.23) | [0.04, 0.10] | (0.24) | [0.05, 0.14] |
| Delinquency | -0.03 | 0.97 | 0.27*** | 1.31 | 0.15* | 1.16 | 0.09 | 1.09 |
| | (0.07) | [0.85, 1.12] | (0.07) | [1.14, 1.51] | (0.07) | [1.01, 1.32] | (0.07) | [0.95, 1.25] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | 0.47 | 1.60 | 1.24*** | 3.47 | 0.71* | 2.03 | 0.75* | 2.11 |
| | (0.31) | [0.87, 2.92] | (0.30) | [1.93, 6.23] | (0.29) | [1.15, 3.58] | (0.30) | [1.18, 3.79] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | 0.07* | 1.07 | -0.03 | 0.97 | -0.01 | 0.99 | -0.01 | 0.99 |
| | (0.03) | [1.01, 1.12] | (0.03) | [0.91, 1.03] | (0.03) | [0.93, 1.06] | (0.03) | [0.93, 1.05] |
| Age at parental survey | -0.02 | 0.98 | -0.15 | 0.87 | -0.11 | 0.89 | 0.03 | 1.03 |
| | (0.11) | [0.79, 1.22] | (0.12) | [0.68, 1.10] | (0.10) | [0.73, 1.09] | (0.12) | [0.82, 1.29] |
| Intercept | -1.35 | | 13.67*** | | 11.91*** | | 10.47*** | |
| | (2.30) | | (2.14) | | (1.94) | | (2.21) | |
| **Interactions** | | | | | | | | |
| Black × Step-parent family | -0.29 | 0.75 | -1.40 | 0.25 | -1.16 | 0.31 | -0.52 | 0.59 |
| | (0.94) | [0.12, 4.77] | (0.83) | [0.05, 1.25] | (0.82) | [0.06, 1.56] | (0.87) | [0.11, 3.25] |
| Black × Single-parent family | -0.91 | 0.40 | -1.42 | 0.24 | -1.72* | 0.18 | -1.11 | 0.33 |
| | (0.78) | [0.09, 1.86] | (0.75) | [0.06, 1.06] | (0.77) | [0.04, 0.81] | (0.84) | [0.06, 1.72] |
| Black × Other family | -1.54 | 0.22 | -1.39 | 0.25 | -0.64 | 0.53 | -0.92 | 0.40 |
| | (2.08) | [0.00, 12.69] | (1.74) | [0.01, 7.57] | (1.72) | [0.02, 15.37] | (1.97) | [0.01, 18.96] |
| *N* | | | | 1,946 | | | | |

*Note.* * $p < .05$. ** $p < .01$. *** $p < .001$.

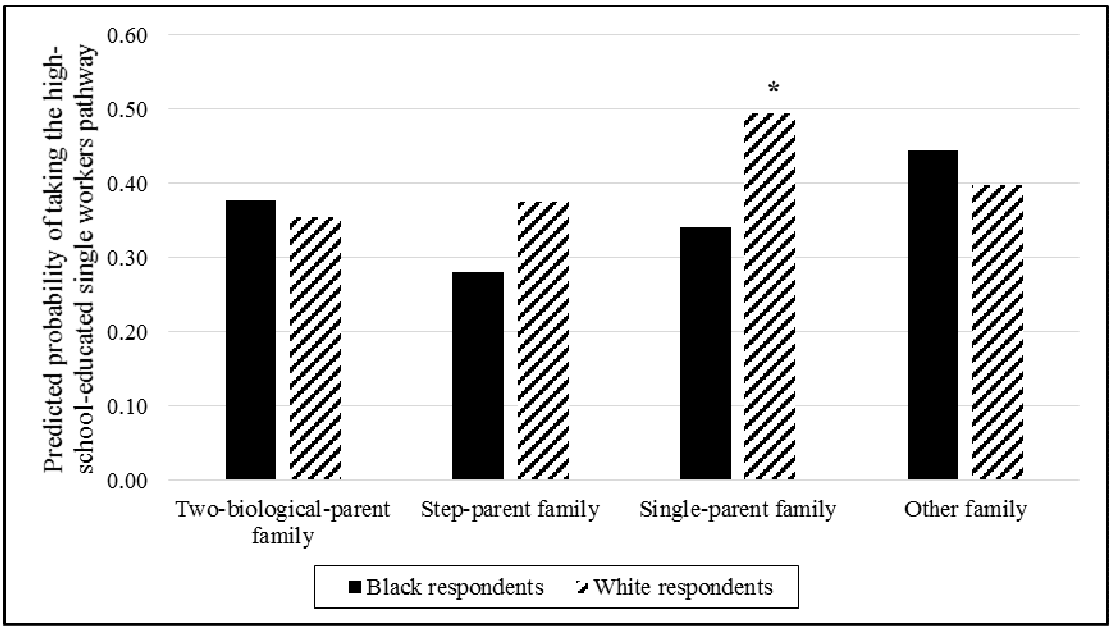



Figure 5. Predicted Probability of Male Respondents Taking the High-school-educated Single Workers Pathway Compared to the College-educated Married Working Parents Pathway by Race and Family Structure

*Note*. It was calculated based on the following information (Averages: parent's years of education, GPA in high school, delinquency, maternal age at first birth, and respondent's age at parental survey; One family instability and no early sexual activity). $^{*}p < .05$.

Table 10. Predicted Probability of Male Respondents Taking the High-school-educated Single Workers Pathway Compared to the College-educated Married Working Parents Pathway by Race and Family Structure

| | Black respondents | White respondents |
|---|---|---|
| Two-biological-parent family | 0.38 | 0.36 |
| Step-parent family | 0.28 | 0.38 |
| Single-parent family | 0.34 | 0.49 |
| Other family | 0.45 | 0.40 |

Table 11. Multinomial Logistic Regressions Estimating Race as a Moderator of the Association Between Family Instability and the Pathways to Adulthood: Men

| | Referent class: College-educated married working parents pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated single workers | | High-school-educated single parents | | High-school-educated single workers | | High-school-educated married working parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.12* | 1.13 | -0.32*** | 0.73 | -0.12* | 0.89 | -0.22*** | 0.80 |
| | (0.05) | [1.02, 1.25] | (0.06) | [0.65, 0.82] | (0.06) | [0.79, 0.99] | (0.06) | [0.72, 0.89] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.33 | 0.72 | 0.58 | 1.78 | 0.01 | 1.01 | -0.05 | 0.95 |
| | (0.50) | [0.27, 1.90] | (0.51) | [0.66, 4.81] | (0.53) | [0.36, 2.87] | (0.51) | [0.35, 2.56] |
| Single-parent family | -0.22 | 0.81 | 0.90** | 2.46 | 0.80* | 2.22 | 0.44 | 1.55 |
| | (0.37) | [0.39, 1.68] | (0.35) | [1.25, 4.83] | (0.33) | [1.16, 4.26] | (0.35) | [0.78, 3.09] |
| Other family | 0.03 | 1.03 | 2.49** | 12.09 | 1.68* | 5.37 | 1.04 | 2.83 |
| | (0.99) | [0.15, 7.17] | (0.79) | [2.59, 56.41] | (0.77) | [1.18, 24.32] | (0.85) | [0.54, 14.84] |
| Family instability | 0.17 | 1.19 | 0.40 | 1.49 | 0.17 | 1.19 | 0.22 | 1.25 |
| | (0.29) | [0.67, 2.12] | (0.27) | [0.87, 2.54] | (0.26) | [0.72, 1.98] | (0.26) | [0.74, 2.09] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |
| White (ref.) | | | | | | | | |
| Black | -0.21 | 0.81 | 0.49 | 1.63 | -0.44 | 0.65 | -1.16** | 0.31 |
| | (0.39) | [0.38, 1.74] | (0.40) | [0.75, 3.54] | (0.38) | [0.31, 1.36] | (0.41) | [0.14, 0.70] |
| GPA in high school | -0.48 | 0.62 | -2.69*** | 0.07 | -2.70*** | 0.07 | -2.45*** | 0.09 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (0.26) | [0.37, 1.03] | (0.25) | [0.04, 0.11] | (0.23) | [0.04, 0.11] | (0.24) | [0.05, 0.14] |
| Delinquency | -0.02 | 0.98 | 0.28*** | 1.32 | 0.15* | 1.16 | 0.09 | 1.09 |
| | (0.07) | [0.85, 1.12] | (0.07) | [1.14, 1.52] | (0.07) | [1.02, 1.33] | (0.07) | [0.95, 1.25] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | 0.45 | 1.57 | 1.22*** | 3.40 | 0.68* | 1.97 | 0.73* | 2.07 |
| | (0.30) | [0.86, 2.83] | (0.30) | [1.90, 6.07] | (0.29) | [1.13, 3.46] | (0.29) | [1.17, 3.68] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | 0.06* | 1.07 | -0.03 | 0.97 | -0.01 | 0.99 | -0.01 | 0.99 |
| | (0.03) | [1.02, 1.12] | (0.03) | [0.91, 1.03] | (0.03) | [0.93, 1.06] | (0.03) | [0.93, 1.05] |
| Age at parental survey | -0.01 | 0.99 | -0.14 | 0.87 | -0.11 | 0.89 | 0.03 | 1.03 |
| | (0.11) | [0.79, 1.23] | (0.12) | [0.68, 1.10] | (0.10) | [0.73, 1.09] | (0.12) | [0.82, 1.29] |
| Intercept | -1.40 | | 13.63*** | | 11.92*** | | 10.43*** | |
| | (2.30) | | (2.12) | | (1.93) | | (2.20) | |
| **Interaction** | | | | | | | | |
| Black × Family instability | 0.36 | 1.44 | -0.17 | 0.85 | -0.22 | 0.80 | 0.09 | 1.10 |
| | (0.50) | [0.54, 3.84] | (0.46) | [0.34, 2.09] | (0.47) | [0.32, 2.00] | (0.48) | [0.43, 2.82] |
| *N* | 1,946 | | | | | | | |

*Note.* * $p < .05$. ** $p < .01$. *** $p < .001$.

### Precursors of the Pathways to Adulthood: Women

Table 12 presents the multinomial logistic regressions of latent class membership on precursors in women. The college-educated married working parents pathway was used as a reference category. Unlike the previous model in men, both parental educational attainment and women's experience with economic hardship were used in the following analyses. A 1-year increase in parental schooling was associated with 30% lower odds of taking the high-school-educated single parents pathway (OR = 0.70, $p < .001$), 19% lower odds of taking the high-school-educated workers pathway (OR = 0.81, $p < .001$), and 23% lower odds of taking the high-school-educated married parents pathway (OR = 0.77, $p < .001$) compared to the college-educated married working parents pathway. The odds of women who experienced economic hardship in their upbringing taking the high-school-educated single parents pathway compared to the college-educated married working parents pathway were greater than the odds of women who did not experience it (OR = 5.26, $p < .01$). Also, the odds of women with economic hardship experience taking the high-school-educated married parents pathway compared to the college-educated married working parents pathway were greater than the odds of women who did not experience it (OR = 4.66, $p < .01$).

The odds of women raised in a step-parent family or in a single-parent family taking the high-school-educated single parents pathway compared to the college-educated married working parents pathway were greater than the odds of women raised in a two-biological-parent family (OR = 4.06, $p < .01$, and OR = 3.21, $p < .01$,

respectively). The association between family instability and women's pathways to adulthood was not statistically supported.

Most of the adolescent precursors were clear predictors of women's pathways to adulthood. The odds of Black women taking the high-school-educated single parents pathway compared to the college-educated married working parents pathway were higher than the odds of White women (OR = 3.60, $p < .001$). Women's greater high school GPA was associated with 90% lower odds of taking the high-school-educated single parents pathway (OR = 0.10, $p < .001$), 85% lower odds of taking the high-school-educated workers pathway (OR = 0.15, $p < .001$), and 88% lower odds of taking the high-school-educated married parents pathway (OR = 0.12, $p < .001$) compared to the college-educated married working parents pathway. In contrast, one additional unit in the delinquency score was associated with 42% greater odds of taking the high-school-educated single parents pathway (OR = 1.42, $p < .01$), 24% greater odds of taking the high-school-educated workers pathway (OR = 1.24, $p < .05$), and 29% greater odds of taking the high-school-educated married parents pathway (OR = 1.29, $p < .05$) compared to the college-educated married working parents pathway. Lastly, the odds of women who experienced early sexual activity taking the college-educated single workers pathway compared to the college-educated married working parents pathway were greater than the odds of women who did not experience it (OR = 2.19, $p < .01$). Having had early sexual activity was also associated with 143% greater odds of taking the high-school-educated single parents pathway (OR = 2.43, $p < .01$), 94% greater odds of taking the high-school-educated workers pathway (OR = 1.94, $p < .05$), and 136% greater odds of taking the high-

school-educated married parents pathway (OR = 2.36, $p < .01$) compared to the college-educated married working parents pathway. One control variable was statistically significant: A 1-year increase in maternal age at first birth was associated with 10% greater odds of taking the college-educated single workers pathway compared to the college-educated married working parents pathway (OR = 1.10, $p < .001$).

Table 12. Multinomial Logistic Regressions of the Pathways to Adulthood on Precursors: Women

| | Referent class: College-educated married working parents pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated single workers | | High-school-educated single parents | | High-school-educated workers | | High-school-educated married parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.01 | 1.01 | -0.35*** | 0.70 | -0.21*** | 0.81 | -0.26*** | 0.77 |
| | (0.05) | [0.91, 1.12] | (0.06) | [0.62, 0.80] | (0.05) | [0.73, 0.90] | (0.06) | [0.69, 0.87] |
| Economic hardship | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -1.47 | 0.23 | 1.66** | 5.26 | 0.10 | 1.10 | 1.54** | 4.66 |
| | (0.81) | [0.05, 1.12] | (0.55) | [1.78, 15.55] | (0.62) | [0.33, 3.70] | (0.53) | [1.65, 13.18] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.46 | 0.63 | 1.40** | 4.06 | 0.74 | 2.09 | 0.85 | 2.35 |
| | (0.51) | [0.23, 1.73] | (0.50) | [1.52, 10.85] | (0.47) | [0.84, 5.19] | (0.53) | [0.83, 6.66] |
| Single-parent family | -0.34 | 0.71 | 1.17** | 3.21 | 0.55 | 1.73 | 0.53 | 1.70 |
| | (0.37) | [0.35, 1.46] | (0.33) | [1.65, 6.23] | (0.32) | [0.93, 3.22] | (0.33) | [0.89, 3.23] |
| Other family | -0.48 | 0.62 | 0.93 | 2.54 | 0.65 | 1.91 | 0.55 | 1.73 |
| | (1.02) | [0.08, 4.53] | (0.77) | [0.57, 11.37] | (0.74) | [0.45, 8.08] | (0.77) | [0.38, 7.88] |
| Family instability | 0.41 | 1.50 | -0.12 | 0.89 | -0.03 | 0.97 | 0.06 | 1.06 |
| | (0.22) | [0.98, 2.29] | (0.22) | [0.58, 1.36] | (0.22) | [0.63, 1.49] | (0.27) | [0.63, 1.80] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |
| White (ref.) | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Black | 0.52 | 1.68 | 1.28*** | 3.60 | 0.09 | 1.10 | -0.55 | 0.58 |
| | (0.32) | [0.90, 3.14] | (0.30) | [2.00, 6.49] | (0.29) | [0.62, 1.92] | (0.34) | [0.29, 1.13] |
| GPA in high school | -0.17 | 0.84 | -2.28*** | 0.10 | -1.92*** | 0.15 | -2.13*** | 0.12 |
| | (0.21) | [0.56, 1.28] | (0.23) | [0.07, 0.16] | (0.22) | [0.09, 0.23] | (0.24) | [0.07, 0.19] |
| Delinquency | 0.03 | 1.03 | 0.35** | 1.42 | 0.22* | 1.24 | 0.26* | 1.29 |
| | (0.10) | [0.84, 1.25] | (0.11) | [1.15, 1.77] | (0.09) | [1.03, 1.49] | (0.10) | [1.06, 1.59] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | 0.79** | 2.19 | 0.89** | 2.43 | 0.66* | 1.94 | 0.86** | 2.36 |
| | (0.28) | [1.28, 3.76] | (0.31) | [1.31, 4.49] | (0.27) | [1.14, 3.30] | (0.32) | [1.26, 4.42] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | 0.10*** | 1.10 | -0.01 | 0.99 | 0.03 | 1.03 | -0.04 | 0.96 |
| | (0.02) | [1.05, 1.15] | (0.03) | [0.94, 1.04] | (0.03) | [0.98, 1.08] | (0.03) | [0.91, 1.01] |
| Age at parental survey | -0.15 | 0.87 | -0.14 | 0.87 | -0.15 | 0.86 | -0.05 | 0.95 |
| | (0.10) | [0.71, 1.06] | (0.12) | [0.69, 1.10] | (0.09) | [0.72, 1.03] | (0.11) | [0.76, 1.19] |
| Intercept | 0.36 | | 12.46*** | | 10.57*** | | 11.48*** | |
| | (1.91) | | (2.12) | | (1.76) | | (2.19) | |
| *N* | 1,847 | | | | | | | |

*Note.* * $p < .05$. ** $p < .01$. *** $p < .001$.

**Moderating Effects of Race: Women**

As previously conducted in men, the next step was to examine whether race moderates the associations between the two family structure experience variables and women's pathways to adulthood. The interactions between being Black and three subcategories of the family structure variable were first tested, but as presented in Table 13, none of the interactions was found to be statistically significant. Next, the interaction between being Black and family instability was investigated and presented in Table 14. A significant interaction was found when comparing the two pathways characterized by pursuing postsecondary education. For White women, the odds of taking the college-educated single workers pathway compared to the college-educated married working parents pathway increased by 79% (= exp(0.58), $p < .05$) as they experienced more instability in their upbringing. For Black women, the comparable odds decreased by 76% (= exp(0.58 + (-0.86)), $p < .05$) as they experienced more instability. Note that the coefficient of being Black (0.99) was added to the intercept.

Although the positive association between family instability and women's taking the college-educated single workers pathway compared to the college-educated married working parents pathway was not significant in the main effects model in Table 12, this association was found vary by race; it was weaker for Black women than for White women in the interaction model in Table 14. This significant result is presented in the probability metric in Figure 6, assuming that female respondents were raised in step-parent families. Holding all of the variables at the values listed in *Note*, the predicted probabilities of taking the college-educated single workers pathway compared to the college-educated married working parents pathway were

0.06 for White women and 0.08 for Black women when both did not experience any family instability. When they reported one change in family instability, the comparable probabilities were 0.09 for White women and 0.10 for Black women. When they reported two changes in parent's residential union during their upbringing, the comparable probabilities were higher for White women (0.14) than for Black women (0.11), and the gap became wider.

Figure 7 illustrates the predicted probabilities of women raised in single-parent families taking the college-educated single workers pathway compared to the college-educated married working parents pathway. Holding all of the variables at the values listed in *Note*, the predicted probabilities were 0.08 for White women and 0.12 for Black women when both did not experience any family instability. The comparable probabilities were 0.19 for White women and 0.15 for Black women when they reported two changes in parent's residential union during their upbringing. As shown in these two figures, the patterns of the predicted probabilities by the number of changes in parent's coresidential union statuses were very similar for those raised in step-parent families to those raised in single-parent families (Refer to Table 15). This significant interaction result is also presented in the odds metric in Appendices 9 to 11.

Table 13. Multinomial Logistic Regressions Estimating Race as a Moderator of the Association Between Family Structure and the Pathways to Adulthood: Women

| | Referent class: College-educated married working parents pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated single workers | | High-school-educated single parents | | High-school-educated workers | | High-school-educated married parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.01 | 1.01 | -0.35*** | 0.70 | -0.21*** | 0.81 | -0.26*** | 0.77 |
| | (0.06) | [0.91, 1.12] | (0.06) | [0.62, 0.79] | (0.05) | [0.73, 0.90] | (0.06) | [0.69, 0.87] |
| Economic hardship | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -1.47 | 0.23 | 1.66** | 5.27 | 0.10 | 1.11 | 1.55** | 4.69 |
| | (0.82) | [0.05, 1.14] | (0.55) | [1.79, 15.55] | (0.61) | [0.33, 3.69] | (0.53) | [1.66, 13.26] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.44 | 0.64 | 1.58** | 4.87 | 0.86 | 2.36 | 1.06 | 2.88 |
| | (0.55) | [0.22, 1.89] | (0.58) | [1.58, 15.03] | (0.51) | [0.87, 6.41] | (0.58) | [0.92, 9.00] |
| Single-parent family | -0.36 | 0.70 | 1.21** | 3.36 | 0.48 | 1.62 | 0.53 | 1.70 |
| | (0.41) | [0.31, 1.57] | (0.40) | [1.53, 7.36] | (0.36) | [0.80, 3.27] | (0.37) | [0.83, 3.48] |
| Other family | -0.50 | 0.61 | 1.05 | 2.87 | 0.48 | 1.62 | 0.68 | 1.98 |
| | (1.25) | [0.05, 7.06] | (0.98) | [0.42, 19.45] | (0.93) | [0.26, 9.96] | (0.92) | [0.33, 11.99] |
| Family instability | 0.41 | 1.50 | -0.13 | 0.88 | -0.03 | 0.97 | 0.05 | 1.05 |
| | (0.22) | [0.98, 2.31] | (0.22) | [0.57, 1.35] | (0.23) | [0.62, 1.52] | (0.27) | [0.61, 1.78] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| White (ref.) | | | | | | | | |
| Black | 0.53 | 1.70 | 1.55** | 4.71 | 0.03 | 1.03 | -0.14 | 0.87 |
| | (0.38) | [0.81, 3.57] | (0.47) | [1.88, 11.78] | (0.35) | [0.52, 2.07] | (0.48) | [0.34, 2.23] |
| GPA in high school | -0.17 | 0.84 | -2.29*** | 0.10 | -1.94*** | 0.14 | -2.15*** | 0.12 |
| | (0.21) | [0.55, 1.28] | (0.23) | [0.06, 0.16] | (0.22) | [0.09, 0.22] | (0.24) | [0.07, 0.19] |
| Delinquency | 0.03 | 1.03 | 0.35** | 1.42 | 0.21* | 1.24 | 0.26* | 1.29 |
| | (0.10) | [0.84, 1.26] | (0.11) | [1.14, 1.76] | (0.09) | [1.03, 1.49] | (0.11) | [1.05, 1.59] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | 0.78** | 2.19 | 0.88** | 2.41 | 0.65* | 1.91 | 0.84** | 2.32 |
| | (0.28) | [1.27, 3.77] | (0.32) | [1.30, 4.48] | (0.27) | [1.03, 1.49] | (0.32) | [1.23, 4.35] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | 0.10*** | 1.10 | -0.01 | 0.99 | 0.03 | 1.03 | -0.05 | 0.96 |
| | (0.02) | [1.05, 1.15] | (0.03) | [0.94, 1.04] | (0.03) | [0.98, 1.08] | (0.03) | [0.90, 1.01] |
| Age at parental survey | -0.15 | 0.87 | -0.14 | 0.87 | -0.15 | 0.86 | -0.05 | 0.95 |
| | (0.10) | [0.71, 1.06] | (0.12) | [0.69, 1.10] | (0.09) | [0.72, 1.03] | (0.12) | [0.76, 1.19] |
| Intercept | 0.34 | | 12.54*** | | 10.70*** | | 11.56*** | |
| | (1.91) | | (2.12) | | (1.78) | | (2.21) | |
| **Interactions** | | | | | | | | |
| Black × Step-parent family | -0.23 | 0.80 | -1.17 | 0.31 | -1.00 | 0.37 | -1.77 | 0.17 |
| | (0.92) | [0.13, 4.88] | (0.92) | [0.05, 1.87] | (0.89) | [0.06, 2.11] | (0.95) | [0.03, 1.09] |
| Black × Single-parent family | 0.10 | 1.10 | -0.12 | 0.89 | 0.35 | 1.41 | -0.18 | 0.84 |
| | (0.61) | [0.34, 3.62] | (0.65) | [0.25, 3.18] | (0.54) | [0.49, 4.05] | (0.68) | [0.22, 3.15] |
| Black × Other family | -0.14 | 0.87 | -0.42 | 0.66 | 0.62 | 1.85 | -0.89 | 0.41 |
| | (1.98) | [0.02, 42.38] | (1.53) | [0.03, 13.29] | (1.40) | [0.12, 28.54] | (1.36) | [0.03, 5.83] |
| *N* | | | | 1,847 | | | | |

*Note*. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 14. Multinomial Logistic Regressions Estimating Race as a Moderator of the Associations Between Family Instability and the Pathways to Adulthood: Women

| | Referent class: College-educated married working parents pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated single workers | | High-school-educated single parents | | High-school-educated workers | | High-school-educated married parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.01 | 1.01 | -0.35*** | 0.70 | -0.21*** | 0.81 | -0.25*** | 0.78 |
| | (0.06) | [0.91, 1.13] | (0.06) | [0.62, 0.80] | (0.05) | [0.73, 0.90] | (0.06) | [0.69, 0.87] |
| Economic hardship | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -1.39 | 0.25 | 1.68** | 5.37 | 0.12 | 1.12 | 1.56** | 4.76 |
| | (0.80) | [0.05, 1.19] | (0.56) | [1.78, 16.21] | (0.63) | [0.33, 3.85] | (0.54) | [1.65, 13.74] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.63 | 0.54 | 1.34** | 3.82 | 0.64 | 1.90 | 0.76 | 2.15 |
| | (0.52) | [0.19, 1.49] | (0.51) | [1.42, 10.29] | (0.47) | [0.75, 4.81] | (0.58) | [0.73, 6.30] |
| Single-parent family | -0.44 | 0.64 | 1.12** | 3.07 | 0.48 | 1.62 | 0.47 | 1.60 |
| | (0.37) | [0.31, 1.33] | (0.34) | [1.57, 6.00] | (0.32) | [0.86, 3.04] | (0.34) | [0.82, 3.10] |
| Other family | -0.59 | 0.55 | 0.88 | 2.41 | 0.57 | 1.77 | 0.48 | 1.62 |
| | (1.01) | [0.08, 4.02] | (0.76) | [0.55, 10.63] | (0.73) | [0.42, 7.45] | (0.77) | [0.36, 7.27] |
| Family instability | 0.58* | 1.79 | -0.05 | 0.95 | 0.08 | 1.08 | 0.17 | 1.18 |
| | (0.24) | [1.11, 2.89] | (0.25) | [0.58, 1.56] | (0.25) | [0.66, 1.76] | (0.30) | [0.66, 2.12] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| White (ref.) | | | | | | | | |
| Black | 0.99* | 2.70 | 1.52** | 4.56 | 0.41 | 1.51 | -0.24 | 0.79 |
| | (0.40) | [1.23, 5.90] | (0.41) | [2.04, 10.16] | (0.41) | [0.68, 3.34] | (0.47) | [0.32, 1.96] |
| GPA in high school | -0.18 | 0.83 | -2.29*** | 0.10 | -1.93*** | 0.15 | -2.14*** | 0.12 |
| | (0.21) | [0.55, 1.26] | (0.24) | [0.06, 0.16] | (0.23) | [0.09, 0.23] | (0.25) | [0.07, 0.19] |
| Delinquency | 0.02 | 1.02 | 0.35** | 1.42 | 0.21* | 1.24 | 0.26* | 1.29 |
| | (0.10) | [0.84, 1.25] | (0.11) | [1.15, 1.77] | (0.09) | [1.03, 1.49] | (0.11) | [1.05, 1.59] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | 0.78** | 2.18 | 0.89** | 2.43 | 0.66* | 1.93 | 0.86** | 2.35 |
| | (0.27) | [1.27, 3.72] | (0.31) | [1.31, 4.49] | (0.27) | [1.13, 3.29] | (0.32) | [1.25, 4.41] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | 0.10*** | 1.10 | -0.01 | 0.99 | 0.03 | 1.03 | -0.05 | 0.96 |
| | (0.02) | [1.05, 1.15] | (0.03) | [0.94, 1.04] | (0.03) | [0.98, 1.08] | (0.03) | [0.90, 1.01] |
| Age at parental survey | -0.15 | 0.87 | -0.14 | 0.87 | -0.15 | 0.87 | -0.05 | 0.95 |
| | (0.10) | [0.71, 1.06] | (0.12) | [0.69, 1.10] | (0.09) | [0.72, 1.03] | (0.12) | [0.76, 1.19] |
| Intercept | 0.36 | | 12.50*** | | 10.57*** | | 11.48*** | |
| | (1.90) | | (2.13) | | (1.78) | | (2.20) | |
| **Interaction** | | | | | | | | |
| Black × Family instability | -0.86* | 0.42 | -0.42 | 0.65 | -0.55 | 0.58 | -0.53 | 0.59 |
| | (0.40) | [0.19, 0.93] | (0.42) | [0.29, 1.48] | (0.45) | [0.24, 1.40] | (0.44) | [0.25, 1.39] |
| *N* | 1,847 | | | | | | | |

*Note.* * $p < .05$. ** $p < .01$. *** $p < .001$.

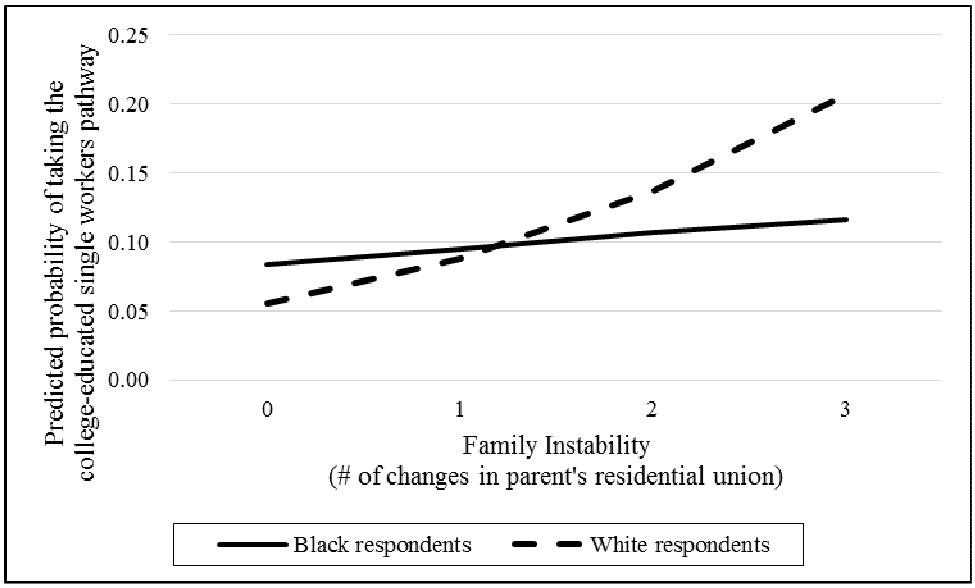



Figure 6. Predicted Probability of Female Respondents Taking the College-educated Single Workers Pathway Compared to the College-educated Married Working Parents Pathway by Race and Family Instability (Step-parent family)

*Note*. It was calculated based on the following information (Averages: parent's years of education, GPA in high school, delinquency, maternal age at first birth, and respondent's age at parental survey; Step-parent family, no economic hardship, and no early sexual activity).

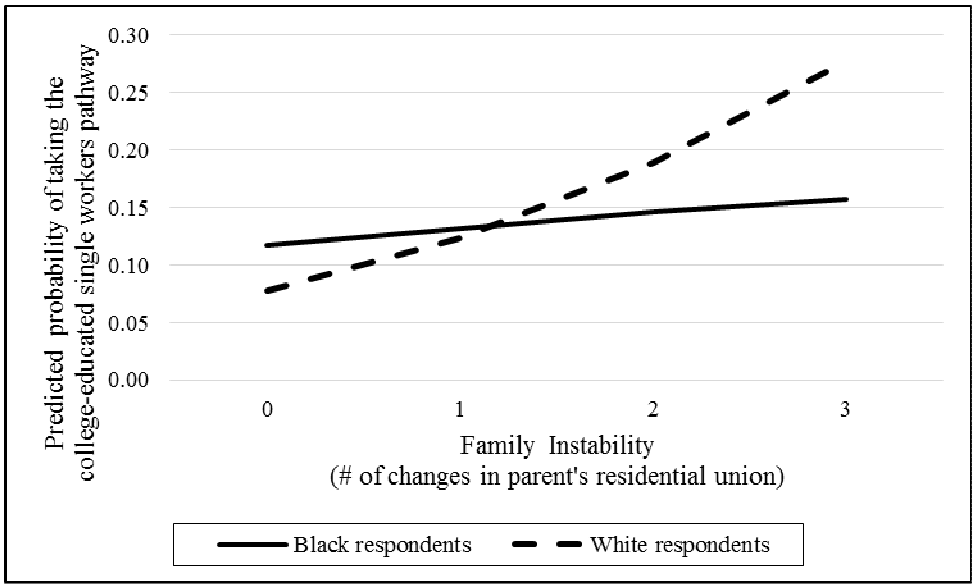



Figure 7. Predicted Probability of Female Respondents Taking the College-educated Single Workers Pathway Compared to the College-educated Married Working Parents Pathway by Race and Family Instability (Single-parent family)

*Note*. It was calculated based on the following information (Averages: parent's years of education, GPA in high school, delinquency, maternal age at first birth, and respondent's age at parental survey; Single-parent family, no economic hardship, and no early sexual activity).

Table 15. Predicted Probability of Female Respondents Taking the College-educated Single Workers Pathway Compared to the College-educated Married Working Parents Pathway by Race and Family Instability

| | Step-parent family | | Single-parent family | |
|---|---|---|---|---|
| Family instability | Black respondents | White respondents | Black respondents | White respondents |
| 0 | 0.08 | 0.06 | 0.12 | 0.08 |
| 1 | 0.10 | 0.09 | 0.13 | 0.12 |
| 2 | 0.11 | 0.14 | 0.15 | 0.19 |
| 3 | 0.12 | 0.21 | 0.16 | 0.28 |

# Chapter 5: DISCUSSION

Research on the transition to adulthood dates back nearly four decades, but a growing body of research has taken a new approach by investigating multiple demographic markers in the transition to adulthood simultaneously. This dissertation builds on the current literature by examining contemporary young adults' pathways to adulthood from ages 18 to 30 and their differences by gender. This research examined, based on the pathways to adulthood identified, these young adults' family and adolescent precursors. It also tested whether race moderates the associations between family structure experiences in childhood and adolescence and young adults' pathways. This chapter provides a summary and discussion of the findings, points out the several strengths and limitations of the study, and then suggests implications for policy and future research.

***Summary of Findings***

Table 16. Summary of Research Questions, Hypotheses, and Findings

| Hypotheses | Findings |
|---|---|
| ***Research Question 1. What are men's pathways to adulthood from ages 18 to 30? What are women's pathways to adulthood from ages 18 to 30? Do their pathways to adulthood differ by gender?*** | |
| **Hypothesis 1a**. Among men and women, there will be five pathways to adulthood: the college-educated single workers pathway, the college-educated married working parents pathway, the high-school-educated single workers pathway, the high-school-educated married parents pathway, and the high-school-educated single parents pathway. | **Hypothesis partially supported**. The college-educated single workers pathway, the college-educated married working parents pathway, and the high-school-educated single parents pathway were commonly identified in men and women. For men, the study identified the high-school-educated single workers pathway and the high-school-educated married working parents pathway. For women, the study identified the high-school-educated workers pathway and the high-school-educated married parents pathway. |
| **Hypothesis 1b**. The pathways to adulthood from age 18 to age 30 will differ by gender. | **Hypothesis supported**. The pathways to adulthood differed by gender. The probabilities of being married and being a parent began to increase at younger ages for women than for men. The proportion of pathways characterized by involvement in postsecondary education was higher for women than for men. Lastly, the probability of being employed full-time tended to be lower for women than for men. |
| ***Research Question 2. How do family and adolescent precursors predict young adults' pathways to adulthood? Does race moderate the association between family structure and young adults' pathways to adulthood? Does race moderate the association between family instability and young adults' pathways to adulthood?*** | |
| ***Family Precursors*** | |
| **Hypothesis 2a**. The odds of respondents taking pathways characterized by secondary education compared to the college-educated married working parents pathway will decrease as parental educational attainment increases. | **Men: Hypothesis supported**. The odds of respondents taking the high-school-educated single parents pathway, the high-school-educated single workers pathway, or the high-school-educated married working parents pathway compared to the college-educated married working parents pathway decreased as parental educational attainment increased.<br>**Women: Hypothesis supported**. The odds of respondents taking the high-school-educated single parents pathway, the high-school-educated |

| | |
|---|---|
| | workers pathway, or the high-school-educated married parents pathway compared to the college-educated married working parents pathway decreased as parental educational attainment increased. |
| **Hypothesis 2b**. The odds of respondents who experienced economic hardship taking pathways characterized by secondary education or nonmarital relationships compared to the college-educated married working parents pathway will be greater than the odds of respondents who did not experience economic hardship. | **Men: Hypothesis not tested**.<br>**Women: Hypothesis partially supported**. The odds of respondents who experienced economic hardship taking the high-school-educated single parents pathway or the high-school-educated married parents pathway compared to the college-educated married working parents pathway were greater than the odds of respondents who did not experience economic hardship. Hypothesis 2b was not supported when comparing the high-school-educated workers pathway to the college-educated married working parents pathway. |
| **Hypothesis 2c**. The odds of respondents who were not raised in two-biological-parent families taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will be greater than the odds of respondents raised in two-biological-parent families. | **Men: Hypothesis partially supported**. The odds of respondents raised in single-parent or other types of families taking the high-school-educated single parents pathway or the high-school-educated single workers pathway compared to the college-educated married working parents pathway were greater than the odds of respondents raised in two-biological-parent families.<br>**Women: Hypothesis partially supported**. The odds of respondents raised in step-parent or single-parent families taking the high-school-educated single parents pathway compared to the college-educated married working parents pathway were greater than the odds of respondents raised in two-biological-parent families. |
| **Hypothesis 2d**. The odds of respondents taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will increase as they experience more family instability. | **Men: Hypothesis not supported**. The odds of respondents taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway did not significantly decrease as they experienced more family instability.<br>**Women: Hypothesis not supported**. The odds of respondents taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway did not significantly decrease as they experienced more family instability. |

| *Adolescent Precursors* | |
|---|---|
| **Hypothesis 2e**. The odds of Black respondents taking pathways characterized by early nonmarital childbearing compared to the college-educated married working parents pathway will be greater than the odds of White respondents. | **Men: Hypothesis not supported**. The odds of Black respondents taking the high-school-educated married working parents pathway compared to the college-educated married working parents pathway were lower than the odds of White respondents.<br>**Women: Hypothesis supported**. The odds of Black respondents taking the high-school-educated single parents pathway compared to the college-educated married working parents pathway were greater than the odds of White respondents. |
| **Hypothesis 2f**. The odds of respondents taking pathways characterized by secondary education compared to the college-educated married working parents pathway will decrease as their high school GPAs increases. | **Men: Hypothesis supported**. The odds of respondents taking the high-school-educated single parents pathway, the high-school-educated single workers pathway, or the high-school-educated married working parents pathway compared to the college-educated married working parents pathway decreased as their high school GPAs increased.<br>**Women: Hypothesis supported**. The odds of respondents taking the high-school-educated single parents pathway, the high-school-educated workers pathway, or the high-school-educated married parents pathway compared to the college-educated married working parents pathway decreased as their high school GPAs increased. |
| **Hypothesis 2g**. The odds of respondents taking pathways characterized by secondary education or early childbearing compared to the college-educated married working parents pathway will increase as their delinquency score increases. | **Men: Hypothesis partially supported**. The odds of respondents taking the high-school-educated single parents pathway or the high-school-educated single workers pathway compared to the college-educated married working parents pathway increased as their delinquency score increased.<br>**Women: Hypothesis supported**. The odds of respondents taking the high-school-educated single parents pathway, the high-school-educated workers pathway, or the high-school-educated married parents pathway compared to the college-educated married working parents pathway increased as their delinquency score increased. |
| **Hypothesis 2h**. The odds of respondents who experienced early sexual activity taking pathways characterized by secondary education or early childbearing compared to | **Men: Hypothesis supported**. The odds of respondents who experienced early sexual activity taking the high-school-educated single parents pathway, the high-school-educated single workers pathway, or the high-school-educated married working parents |

| | |
|---|---|
| the college-educated married working parents pathway will be greater than the odds of respondents who did not experience early sexual activity. | pathway compared to the college-educated married working parents pathway were greater than the odds of respondents who did not experience early sexual activity.<br>**Women: Hypothesis partially supported**. The odds of respondents who experienced early sexual activity taking the college-educated single workers pathway, the high-school-educated single parents pathway, the high-school-educated single workers pathway, or the high-school-educated married working parents pathway compared to the college-educated married working parents pathway were greater than the odds of respondents who did not experience early sexual activity. |
| ***Race as a Moderator*** | |
| **Hypothesis 2i**. The positive association between not living in two-biological-parent families and the odds of taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will be weaker for Black respondents than for White respondents. | **Men: Hypothesis partially supported**. The positive association between living in single-parent families and the odds of taking the high-school-educated single workers pathway compared to the college-educated married working parents pathway was weaker for Black respondents than for White respondents.<br>**Women: Hypothesis not supported**. The positive association between not living in two-biological-parent families and the odds of taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway was not significantly weaker for Black respondents than for White respondents. |
| **Hypothesis 2j**. The positive association between family instability and the odds of taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway will be weaker for Black respondents than for White respondents. | **Men: Hypothesis not supported**. The positive association between family instability and the odds of taking pathways characterized by early childbearing or nonmarital relationships compared to the college-educated married working parents pathway was not significantly weaker for Black respondents than for White respondents.<br>**Women: Hypothesis partially supported**. The positive association between family instability and the odds of taking the college-educated single workers pathway compared to the college-educated married working parents pathway was weaker for Black respondents than for White respondents. |

## *Discussion of the Findings*

### RQ1: Pathways to Adulthood by Gender

**Five pathways to adulthood.** To answer the first set of research questions, young adults' pathways to adulthood were measured with four status variables: Enrollment status in school, union status, parenthood status, and employment status. First, there were three subcategories in ***enrollment status***: Being in school, not being in school, and being a college graduate. Most of the previous researchers focused on whether respondents were enrolled in school at a given age, but the inclusion of whether they had graduated from college allowed us to clearly differentiate pathways with and without postsecondary education. Among the three pathways characterized by secondary education, the high-school-educated single workers in men and the high-school-educated workers in women showed relatively higher probabilities of being in school at ages 18 and 21 than those on the other two high-school-educated pathways. This suggests that respondents on the former pathway are likely to attend school (e.g., 2-year college, 4-year college, or graduate school) at these ages but unlikely to finish it. Unfortunately, the type of schools in which they were enrolled at a given age was not differentiated in this research.

Second, ***union status*** also had three subcategories: Cohabiting, married, and non-married, non-cohabiting. A few researchers have measured cohabitation as an indicator of the pathways to adulthood by the mid-twenties (Amato et al., 2008; Fomby & Bosick, 2013), but they have not studied whether cohabitation is critical to define the pathways until the late twenties. In this research whether respondents were cohabiting was captured from ages 18 to 30, but as the definitions of the pathways to

adulthood showed, cohabitation was not a dominant status in any of the five pathways. There were no pathways to adulthood characterized by cohabitation, and the probability of being cohabiting was never higher than .5. When defining the pathways to adulthood, cohabitation may be important by the mid-twenties; marriage and being non-married, non-cohabiting are more dominant in the late twenties.

Third, as delineated in the Methods chapter, the limitation in measuring ***parenthood*** in this study was that respondents who did not live with their child were not considered as parents. Since this is more likely to occur among men than women, the researcher took the imprecise measurement into consideration when selecting the final model. This limitation could be partially complemented by taking account of whether respondents had a non-resident biological child as of the survey date. However, there is no question asking the birth date of respondents' non-resident biological child in the NLSY97, so it is impossible to obtain the exact age at when respondents gave birth to a non-resident child.

Fourth, ***employment status*** was measured by whether or not they were in a full-time job. Respondents on the two college-educated pathways showed increasing and high probabilities of being employed full-time so employment was well incorporated in the definitions of the pathways. For respondents on the high-school-educated single parents pathway, however, the probability of being employed full-time hit a plateau in the twenties at a relatively moderate level (around .6 for men and .4 for women). The probability of being employed full-time for women on the high-school-educated married parents was also flat and around .4 in the twenties. For these reasons, employment was not well incorporated in the definitions of these pathways.

Given that some of the millennials transitioned into adulthood during the Great Recession in the late 2000s, being employed full-time would be more challenging for this cohort than for the former cohorts, particularly for those on the high-school-educated pathways.

Fifth, the five pathways to adulthood identified in this study allow us to question the universality of ***emerging adulthood*** suggested by Arnett (2000). He argued that young adults delay marriage and parenthood until the mid- or late twenties, pursue higher education, and experience frequent residential changes during ages 18 to 25, what he refers to as emerging adulthood, in industrialized societies. He also asserted that young Americans experience emerging adulthood across all social classes (Arnett, 2001, 2003). Among the five pathways to adulthood identified in the present study, the college-educated single workers seem to exemplify the concept of emerging adulthood in that they were highly likely to pursue higher education in the early twenties and likely to get married and become a parent in the late twenties. Yet only 13% of men and 19% of women were likely to take the college-educated single workers pathway, refuting Arnett's claim of universality of emerging adulthood in all young Americans. Additionally, high-school-educated single workers among men and high-school-educated workers among women roughly resemble the emerging adulthood paradigm, but they would be less likely than college-educated single workers to obtain a secure or high-status job due to their low probabilities of both being a college graduate and being employed full-time. These two pathways constitute about half of each gender sample (51% of men and 49% of women), thus disproving the universality of emerging adulthood. Although the other subjective

characteristics of emerging adulthood he posited were not observed in this research, this is one of the few studies that provides evidence to refute the universality of emerging adulthood. Few researchers have questioned the universal nature of emerging adulthood suggested by Arnett in older American cohorts (Osgood et al., 2005) or among British young adults (Hendry & Kloep, 2010); this study is the first to do so with the U.S. millennial generation. To either confirm or refute the universality of emerging adulthood, further empirical studies would be necessary to examine its demographic and subjective characteristics (Côté, 2014).

Finally, the principles in the ***life course perspective*** that guided this research mattered in identifying young adults' pathways to adulthood. The principle of ***linked lives*** was pronounced in the pathways characterized by parenthood. The probability of becoming a parent and that of being in school did not increase or decrease together; rather, when one increased, the other decreased. This suggests how unlikely it is to both be in school and be a parent at a given age. This principle was confirmed with the probability of marriage and that of becoming a parent on the two college-educated pathways. Regardless of gender of the young adults on these pathways, these two probabilities rose together and the probability of being married was almost always higher than that of becoming a parent at a given age. For young adults on these pathways, marriage and parenthood appeared to be closely linked to each other and parenthood was likely to occur within marriage. This was not clearly found for those on the three high-school-educated pathways.

The principle of ***timing*** also mattered. Regarding enrollment status, at what ages the probability of being in school and that of being a college graduate changed

was different in pathways with and without postsecondary education. For those on the pathways characterized by postsecondary education, the probability of being in school sharply dropped and that of being a college graduate rose dramatically from ages 21 to 24. In contrast, for those on the pathways characterized by secondary education, the probability of being in school dropped from ages 18 to 21 but the probability of being a college graduate did not rise, meaning that they were more likely to leave school earlier than those on the college-educated pathways. In terms of parenthood status, there were three pathways characterized by parenthood in both genders. The probability of being a parent was close to 1 at age 30, but this already reached its peak at age 24 for those on the high-school-educated single parents pathway, whereas it increased gradually for those on the college-educated married working parents pathway.

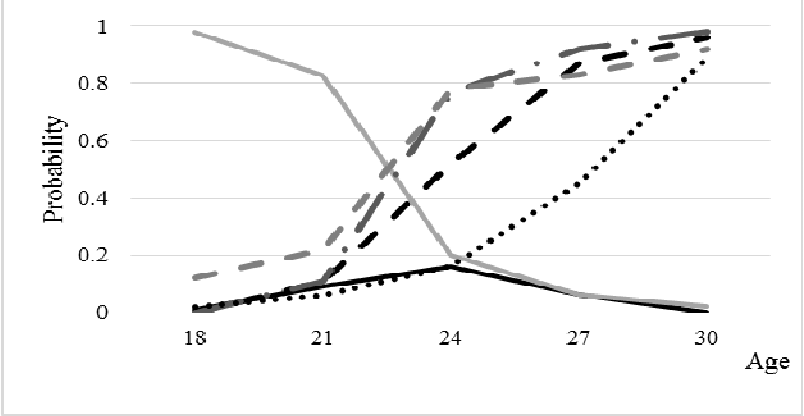
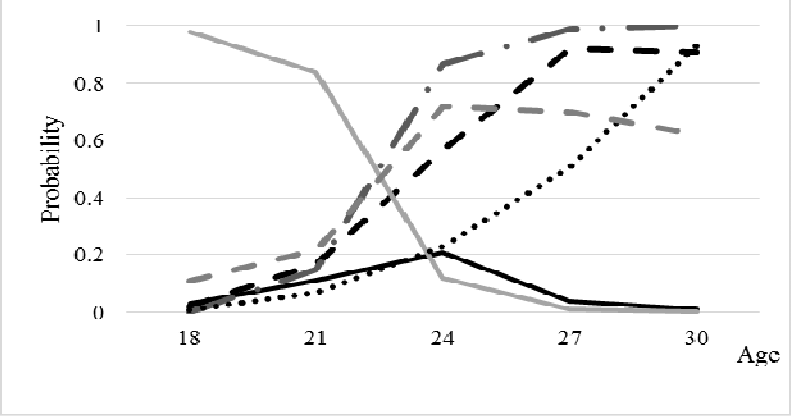
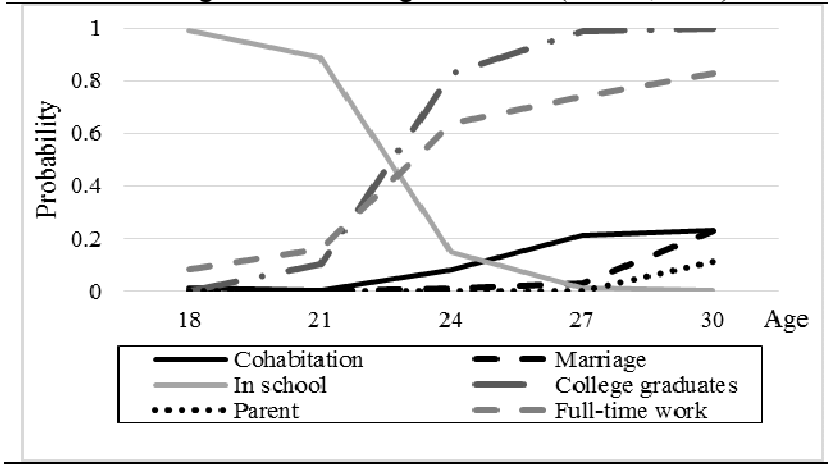
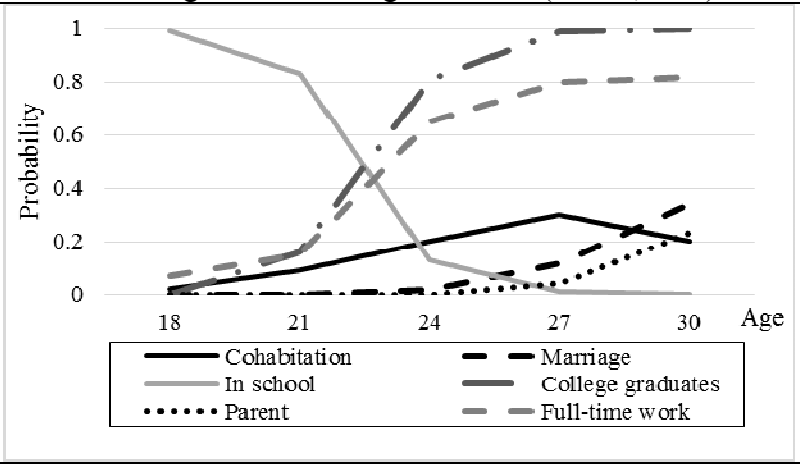
**Gender differences in the five pathways to adulthood.** With the five pathways to adulthood identified separately in men and women (see Table 17), the researcher explored differences by gender. As posited in Hypothesis 1b, men's pathways to adulthood were different from women's; there are two notable findings. First, gender differences were more pronounced among the three pathways characterized by secondary education than the two pathways involving college education. As shown in Table 17, gender differences on the first two pathways (college-educated married working parents pathway and college-educated single workers pathway) seemed to be minimal, except for the probability of being employed full-time. In contrast, there was substantial variation among those on the three pathways characterized by secondary education. Not only did the definitions of

some pathways differ by gender, but even in the pathways with the same definition, gender differences were found in the probabilities of being married, of being a parent, or of being employed full-time. For example, among women on the high-school-educated single parents pathway, it is striking to see the discrepancy between the probability of being a parent and that of being married. At age 24, the former was almost 1 but the latter was 0. The comparable difference was not that large in men on the same pathway, however. In addition, almost all aspects seemed to be different by gender on the remaining two pathways, except for the probability of being a college graduate. Since the gender differences described above were based on descriptive statistics, these differences should be tested using multi-group comparison analyses in further studies.

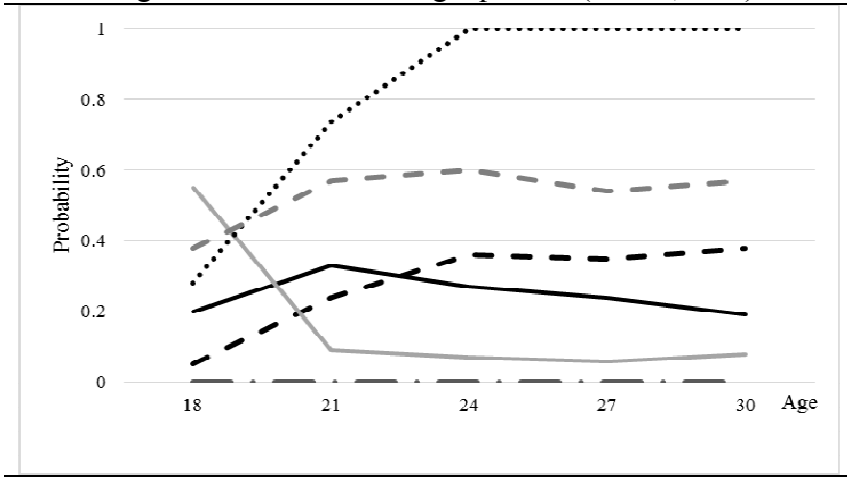
Second, young adults on the high-school-educated single parents pathway showed notable gender differences and suggested an increasing complex and diverse family life. For both men and women, the high-school-educated single parents pathway was identified as a distinct and sizable pathway (for men $n = 446$, 20% of the sample; for women $n = 354$, 17% of the sample). When RMLCA was conducted between 2 and 7 classes, this pathway was clearly identified from the 3-class model and the prevalence remained stable as the number of classes increased. A similar pathway was also found in the older cohorts, though its prevalence was very low (Dariotis et al., 2011). Thus, for men this pathway aligns with a recent increase in the number of single father households (Livingston, 2013), and should not be combined with men on other pathways.

By age 21 almost 40% of women on the high-school-educated single parents pathway were likely to live with a partner while living with their children. Given that cohabitation tends to be less stable than marriage, they could experience repeated cohabitation and union dissolution. This reflects not only the increasing decoupling of marriage and childbearing (Cherlin, 2010), but the possibility of multipartnered fertility (Carlson & Furstenberg, 2006; Cherlin, Talbert, & Yasutake, 2014). If women on this pathway live with a partner who is not a biological father of their child and have children with them, their family complexity and instability is likely to increase. For these women, getting married may thus no longer be an appropriate indicator of becoming an adult.

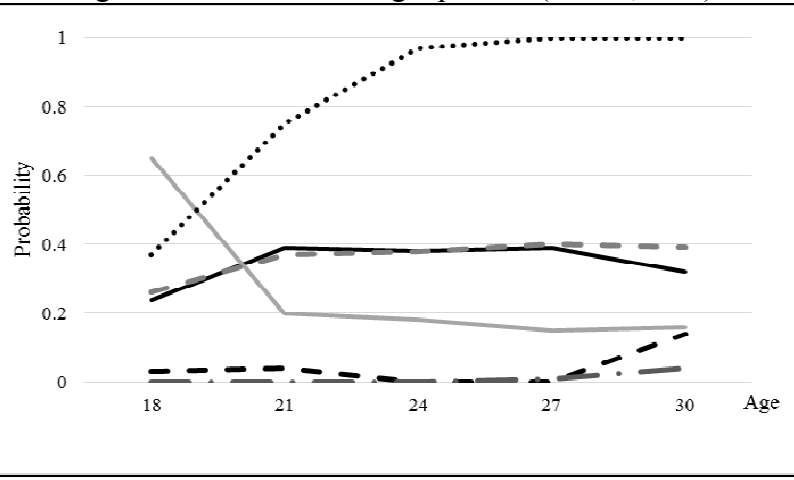
Table 17. Summary of the Five Pathways to Adulthood by Gender

| Men ($N$ = 2,185) | Women ($N$ = 2,086) |
|---|---|
| College-educated married working parents ($n$=226, 0.10) | College-educated married working parents ($n$=266, 0.13) |
|  |  |
| College-educated single workers ($n$=282, 0.13) | College-educated single workers ($n$=403, 0.19) |
|  |  |

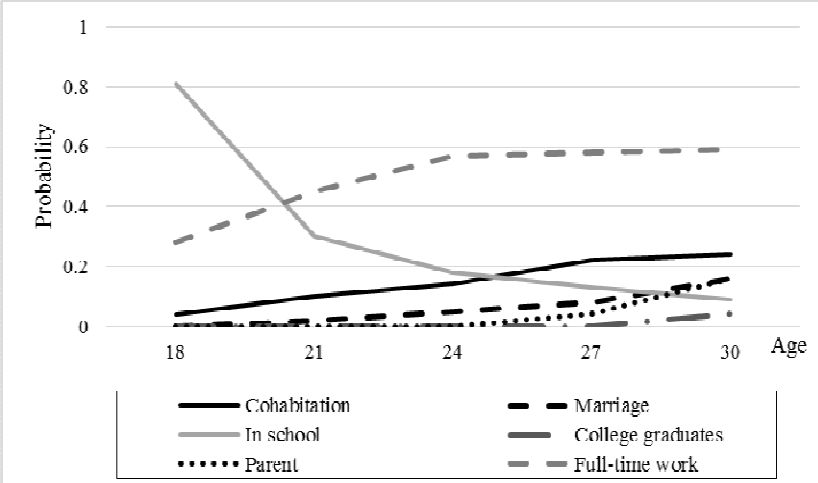
Men ($N$ = 2,185)
High-school-educated single parents ($n$=446, 0.20)



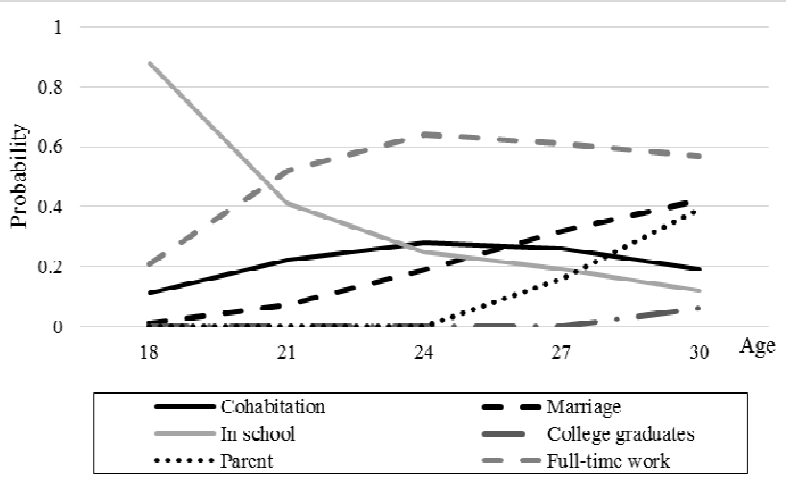

Women ($N$ = 2,086)
High-school-educated single parents ($n$=354, 0.17)

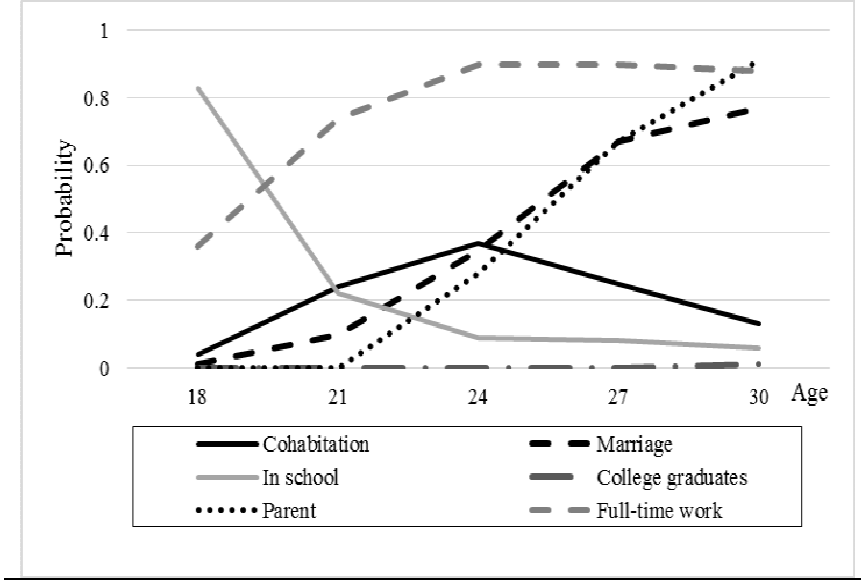
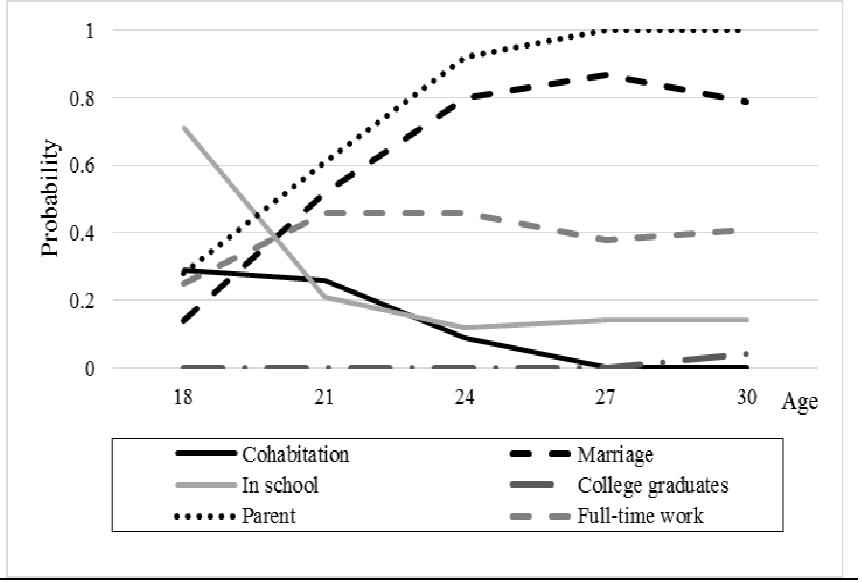



High-school-educated single workers ($n$=824, 0.38)




High-school-educated workers ($n$=621, 0.30)



| Men ($N$ = 2,185)<br>High-school-educated married working parents ($n$=408, 0.19) | Women ($N$ = 2,086)<br>High-school-educated married parents ($n$=443, 0.21) |
|---|---|
|  |  |

### RQ2: Family and Adolescent Precursors of the Pathways to Adulthood

Table 18 shows the summary of the associations between family and adolescent precursors and young adults' pathways to adulthood. The direction of the coefficients are presented: '+' indicates that young adults are more likely to take the given pathway compared to the college-educated married working parents pathway; '-' indicates that young adults are less likely to take the given pathway compared to the college-educated married working parents pathway. Most of the precursors were significantly associated with the pathways, as expected. First, ***educational factors***, such as parental years of schooling or young adults' high school GPA, along with delinquency clearly differentiated pathways with and without postsecondary education. For men, greater parental years of education also predicted greater odds of taking the college-educated single workers pathway compared to the college-educated married working parents pathway. This is because greater parental education is linked to delaying marriage and parenthood (men on the college-educated single workers pathway may be more likely than their married counterparts to go to graduate school or pursue professional degrees).

Table 18. Summary of the Results for the Family and Adolescent Precursors of the Pathways to Adulthood

| | Referent class: College-educated married working parents pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Men ($N$ = 1,946) | | | | Women ($N$ = 1,847) | | | |
| Variable | *Coll.S.W.* | *HS.S.P.* | *HS.S.W.* | *HS.M.W.P.* | *Coll.S.W.* | *HS.S.P.* | *HS.W.* | *HS.M.P.* |
| **Family precursors** | | | | | | | | |
| Parent's years of education | + | - | - | - | | - | - | - |
| Economic hardship (ref.: No): Yes | N/A | N/A | N/A | N/A | | + | | + |
| Family structure (ref.: Two-biological-parent) | | | | | | | | |
| Step-parent family | | | | | | + | + | |
| Single-parent family | | + | + | | | + | + | |
| Other family | | + | + | | | | | |
| Family instability | | | | | | | | |
| **Adolescent precursors** | | | | | | | | |
| Race (ref.: White): Black | | | | - | | + | | |
| GPA in high school | | - | - | - | | - | - | - |
| Delinquency | | + | + | | | + | + | + |
| Early sexual activity (ref.: No): Yes | | + | + | + | + | + | + | + |
| **Interactions** | | | | | | | | |
| Black × Step-parent family | | | | | | | | |
| Black × Single-parent family | | | - | | | | | |
| Black × Other family | | | | | | | | |
| Black × Family instability | | | | | - | | | |

*Note*. *Coll.S.W.* = college-educated single workers pathway; *HS.S.P.* = high-school-educated single parents pathway; *HS.S.W.* = high-school-educated single workers pathway; *HS.M.W.P.* = high-school-educated married working parent pathway; *HS.W.* = high-school-educated workers pathway; *HS.M.P.* = high-school-educated married parents pathway.

Second, ***family structure*** was associated with being on pathways characterized by nonmarital relationships and secondary education, but there were gender differences. For men, growing up in a single-parent family and growing up in an "other" family type were significant predictors; for women, growing up in a step-parent family and growing up in a single-parent family were significant predictors. This finding was consistent with previous results (Fomby & Bosick, 2013; Oesterle et al., 2010), in that growing up in a single-parent family was significantly associated with taking pathways characterized by nonmarital relationships for both young men and women who were less likely to pursue postsecondary education. In terms of growing up in a step-parent family, additional analyses showed that in this sample more than 80% of young adults raised in a step-parent family lived with a step-father (81% for men and 83% for women), suggesting that having a step-father is highly associated with women's pathways to adulthood characterized by nonmarital relationships.

The direct association between ***family instability*** and the pathways to adulthood was not found for either men or women. Given that a large body of literature on family instability focuses on how family instability is associated with developmental outcomes in childhood or adolescence, it is possible that family instability could be indirectly associated with young adults' pathways to adulthood through academic achievement or sexual behavior in adolescence. Fomby and Bosick (2013) also found that most of the direct effects of family instability on young adults' pathways to adulthood were mediated by family background or adolescent factors. Another possibility is that types of changes in a parent's residential union would be

more important than the number of changes (Lee & McLanahan, 2015). Though only the number of changes was measured and analyzed in this research, it is critical to include types of changes as well and to examine whether multiple aspects of family instability could predict developmental outcomes beyond childhood or adolescence.

Third, similar to educational factors or delinquency, ***early sexual activity*** differentiated pathways with and without postsecondary education, but an unexpected result was found in women. It showed that early sexual activity experience predicted taking the college-educated single workers pathway compared to the college-educated married parents pathway. Although further research should substantiate this association, an early study suggested that early sexual activity experience could delay marriage because early initiators are less likely to partner with a suitable spouse (Miller & Heaton, 1991). This may be the case for such high-achieving women on these two pathways.

Fourth, the results about ***race*** were notable. For men, the odds of Black men taking the high-school-educated married working parents pathway compared to the college-educated married working parents pathway were lower than the odds of White men. This can be understood by noting that the two pathways compared were commonly characterized by marriage, full-time employment, and childbearing, which are less likely to happen for Black males than for White males at a given age. For women, as posited, the odds of Black women taking the high-school-educated single parents pathway compared to the college-educated married working parents pathway were greater than the odds of White women. Black women bear children earlier than white women, which may truncate their schooling and reduce their marriage chances.

To explore other direct associations between race and young adults' pathways to adulthood, the researcher changed the referent class from the college-educated married working parents pathway to the high-school-educated single workers pathway in men (see Appendix 14) and the high-school-educated workers pathway in women (see Appendix 17) and reran the models. These pathways are the largest group in each gender. Additional analyses show that race was even a significant predictor for differentiating among the three high-school-educated pathways. These results suggest that race, particularly being Black, reflects truncated opportunities for education and employment in society and may reflect cultural norms about marriage and parenthood, all of which guide their pathways to adulthood. Although only Black and White young adults were included in this research limiting interpretation to these two racial groups, the role of race in the pathways to adulthood deserves further research and should not be combined with other demographic factors.

Finally, the associations between the two family structure experiences and young adults' pathways to adulthood tended to be weaker for Blacks than for Whites. For men, the positive association between living in a single-parent family and the odds of taking the high-school-educated single workers pathway compared to the college-educated married working parents pathway was weaker for Blacks than for Whites. One explanation for this finding is the racial difference in the proportion of living in single-parent families. As presented in Appendix 12, half of Black men grew up in single-parent families, whereas only 20% of White men did. Because it is more common for Black men to live in single-parent families than White men, any consequences of living in single-parent families may be less substantial for Black

males than for White males. Another explanation is that racial/ethnic minorities have had more emotional and instrumental support provided by kin and extended family members than Whites (Amato & Keith, 1991; McLoyd et al., 2000; Sarkisian & Gerstel, 2005), so such support can buffer any negative effects of living in single-parent families.

For women, the positive association between family instability and the odds of taking the college-educated single workers pathway compared to the college-educated married working parents pathway was weaker for Blacks than for Whites. As shown in Appendix 13, there was a difference in family instability by race (Black females: 0.60, White females: 0.52). Given that this interaction was found when comparing two pathways taken by college-educated working females, the latter would be able to fully support themselves and delay marriage and childbearing to look for a suitable partner so that they would not reproduce their parent's unstable coresidential unions. Since Black females tend to have children earlier and marry later than White females, there may be less likelihood that a Black young woman would be eligible to be in the college educated working female group. Or, the meaning of instability may be very different for Whites and Blacks. Almost two-thirds of Black females grew up in a step-parent or single-parent family, whereas four in ten White females did (Appendix 13). As a result, Black females may not view experiencing changes in a parent's coresidential union as an especially difficult problem that would influence whether or when to marry.

To explore whether race moderates the associations between these two family structure experiences and young adults' pathways to adulthood when using another

pathway as a referent class, the researcher reran the models with the most prevalent pathway as a new referent class (the high-school-educated single workers in men (38%) and the high-school-educated workers in women (30%)). For men, there was no significant interaction found other than the finding described above (see Appendices 15 and 16). For women, no significant interaction was found, either (see Appendices 18 and 19).

One additional analysis was conducted to see whether race moderates the associations between other family characteristics, such as parental years of education, or adolescent characteristics such as delinquency, and young adults' pathways to adulthood. Of all the tested interactions of race with other family and adolescent characteristics none of them was significant when the college-educated married working parents pathway was the referent class.

### *Significance of This Study*

This dissertation contributes to the literature on the transition to adulthood in three ways. First, this study focused on contemporary young adults, particularly the oldest members of the millennial generation in the U.S. As the life course perspective underscores, the life course of individuals is influenced by historical time and place. Although there have been studies on the transition to adulthood of older cohorts or young adults in other countries, their results could not accurately represent the life course of the millennials. Given that the NLSY97 used in this study is one of the few nationally representative surveys that have been longitudinally conducted since 1997

for the millennial generation, this research was able to capture dynamic changes from union formation to employment happening to young adults in the 2000s.

Second, this study attempted to account for changes in the multiple statuses related to becoming an adult by following young adults for 12 years. Most of the previous studies captured young adults' configurations of multiple statuses at a single point in the mid-twenties or the early thirties, without consideration of how the configuration changed over time. In this dissertation, the author measured four statuses at five time points with three-year intervals. As shown in Table 17, this approach was particularly effective in describing changes in the probabilities of being employed full-time and of cohabitating. There were no linear patterns in these probabilities, indicating that young adults repeatedly occupied and exited these statuses. Because this would not have been shown with the previous measurement, this approach is one way to illustrate complex, diverse, and nonlinear pathways to adulthood, particularly for disadvantaged young adults (Roy & Jones, 2014).

Lastly, this study revealed that the two family structure experience variables (family structure and family instability) in childhood and adolescence were associated with young adults' pathways to adulthood differently by race. Family structure has long been an important topic in the literature and family instability, as a distinct component of family structure, has been an emerging research topic. However, there has been relatively limited insight on racial differences in the effects of these two family structure experiences on the transition to adulthood. As this was one of the limitations discussed in the transition to adulthood literature (Fomby & Bosick, 2013), this study addressed this research gap.

## *Limitations*

Despite the significance and contribution of this study, it has several limitations that should be addressed for a clearer understanding of the findings.

### Measurement Error

There were limitations related to measurement in the precursors and the status variables that capture the pathways to adulthood. As briefly documented in Chapter 3, cohabitation in union status only counted when it occurred prior to marriage. If divorced respondents cohabited with a partner, they were coded as being non-married, non-cohabiting due to the incomplete cohabiting histories for some respondents. This measurement thus underrepresents the actual unions that respondents formed. Another limitation was in parenthood status, since it was determined by whether respondents lived with their child. If a respondent had only nonresident biological children, he or she was not coded as being a parent in this dissertation. Due to this limitation, the proportion of men being a parent in this study might be lower than it was in reality and may explain why models with a focus on parenthood status differ across gender. Lastly, since whether or not respondents were enrolled in school at a given age was the purpose of measuring their enrollment status, the type of schools in which they were enrolled was not reported.

Some of the family precursors were also measured with error. As an indicator of family's socioeconomic status, parental education was measured by either the number of years of schooling in the parent survey or the highest degree received by a respondent's parent in the childhood retrospective survey. Due to the inconsistent

scales used in the two surveys, the scale used in the latter was converted to the scale used in the former. In this conversion, the parent's actual number of years in school could be underestimated. As an indicator of respondents' family structure experience, family instability was assessed with items asking the relationship of the parent figure(s)/guardian(s) in the household to the respondent when they were at ages 2, 6, 12, and the first survey. Since only three age points were selected to measure the relationship information prior to the age at the first survey, this could lead to underestimation of the actual level of family instability.

### Omission of Key Variables and Subpopulations

Several variables relevant to the transition to adulthood and key subpopulations were omitted in the current study. Leaving the parental home has been considered an indicator of becoming an adult in the literature, but this was omitted since the available household roster did not show exactly when respondents left the parental home. Given that during the Great Recession in the late 2000s many young adults returned to their parental home (Billari & Liefbroer, 2007), it would be interesting to see how important a role leaving and returning to the parental home play in young adults' pathways to adulthood. In the future, researchers could examine young adults' pathways to adulthood using other data that include leaving the parental home and see whether the results are similar to the findings in this study.

Among the precursors of the pathways to adulthood, the economic hardship variable was omitted in men's multinomial logistic regressions. This could underestimate the associations between family socioeconomic status and men's

pathways to adulthood. Also, because of the survey design, most of the precursors were about respondents' experience in adolescence with few childhood variables included. The planning and decision-making of individuals can have important consequences in life (Elder et al., 2003), as the principle of *agency* in the life course perspective emphasizes, but no variables related to respondents' planning for educational or career attainment, marriage, or pregnancy were included.

Regarding the omission of subpopulations, the researcher focused on Blacks and Whites in this study, so Hispanics, Asians, and other racial groups were not included. The overall pathways to adulthood identified could be similar regardless of whether or not other racial groups were included, but how family structure experiences predict young adults' pathways differently for other racial groups could be an interesting research topic for future research.

Finally, there were very few respondents who grew up in other types of families, such as living with grandparents, other relatives, foster parents, or adoptive parents (4% of men and 3% of women). Caution is necessary when understanding the multinomial logistic regression results of living in other types of families due to the large confidence intervals.

### Choice of the Referent Class

The referent class in the multinomial logistic regressions was the college-educated married working parents pathway. This is, in fact, the smallest class in both genders (10% for men and 13% for women) in this study, but the most frequently used pathway as a referent class in the literature. Using this pathway as a referent

class helped the researcher compare the findings to those in the literature. Also, young adults on this pathway are highly likely to have experienced most of the markers of adulthood by age 30, so comparing them to others who are likely to have experienced some of the markers of adulthood helped the researcher understand how precursors are associated with each of the four status variables in the pathways to adulthood. For those interested in comparisons between other pathways, Appendices 14 to 19 showed the multinomial logistic regression results using the most prevalent pathway (the high-school-educated single workers in men and the high-school-educated workers in women) as a referent class.

### Definitions of the Pathways to Adulthood

Although there were four status variables to identify young adults' pathways to adulthood, not all of the four variables were well incorporated in the definitions of the pathways. For example, employment status was not included in the definitions of some pathways to adulthood because the probability of being employed full-time in those pathways was below .5. The researcher adopted this cutpoint of .5 because she believed that, in order for the pathways to be relatively homogeneous, at least half of the respondents should experience the given status (Dariotis et al., 2011). Thus, the pathways without employment in their definitions do not necessarily mean that all respondents on the pathways are unlikely to work in full-time jobs. Caution is also necessary when understanding the pathways characterized by parenthood. As noted in the Methods chapter and in the limitations section, parenthood in this study is limited to resident parenthood.

### *Implications for Research, Policy, and Practice*

The findings provide useful implications for future research. The next step for research should be to investigate how the pathways to adulthood are associated with young adults' well-being, including health or socioeconomic status, in their mid-thirties. Each of the four statuses that comprise the pathways to adulthood has been known to predict health or socioeconomic status, but a handful of studies have attempted to examine the effects of the pathways to adulthood on young adults' well-being (see Amato & Kane, 2011b; Dariotis et al., 2011; Oesterle, Hawkins, & Hill, 2011; Rohrman, 2014). In answering this question, we could see whether the pathways to adulthood have explanatory power beyond young adults' family and adolescent precursors and whether the pathways to adulthood lead to differences in such well-being indicators at still relatively young ages in life.

Future research should also focus on young adults who did not live with their biological or resident parents during their upbringing. In this study, these young adults, representing 4% of men and 3% of women, were classified as "those living in other types of families" (e.g., living with grandparents or other relatives) when creating the family structure variable. Given significant influences of the family structure and parental education variables on the pathways to adulthood, the lack of parental support of any kind could yield substantial challenges to these young adults. The NLSY97, however, contains only a small number of young adults who grew up without any kind of parent.

For a deeper understanding of the pathways to adulthood, future studies should address whether the widely used key markers of adulthood would be valid for contemporary young adults. Many scholars have selected five demographic indicators of adulthood: leaving the parental home, completing school, moving into full-time employment, getting married, and becoming a parent. Most of the markers are still important, but leaving the parental home and getting married could be less important for the millennial generation than they were for their predecessors. For example, many young adults returned to their parental home during the Great Recession in the late 2000s; nonmarital childbearing, cohabitation, and family instability have been on the rise. Thus, leaving the parental home and getting married may not play an important role in one's sense of becoming an adult, particularly for those on the high-school-educated single parents pathway (Cherlin et al., 2014). If these markers are considered still applicable to contemporary young adults, it would likely be for advantaged young adults who value marriage and who are able to live on their own, regardless of economic hardship.

This study also has implications for program development and policy. Regarding the former, researchers might consider interventions that make it easy for young adults on the three pathways characterized by secondary education to pursue, if they wish, postsecondary education. As the item-response probabilities conditional on latent pathways to adulthood membership showed in Tables 4 and 5, at age 30, some of the young adults on the three pathways characterized by secondary education were likely to be college graduates. They might have returned to college and finished their schooling or they might have started their postsecondary education in their late

twenties. With a college degree, they could pursue diverse employment options and stable jobs. To encourage their involvement in postsecondary education, financial or social services could be delivered through local institutions, such as community colleges.

For those on the high-school-educated single parents pathway, intervention programs to improve coparenting is critical for their own well-being and their child's developmental outcomes. This study showed that most young adults on this pathway were likely to live without a partner or spouse from ages 18 to 30, indicating that coparenting could last more than 10 years. This idea could be incorporated in the development of coparenting intervention programs.

### *Conclusion*

This study examined contemporary young adults' pathways to adulthood from ages 18 to 30 and their differences by gender. With the pathways to adulthood identified, this dissertation investigated their family and adolescent precursors and whether race moderates the associations between family structure experiences and young adults' pathways to adulthood.

Five pathways to adulthood were identified separately for men and women, but several gender differences were found. Not only did the definitions of some pathways differ by gender, but even in the pathways with the same definition, gender differences were found in the probabilities of being married, of being a parent, or of being employed full-time. Women were more likely than men to be married and to become a parent at younger ages and less likely to work at a full-time job. In addition,

gender differences were more pronounced among the three pathways characterized by secondary education than the two pathways characterized by postsecondary education.

This study also found that educational factors, such as parental years of schooling or young adults' high school GPA, delinquency, and early sexual activity tended to differentiate pathways with and without postsecondary education. Family structure was associated with being on pathways characterized by nonmarital relationships and secondary education. Additionally, this dissertation showed that the positive association between growing up in a single-parent family and the odds of taking the high-school-educated single workers pathway compared to the college-educated married working parents pathway was weaker for Black males than for White males. In other words, compared to White males, Black males' choices of marriage and childbearing patterns after high school tended to be less responsive to growing up in a single-parent family. The positive association between family instability and the odds of taking the college-educated single workers pathway compared to the college-educated married working parents pathway was weaker for Black females than for White females. This indicates that, for White females, family instability in childhood was related to their pathways in the college-going years through marriage and childbearing patterns.

This dissertation accounted for changes in the multiple statuses related to becoming an adult by following young adults for 12 years. This study also revealed racial differences in the associations of the two family structure experience variables (family structure and family instability) with the pathways to adulthood. More

research on contemporary young adults' pathways to adulthood and subgroup differences in the contributions of precursors is recommended.

# Appendices

Appendix 1. Weighted Descriptive Statistics of the Precursors and Controls: Men

| Variable | *M* (*SD*) | Min-Max | # of missing |
|---|---|---|---|
| **Family precursors** | | | |
| Family socioeconomic status | | | |
| Parent's years of education | 13.19 (2.44) | 1-20 | 56 |
| Economic hardship | 0.06 | 0-1 | 18 |
| Family structure experience | | | |
| Family structure | | | |
| Two-biological-parent family | 0.53 | 0-1 | 5 |
| Step-parent family | 0.15 | 0-1 | 5 |
| Single-parent family | 0.27 | 0-1 | 5 |
| Other family | 0.05 | 0-1 | 5 |
| Family instability | 0.49 (0.74) | 0-3 | 74 |
| **Adolescent precursors** | | | |
| Race | | | |
| White | 0.81 | 0-1 | 0 |
| Black | 0.19 | 0-1 | 0 |
| GPA in high school | 2.67 (0.69) | 0.42-4.00 | 90 |
| Delinquency | 2.05 (2.20) | 0-10 | 4 |
| Early sexual activity | | | |
| Yes | 0.43 | 0-1 | 8 |
| No | 0.57 | 0-1 | 8 |
| **Control variables** | | | |
| Maternal age at first birth | 23.30 (4.68) | 11-49 | 53 |
| Age at parental survey | 15.26 (1.01) | 13-18 | 0 |
| *N* | 2,185 | | |

Appendix 2. Weighted Descriptive Statistics of the Precursors and Controls: Women

| Variable | *M* (*SD*) | Min-Max | # of missing |
|---|---|---|---|
| **Family precursors** | | | |
| Family socioeconomic status | | | |
| Parent's years of education | 13.19 (2.34) | 1-20 | 76 |
| Economic hardship | 0.13 | 0-1 | 9 |
| Family structure experience | | | |
| Family structure | | | |
| Two-biological-parent family | 0.50 | 0-1 | 4 |
| Step-parent family | 0.15 | 0-1 | 4 |
| Single-parent family | 0.29 | 0-1 | 4 |
| Other family | 0.05 | 0-1 | 4 |
| Family instability | 0.53 (0.73) | 0-3 | 60 |
| **Adolescent precursors** | | | |
| Race | | | |
| White | 0.82 | 0-1 | 0 |
| Black | 0.18 | 0-1 | 0 |
| GPA in high school | 2.96 (0.67) | 0.42-4.00 | 76 |
| Delinquency | 1.11 (1.65) | 0-10 | 3 |
| Early sexual activity | | | |
| Yes | 0.38 | 0-1 | 8 |
| No | 0.62 | 0-1 | 8 |
| **Control variables** | | | |
| Maternal age at first birth | 23.35 (4.76) | 10-48 | 61 |
| Age at parental survey | 15.28 (1.01) | 13-18 | 0 |
| *N* | 2,086 | | |

Appendix 3. Latent Pathways to Adulthood and Item-response Probabilities Conditional on Membership: Men (4-class model)

| | College-educated married working parents (*n*=523, 0.24) | | | | | High-school-educated young working parents (*n*=448, 0.21) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.99 | 0.87 | 0.15 | 0.00 | 0.00 | 0.55 | 0.09 | 0.07 | 0.06 | 0.08 |
| Not in school | 0.01 | 0.02 | 0.01 | 0.00 | 0.00 | 0.45 | 0.91 | 0.93 | 0.94 | 0.92 |
| College graduates | 0.00 | 0.11 | 0.84 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.01 | 0.04 | 0.12 | 0.14 | 0.12 | 0.20 | 0.33 | 0.28 | 0.24 | 0.19 |
| Marriage | 0.00 | 0.04 | 0.23 | 0.40 | 0.57 | 0.05 | 0.24 | 0.36 | 0.35 | 0.38 |
| Non-married, non-cohabited | 0.99 | 0.91 | 0.65 | 0.45 | 0.31 | 0.75 | 0.44 | 0.36 | 0.41 | 0.43 |
| Parenthood status | | | | | | | | | | |
| Yes | 0.01 | 0.03 | 0.06 | 0.20 | 0.46 | 0.28 | 0.73 | 1.00 | 1.00 | 1.00 |
| No | 0.99 | 0.97 | 0.94 | 0.80 | 0.54 | 0.72 | 0.27 | 0.00 | 0.00 | 0.00 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.10 | 0.19 | 0.71 | 0.80 | 0.89 | 0.38 | 0.58 | 0.60 | 0.55 | 0.57 |
| No | 0.90 | 0.81 | 0.29 | 0.20 | 0.11 | 0.62 | 0.42 | 0.40 | 0.45 | 0.43 |

| | High-school-educated working parents (*n*=417, 0.19) | | | | | High-school-educated single workers (*n*=797, 0.36) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.84 | 0.25 | 0.12 | 0.12 | 0.08 | 0.81 | 0.30 | 0.18 | 0.13 | 0.09 |
| Not in school | 0.16 | 0.75 | 0.88 | 0.88 | 0.88 | 0.19 | 0.70 | 0.82 | 0.87 | 0.87 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.04 | 0.23 | 0.36 | 0.24 | 0.11 | 0.04 | 0.10 | 0.15 | 0.22 | 0.24 |
| Marriage | 0.01 | 0.11 | 0.37 | 0.70 | 0.79 | 0.00 | 0.02 | 0.04 | 0.08 | 0.15 |
| Non-married, non-cohabited | 0.95 | 0.66 | 0.27 | 0.07 | 0.09 | 0.95 | 0.89 | 0.81 | 0.71 | 0.60 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parenthood status | | | | | | | | | | |
| Yes | 0.00 | 0.00 | 0.28 | 0.67 | 0.91 | 0.00 | 0.00 | 0.00 | 0.04 | 0.16 |
| No | 1.00 | 1.00 | 0.72 | 0.33 | 0.09 | 1.00 | 1.00 | 1.00 | 0.96 | 0.84 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.35 | 0.70 | 0.87 | 0.87 | 0.85 | 0.28 | 0.46 | 0.58 | 0.59 | 0.60 |
| No | 0.65 | 0.30 | 0.13 | 0.13 | 0.15 | 0.72 | 0.54 | 0.42 | 0.41 | 0.40 |

Appendix 4. Latent Pathways to Adulthood and Item-response Probabilities Conditional on Membership: Women (4-class model)

| | High-school-educated married workers (*n*=555, 0.27) | | | | | High-school-educated single parents (*n*=355, 0.17) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.88 | 0.41 | 0.25 | 0.20 | 0.12 | 0.65 | 0.19 | 0.18 | 0.15 | 0.16 |
| Not in school | 0.12 | 0.59 | 0.75 | 0.80 | 0.82 | 0.35 | 0.81 | 0.82 | 0.84 | 0.81 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.01 | 0.03 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.11 | 0.21 | 0.28 | 0.26 | 0.19 | 0.24 | 0.39 | 0.38 | 0.39 | 0.32 |
| Marriage | 0.01 | 0.08 | 0.19 | 0.32 | 0.42 | 0.04 | 0.05 | 0.00 | 0.00 | 0.14 |
| Non-married, non-cohabited | 0.88 | 0.71 | 0.53 | 0.42 | 0.40 | 0.72 | 0.56 | 0.62 | 0.61 | 0.54 |
| Parenthood status | | | | | | | | | | |
| Yes | 0.00 | 0.00 | 0.00 | 0.15 | 0.38 | 0.37 | 0.75 | 0.97 | 1.00 | 1.00 |
| No | 1.00 | 1.00 | 1.00 | 0.85 | 0.62 | 0.63 | 0.25 | 0.03 | 0.00 | 0.00 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.21 | 0.52 | 0.65 | 0.61 | 0.57 | 0.26 | 0.37 | 0.39 | 0.40 | 0.39 |
| No | 0.79 | 0.48 | 0.35 | 0.39 | 0.43 | 0.74 | 0.63 | 0.61 | 0.60 | 0.61 |
| | High-school-educated married parents (*n*=447, 0.21) | | | | | College-educated married working parents (*n*=729, 0.35) | | | | |
| | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.71 | 0.22 | 0.13 | 0.14 | 0.14 | 0.99 | 0.83 | 0.13 | 0.01 | 0.00 |
| Not in school | 0.29 | 0.78 | 0.87 | 0.85 | 0.81 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.01 | 0.05 | 0.00 | 0.16 | 0.87 | 0.99 | 1.00 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.29 | 0.27 | 0.09 | 0.00 | 0.00 | 0.02 | 0.10 | 0.21 | 0.19 | 0.11 |
| Marriage | 0.14 | 0.52 | 0.80 | 0.88 | 0.79 | 0.01 | 0.07 | 0.25 | 0.47 | 0.60 |
| Non-married, non-cohabited | 0.57 | 0.21 | 0.12 | 0.12 | 0.21 | 0.97 | 0.83 | 0.54 | 0.35 | 0.28 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parenthood status | | | | | | | | | | |
| Yes | 0.28 | 0.61 | 0.92 | 1.00 | 1.00 | 0.00 | 0.03 | 0.10 | 0.24 | 0.55 |
| No | 0.72 | 0.39 | 0.08 | 0.00 | 0.00 | 1.00 | 0.97 | 0.90 | 0.76 | 0.45 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.25 | 0.46 | 0.46 | 0.38 | 0.41 | 0.08 | 0.18 | 0.68 | 0.76 | 0.73 |
| No | 0.75 | 0.54 | 0.54 | 0.62 | 0.59 | 0.92 | 0.82 | 0.32 | 0.24 | 0.27 |

Appendix 5. Latent Pathways to Adulthood and Item-response Probabilities Conditional on Membership: Men (6-class model)

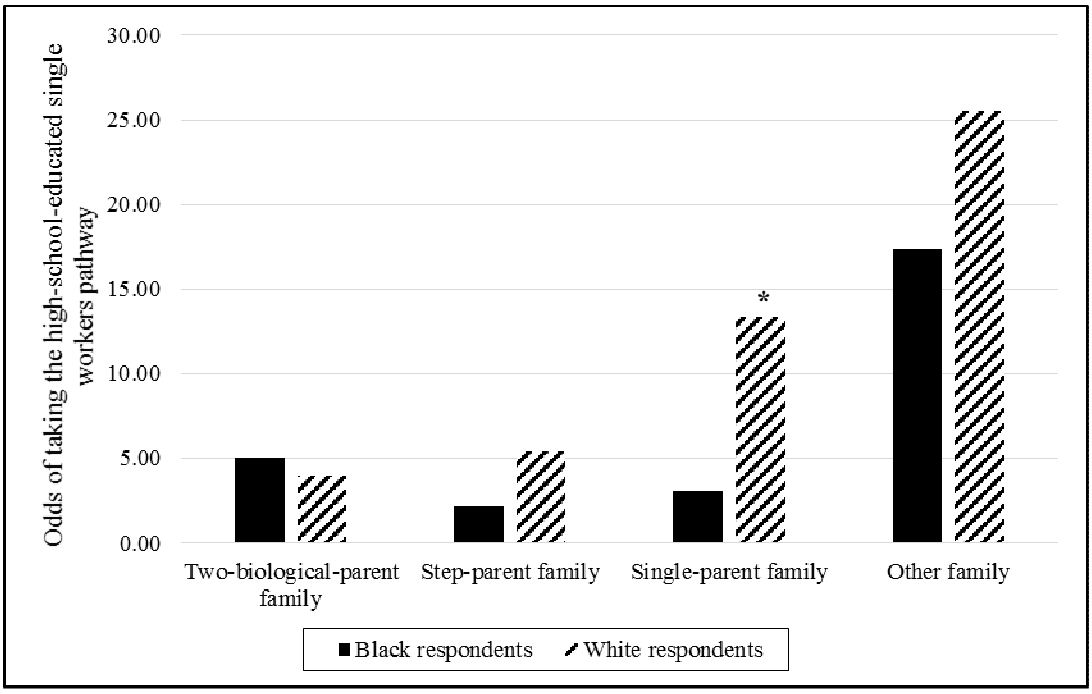
| | College-educated married working parents (*n*=409, 0.20) | | | | | College-educated single workers (*n*=352, 0.17) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.99 | 0.85 | 0.13 | 0.01 | 0.00 | 0.99 | 0.89 | 0.16 | 0.01 | 0.00 |
| Not in school | 0.01 | 0.03 | 0.01 | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 |
| College graduates | 0.00 | 0.12 | 0.85 | 0.99 | 1.00 | 0.00 | 0.10 | 0.82 | 0.99 | 1.00 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.01 | 0.09 | 0.17 | 0.08 | 0.00 | 0.01 | 0.00 | 0.08 | 0.20 | 0.23 |
| Marriage | 0.00 | 0.09 | 0.49 | 0.84 | 0.96 | 0.00 | 0.00 | 0.01 | 0.02 | 0.21 |
| Non-married, non-cohabited | 0.99 | 0.81 | 0.34 | 0.08 | 0.03 | 0.99 | 1.00 | 0.91 | 0.78 | 0.56 |
| Parenthood status | | | | | | | | | | |
| Yes | 0.01 | 0.06 | 0.13 | 0.42 | 0.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 |
| No | 0.99 | 0.94 | 0.87 | 0.58 | 0.13 | 1.00 | 1.00 | 1.00 | 1.00 | 0.90 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.11 | 0.22 | 0.80 | 0.87 | 0.96 | 0.08 | 0.16 | 0.62 | 0.74 | 0.82 |
| No | 0.89 | 0.78 | 0.20 | 0.13 | 0.04 | 0.92 | 0.84 | 0.38 | 0.26 | 0.18 |
| | High-school-educated single parents (*n*=464, 0.22) | | | | | High-school-educated single workers (*n*=233, 0.11) | | | | |
| | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.54 | 0.10 | 0.07 | 0.05 | 0.04 | 0.80 | 0.32 | 0.19 | 0.12 | 0.09 |
| Not in school | 0.46 | 0.90 | 0.93 | 0.95 | 0.96 | 0.20 | 0.68 | 0.81 | 0.88 | 0.87 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.19 | 0.36 | 0.46 | 0.49 | 0.36 | 0.05 | 0.09 | 0.13 | 0.20 | 0.25 |
| Marriage | 0.01 | 0.03 | 0.01 | 0.00 | 0.11 | 0.00 | 0.01 | 0.03 | 0.03 | 0.07 |
| Non-married, non-cohabited | 0.80 | 0.61 | 0.53 | 0.51 | 0.53 | 0.95 | 0.90 | 0.84 | 0.77 | 0.68 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parenthood status | | | | | | | | | | |
| Yes | 0.23 | 0.57 | 0.91 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.06 |
| No | 0.77 | 0.43 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.94 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.31 | 0.51 | 0.55 | 0.53 | 0.50 | 0.28 | 0.44 | 0.57 | 0.57 | 0.58 |
| No | 0.69 | 0.49 | 0.45 | 0.47 | 0.50 | 0.72 | 0.56 | 0.43 | 0.43 | 0.42 |
| | High-school-educated young married parents (*n*=267, 0.13) | | | | | High-school-educated married parents (*n*=360, 0.17) | | | | |
| | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.68 | 0.14 | 0.08 | 0.09 | 0.12 | 0.86 | 0.26 | 0.14 | 0.14 | 0.08 |
| Not in school | 0.32 | 0.86 | 0.92 | 0.91 | 0.85 | 0.14 | 0.74 | 0.86 | 0.86 | 0.89 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.13 | 0.25 | 0.10 | 0.00 | 0.00 | 0.04 | 0.19 | 0.33 | 0.24 | 0.13 |
| Marriage | 0.07 | 0.41 | 0.81 | 0.83 | 0.80 | 0.01 | 0.08 | 0.24 | 0.61 | 0.75 |
| Non-married, non-cohabited | 0.80 | 0.34 | 0.09 | 0.17 | 0.20 | 0.96 | 0.73 | 0.42 | 0.15 | 0.12 |
| Parenthood status | | | | | | | | | | |
| Yes | 0.19 | 0.52 | 0.99 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.41 | 0.78 |
| No | 0.81 | 0.48 | 0.01 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.59 | 0.22 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.43 | 0.69 | 0.77 | 0.70 | 0.75 | 0.33 | 0.66 | 0.81 | 0.83 | 0.81 |
| No | 0.57 | 0.31 | 0.23 | 0.30 | 0.25 | 0.67 | 0.34 | 0.19 | 0.17 | 0.19 |

Appendix 6. Latent Pathways to Adulthood and Item-response Probabilities Conditional on Membership: Women (6-class model)

| | College-educated married working parents (*n*=267, 0.13) | | | | | College-educated single workers (*n*=464, 0.22) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.98 | 0.84 | 0.12 | 0.01 | 0.00 | 0.99 | 0.83 | 0.14 | 0.01 | 0.00 |
| Not in school | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 |
| College graduates | 0.00 | 0.15 | 0.87 | 0.99 | 1.00 | 0.00 | 0.16 | 0.86 | 0.99 | 1.00 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.03 | 0.12 | 0.21 | 0.04 | 0.01 | 0.02 | 0.09 | 0.21 | 0.30 | 0.20 |
| Marriage | 0.02 | 0.17 | 0.57 | 0.92 | 0.92 | 0.00 | 0.00 | 0.02 | 0.12 | 0.35 |
| Non-married, non-cohabited | 0.95 | 0.72 | 0.22 | 0.04 | 0.07 | 0.98 | 0.91 | 0.78 | 0.58 | 0.46 |
| Parenthood status | | | | | | | | | | |
| Yes | 0.01 | 0.07 | 0.23 | 0.51 | 0.94 | 0.00 | 0.00 | 0.00 | 0.04 | 0.24 |
| No | 0.99 | 0.93 | 0.77 | 0.49 | 0.06 | 1.00 | 1.00 | 1.00 | 0.96 | 0.76 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.11 | 0.22 | 0.72 | 0.70 | 0.61 | 0.06 | 0.15 | 0.65 | 0.80 | 0.82 |
| No | 0.89 | 0.78 | 0.28 | 0.30 | 0.39 | 0.94 | 0.85 | 0.35 | 0.20 | 0.18 |
| | High-school-educated single parents (*n*=360, 0.17) | | | | | High-school-educated single workers (*n*=352, 0.17) | | | | |
| | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.66 | 0.20 | 0.17 | 0.14 | 0.16 | 0.88 | 0.40 | 0.24 | 0.23 | 0.12 |
| Not in school | 0.34 | 0.80 | 0.83 | 0.84 | 0.80 | 0.12 | 0.60 | 0.76 | 0.77 | 0.80 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.08 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.24 | 0.40 | 0.38 | 0.40 | 0.34 | 0.11 | 0.18 | 0.30 | 0.37 | 0.29 |
| Marriage | 0.02 | 0.03 | 0.00 | 0.00 | 0.13 | 0.00 | 0.01 | 0.02 | 0.00 | 0.13 |
| Non-married, non-cohabited | 0.73 | 0.57 | 0.62 | 0.60 | 0.53 | 0.89 | 0.80 | 0.68 | 0.63 | 0.58 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parenthood status | | | | | | | | | | |
| Yes | 0.35 | 0.72 | 0.93 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.08 | 0.25 |
| No | 0.65 | 0.28 | 0.07 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.92 | 0.75 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.26 | 0.38 | 0.39 | 0.39 | 0.35 | 0.17 | 0.50 | 0.62 | 0.59 | 0.57 |
| No | 0.74 | 0.62 | 0.61 | 0.61 | 0.65 | 0.83 | 0.50 | 0.38 | 0.61 | 0.43 |
| | High-school-educated young married parents (*n*=409, 0.20) | | | | | High-school-educated married parents (*n*=233, 0.11) | | | | |
| | 18 | 21 | 24 | 27 | 30 | 18 | 21 | 24 | 27 | 30 |
| Enrollment status | | | | | | | | | | |
| In school | 0.67 | 0.18 | 0.11 | 0.14 | 0.15 | 0.90 | 0.44 | 0.26 | 0.14 | 0.10 |
| Not in school | 0.33 | 0.82 | 0.89 | 0.85 | 0.81 | 0.10 | 0.56 | 0.74 | 0.86 | 0.87 |
| College graduates | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 |
| Union status | | | | | | | | | | |
| Cohabitation | 0.31 | 0.25 | 0.07 | 0.00 | 0.00 | 0.11 | 0.28 | 0.22 | 0.05 | 0.00 |
| Marriage | 0.17 | 0.56 | 0.79 | 0.84 | 0.76 | 0.03 | 0.21 | 0.57 | 0.89 | 0.90 |
| Non-married, non-cohabited | 0.52 | 0.19 | 0.14 | 0.16 | 0.24 | 0.87 | 0.51 | 0.21 | 0.06 | 0.10 |
| Parenthood status | | | | | | | | | | |
| Yes | 0.33 | 0.71 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.09 | 0.43 | 0.68 |
| No | 0.67 | 0.29 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.91 | 0.57 | 0.32 |
| Full-time employment status | | | | | | | | | | |
| Yes | 0.24 | 0.43 | 0.42 | 0.38 | 0.40 | 0.28 | 0.57 | 0.69 | 0.62 | 0.56 |
| No | 0.76 | 0.57 | 0.58 | 0.62 | 0.60 | 0.72 | 0.43 | 0.31 | 0.38 | 0.44 |




Appendix 7. Predicted Odds of Male Respondents Taking the High-school-educated Single Workers Pathway Compared to the College-educated Married Working Parents Pathway by Race and Family Structure

*Note*. It was calculated based on the following information (Averages: parent's years of education, GPA in high school, delinquency, maternal age at first birth, and respondent's age at parental survey; One family instability and no early sexual activity). $^{*}p < .05$.

Appendix 8. Predicted Odds of Male Respondents Taking the High-school-educated Single Workers Pathway Compared to the College-educated Married Working Parents Pathway by Race and Family Structure

| | Black respondents | White respondents |
|---|---|---|
| Two-biological-parent family | 5.06 | 3.94 |
| Step-parent family | 2.18 | 5.41 |
| Single-parent family | 3.08 | 13.36 |
| Other family | 17.38 | 25.54 |

First, the equation that compared the high-school-educated single workers (HS. S. W.) to the college-educated married working parents (Coll. M. W. P) in Table 9 can be presented as follows:

$$\ln\left(\frac{\hat{\pi}_{HS.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 11.91 + 0.32\cdot(STP) + 1.22\cdot(SNG) + 1.87\cdot(OTH) + 0.25\cdot(BLK) - 1.16\cdot(BLK\times STP) - 1.72\cdot(BLK\times SNG) - 0.64\cdot(BLK\times OTH) + \beta Z$$

Here, the three subcategories of the family structure variable and race, as well as their interactions, are presented with abbreviations and Z is a vector consisting of other variables. The predicted odds were calculated by exponentiating the following formulas, based on this information (Averages: parent's years of education, GPA in high school, delinquency, maternal age at first birth, and respondent's age at parental survey; One family instability and no early sexual activity).

A. Black respondents

Two-biological-parent family: $\ln\left(\frac{\hat{\pi}_{HS.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (11.91 + 0.25) + \beta Z$

Step-parent family: $\ln\left(\frac{\hat{\pi}_{HS.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (11.91 + 0.25) + \{0.32 + (-1.16)\}\cdot(STP) + \beta Z$

Single-parent family: $\ln\left(\frac{\hat{\pi}_{HS.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (11.91 + 0.25) + \{1.22 + (-1.72)\}\cdot(SNG) + \beta Z$

Other family: $\ln\left(\frac{\hat{\pi}_{HS.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (11.91 + 0.25) + \{1.87 + (-0.64)\}\cdot(OTH) + \beta Z$

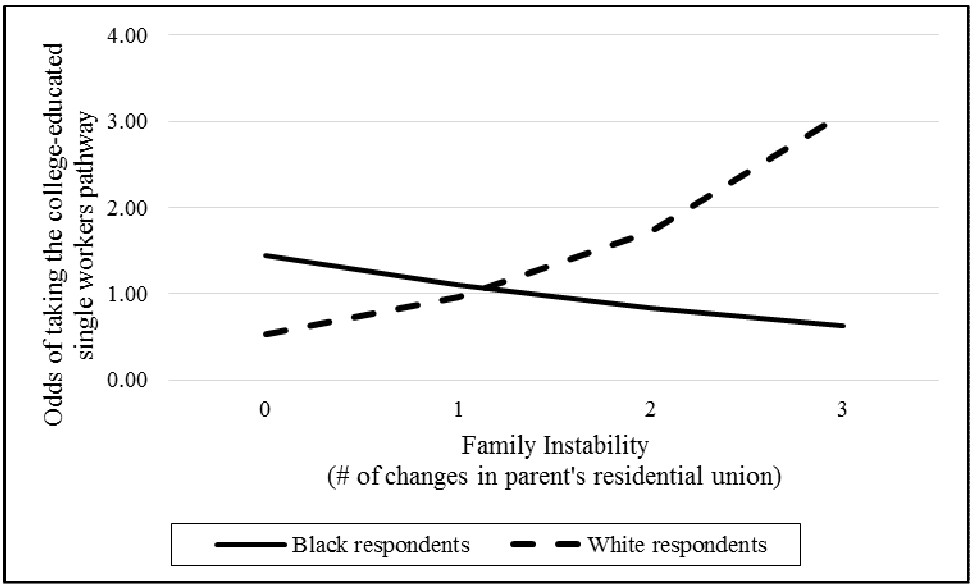
B. White respondents

Two-biological-parent family: $\ln\left(\frac{\hat{\pi}_{HS.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 11.91 + \beta Z$

Step-parent family: $\ln\left(\frac{\hat{\pi}_{HS.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 11.91 + 0.32\cdot(STP) + \beta Z$

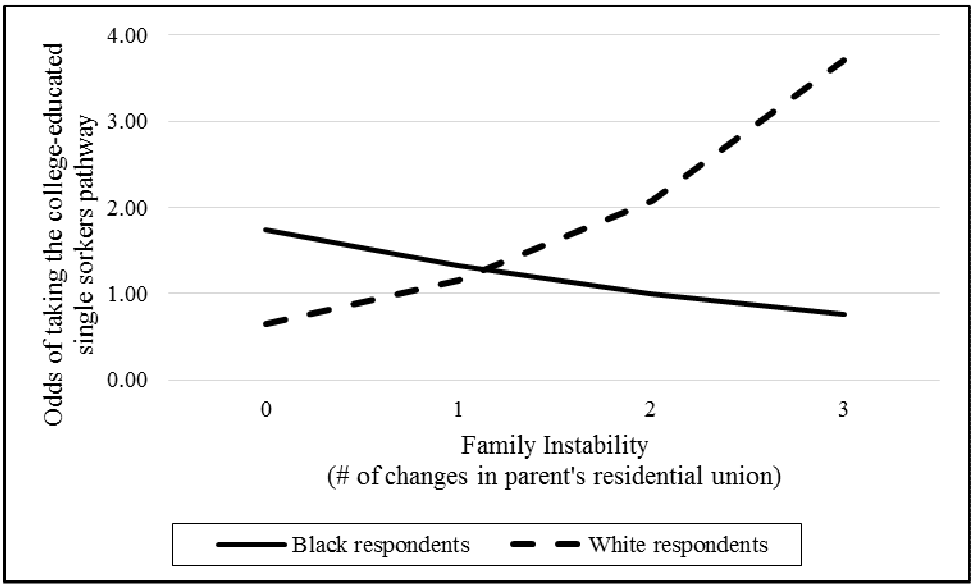
Single-parent family: $\ln\left(\frac{\hat{\pi}_{HS.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 11.91 + 1.22\cdot(SNG) + \beta Z$

Other family: $\ln\left(\frac{\hat{\pi}_{HS.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 11.91 + 1.87\cdot(OTH) + \beta Z$




Appendix 9. Odds of Female Respondents Taking the College-educated Single Workers Pathway Compared to the College-educated Married Working Parents Pathway by Race and Family Instability

*Note*. It was calculated based on the following information (Averages: parent's years of education, GPA in high school, delinquency, maternal age at first birth, and respondent's age at parental survey; Step-parent family, no economic hardship, and no early sexual activity).




Appendix 10. Odds of Female Respondents Taking the College-educated Single Workers Pathway Compared to the College-educated Married Working Parents Pathway by Race and Family Instability

*Note*. It was calculated based on the following information (Averages: parent's years of education, GPA in high school, delinquency, maternal age at first birth, and respondent's age at parental survey; Single-parent family, no economic hardship, and no early sexual activity).

Appendix 11. Predicted Odds of Female Respondents Taking the College-educated Single Workers Pathway Compared to the College-educated Married Working Parents Pathway by Race and Family Instability

| | Step-parent family | | Single-parent family | |
|---|---|---|---|---|
| Family instability | Black respondents | White respondents | Black respondents | White respondents |
| 0 | 1.45 | 0.54 | 1.75 | 0.65 |
| 1 | 1.10 | 0.96 | 1.32 | 1.16 |
| 2 | 0.83 | 1.72 | 1.00 | 2.07 |
| 3 | 0.63 | 3.08 | 0.76 | 3.71 |

First, the equation that compared the college-educated single workers (Coll. S. W.) to the college-educated married working parents (Coll. M. W. P) in Table 14 can be presented as follows:

$$\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 0.36 + 0.58\cdot(\text{INST}) + 0.99\cdot(\text{BLK}) - 0.86\cdot(\text{BLK}\times\text{INST}) - 0.63\cdot(\text{STEP}) - 0.44\cdot(\text{SNG}) + \beta Z$$

Here, the family instability variable, race, and their interaction are presented with abbreviations and Z is a vector consisting of other variables. The predicted odds were calculated by exponentiating the following formulas, based on this information (Averages: parent's years of education, GPA in high school, delinquency, maternal age at first birth, and respondent's age at parental survey; no family instability and no early sexual activity).

A. Black respondents & Step-parent family

Family instability=0: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (0.36 + 0.99) - 0.63 + \beta Z$

Family instability=1: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (0.36 + 0.99) + \{0.58 + (-0.86)\}\cdot(\text{INST}=1) - 0.63 + \beta Z$

Family instability=2: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (0.36 + 0.99) + \{0.58 + (-0.86)\}\cdot(\text{INST}=2) - 0.63 + \beta Z$

Family instability=3: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (0.36 + 0.99) + \{0.58 + (-0.86)\}\cdot(\text{INST}=3) - 0.63 + \beta Z$

B. White respondents & Step-parent family

Family instability=0: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 0.36 - 0.63 + \beta Z$

Family instability=1: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 0.36 + 0.58\cdot(\text{INST}=1) - 0.63 + \beta Z$

Family instability=2: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 0.36 + 0.58\cdot(\text{INST}=2) - 0.63 + \beta Z$

Family instability=3: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 0.36 + 0.58\cdot(\text{INST}=3) - 0.63 + \beta Z$

C. Black respondents & Single-parent family

Family instability=0: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (0.36 + 0.99) - 0.44 + \beta Z$

Family instability=1: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (0.36 + 0.99) + \{0.58 + (-0.86)\}\cdot(\text{INST}=1) - 0.44 + \beta Z$

Family instability=2: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (0.36 + 0.99) + \{0.58 + (-0.86)\}\cdot(\text{INST}=2) - 0.44 + \beta Z$

Family instability=3: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = (0.36 + 0.99) + \{0.58 + (-0.86)\}\cdot(\text{INST}=3) - 0.44 + \beta Z$

D. White respondents & Single-parent family

Family instability=0: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 0.36 - 0.44 + \beta Z$

Family instability=1: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 0.36 + 0.58\cdot(\text{INST}=1) - 0.44 + \beta Z$

Family instability=2: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 0.36 + 0.58\cdot(\text{INST}=2) - 0.44 + \beta Z$

Family instability=3: $\ln\left(\frac{\hat{\pi}_{Coll.S.W}}{\hat{\pi}_{Coll.M.S.P}}\right) = 0.36 + 0.58\cdot(\text{INST}=3) - 0.44 + \beta Z$

Appendix 12. Weighted Descriptive Statistics of the Precursors and Control Variables by Race in Men

| | Black | | White | |
|---|---|---|---|---|
| Variable | *M* | *SD* | *M* | *SD* |
| **Family precursors** | | | | |
| Family socioeconomic status | | | | |
| Parent's years of education | 12.54 | 2.20 | 13.35 | 2.48 |
| Economic hardship | 0.07 | | 0.05 | |
| Family structure experience | | | | |
| Family structure | | | | |
| Two-biological-parent family | 0.29 | | 0.60 | |
| Step-parent family | 0.12 | | 0.15 | |
| Single-parent family | 0.50 | | 0.22 | |
| Other family | 0.09 | | 0.03 | |
| Family instability | 0.55 | 0.70 | 0.48 | 0.74 |
| **Adolescent precursors** | | | | |
| Race | | | | |
| White | - | | 1.00 | |
| Black | 1.00 | | - | |
| GPA in high school | 2.42 | 0.66 | 2.74 | 0.68 |
| Delinquency | 2.05 | 2.26 | 2.04 | 2.16 |
| Early sexual activity | | | | |
| Yes | 0.68 | | 0.36 | |
| No | 0.32 | | 0.64 | |
| **Control variables** | | | | |
| Maternal age at first birth | 21.67 | 4.98 | 23.67 | 4.57 |
| Age at parental survey | 15.30 | 1.00 | 15.26 | 1.01 |
| *N* | 649 | | 1,297 | |

Appendix 13. Weighted Descriptive Statistics of the Precursors and Control Variables by Race in Women

| | Black | | White | |
|---|---|---|---|---|
| Variable | *M* | *SD* | *M* | *SD* |
| **Family precursors** | | | | |
| Family socioeconomic status | | | | |
| Parent's years of education | 12.42 | 2.15 | 13.39 | 2.37 |
| Economic hardship | 0.25 | | 0.11 | |
| Family structure experience | | | | |
| Family structure | | | | |
| Two-biological-parent family | 0.25 | | 0.57 | |
| Step-parent family | 0.13 | | 0.15 | |
| Single-parent family | 0.54 | | 0.25 | |
| Other family | 0.07 | | 0.03 | |
| Family instability | 0.60 | 0.74 | 0.52 | 0.73 |
| **Adolescent precursors** | | | | |
| Race | | | | |
| White | - | | 1.00 | |
| Black | 1.00 | | - | |
| GPA in high school | 2.70 | 0.69 | 3.03 | 0.64 |
| Delinquency | 1.06 | 1.49 | 1.11 | 1.64 |
| Early sexual activity | | | | |
| Yes | 0.48 | | 0.34 | |
| No | 0.52 | | 0.66 | |
| **Control variables** | | | | |
| Maternal age at first birth | 21.33 | 5.08 | 23.76 | 4.57 |
| Age at parental survey | 15.29 | 0.97 | 15.28 | 1.01 |
| *N* | 623 | | 1,224 | |

Appendix 14. Multinomial Logistic Regressions of the Pathways to Adulthood on Precursors: Men (Referent class: High-school-educated single workers pathway)

| | Referent class: High-school-educated single workers pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated married working parents | | College-educated single workers | | High-school-educated single parents | | High-school-educated married working parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.12* | 1.13 | 0.24*** | 1.27 | -0.20*** | 0.82 | -0.10* | 0.90 |
| | (0.06) | [1.01, 1.26] | (0.05) | [1.15, 1.40] | (0.04) | [0.75, 0.90] | (0.04) | [0.83, 0.98] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.04 | 0.96 | -0.43 | 0.65 | 0.56 | 1.75 | -0.10 | 0.90 |
| | (0.53) | [0.34, 2.69] | (0.41) | [0.29, 1.44] | (0.32) | [0.94, 3.26] | (0.34) | [0.46, 1.77] |
| Single-parent family | -0.83** | 0.44 | -1.09** | 0.34 | 0.10 | 1.10 | -0.39 | 0.68 |
| | (0.32) | [0.23, 0.81] | (0.33) | [0.18, 0.64] | (0.20) | [0.74, 1.64] | (0.24) | [0.43, 1.08] |
| Other family | -1.71* | 0.18 | -1.67* | 0.19 | 0.81* | 2.25 | -0.69 | 0.50 |
| | (0.77) | [0.04, 0.82] | (0.68) | [0.05, 0.72] | (0.35) | [1.13, 4.47] | (0.56) | [0.17, 1.50] |
| Family instability | -0.13 | 0.88 | 0.12 | 1.12 | 0.22 | 1.25 | 0.09 | 1.10 |
| | (0.24) | [0.55, 1.40] | (0.17) | [0.80, 1.57] | (0.14) | [0.95, 1.63] | (0.16) | [0.80, 1.52] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |
| White (ref.) | | | | | | | | |
| Black | 0.57 | 1.76 | 0.55* | 1.74 | 0.94*** | 2.56 | -0.55* | 0.58 |
| | (0.31) | [0.96, 3.23] | (0.25) | [1.06, 2.85] | (0.19) | [1.77, 3.70] | (0.26) | [0.35, 0.96] |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| GPA in high school | 2.71*** | 14.98 | 2.22*** | 9.24 | 0.01 | 1.01 | 0.26 | 1.29 |
| | (0.23) | [9.53, 23.56] | (0.20) | [6.24, 13.67] | (0.13) | [0.79, 1.31] | (0.16) | [0.94, 1.77] |
| Delinquency | -0.15* | 0.86 | -0.18** | 0.84 | 0.13** | 1.13 | -0.06 | 0.94 |
| | (0.07) | [0.75, 0.98] | (0.06) | [0.75, 0.94] | (0.04) | [1.05, 1.22] | (0.05) | [0.86, 1.02] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -0.68* | 0.51 | -0.23 | 0.80 | 0.55** | 1.72 | 0.05 | 1.05 |
| | (0.29) | [0.29, 0.89] | (0.23) | [0.51, 1.25] | (0.17) | [1.25, 2.38] | (0.18) | [0.75, 1.48] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | 0.01 | 1.01 | 0.08** | 1.08 | -0.02 | 0.98 | -0.00 | 1.00 |
| | (0.03) | [0.95, 1.08] | (0.02) | [1.03, 1.13] | (0.02) | [0.94, 1.02] | (0.02) | [0.96, 1.04] |
| Age at parental survey | 0.11 | 1.12 | 0.10 | 1.10 | -0.03 | 0.97 | 0.14 | 1.15 |
| | (0.10) | [0.91, 1.36] | (0.10) | [0.91, 1.33] | (0.07) | [0.84, 1.12] | (0.09) | [0.97, 1.36] |
| Intercept | -11.89 | | -13.25*** | | 1.72 | | -1.47 | |
| | (1.93) | | (1.89) | | (1.29) | | (1.49) | |
| *N* | 1,946 | | | | | | | |

Appendix 15. Multinomial Logistic Regressions Estimating Race as a Moderator of the Associations Between Family Structure and the Pathways to Adulthood: Men (Referent class: High-school-educated single workers pathway)

| | Referent class: High-school-educated single workers pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated married working parents | | College-educated single workers | | High-school-educated single parents | | High-school-educated married working parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.13* | 1.13 | 0.24*** | 1.28 | -0.19*** | 0.82 | -0.10* | 0.90 |
| | (0.06) | [1.01, 1.27] | (0.05) | [1.16, 1.41] | (0.05) | [0.75, 0.90] | (0.04) | [0.83, 0.98] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.32 | 0.73 | -0.64 | 0.53 | 0.63 | 1.87 | -0.19 | 0.83 |
| | (0.60) | [0.23, 2.34] | (0.47) | [0.21, 1.32] | (0.37) | [0.91, 3.84] | (0.36) | [0.41, 1.68] |
| Single-parent family | -1.22** | 0.29 | -1.29** | 0.27 | 0.02 | 1.02 | -0.51 | 0.60 |
| | (0.40) | [0.14, 0.64] | (0.42) | [0.12, 0.62] | (0.26) | [0.61, 1.71] | (0.27) | [0.36, 1.02] |
| Other family | -1.87 | 0.15 | -1.47 | 0.23 | 1.12* | 3.07 | -0.55 | 0.58 |
| | (1.05) | [0.02, 1.22] | (0.77) | [0.05, 1.05] | (0.44) | [1.29, 7.30] | (0.64) | [0.16, 2.01] |
| Family instability | -0.02 | 0.98 | 0.18 | 1.19 | 0.23 | 1.26 | 0.12 | 1.13 |
| | (0.25) | [0.60, 1.60] | (0.18) | [0.84, 1.69] | (0.14) | [0.95, 1.66] | (0.17) | [0.82, 1.56] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |
| White (ref.) | | | | | | | | |
| Black | -0.25 | 0.78 | 0.14 | 1.15 | 0.91*** | 2.48 | -0.90* | 0.41 |
| | (0.48) | [0.31, 1.98] | (0.35) | [0.58, 2.28] | (0.26) | [1.50, 4.10] | (0.37) | [0.20, 0.83] |
| GPA in high school | 2.72*** | 15.13 | 2.24*** | 9.39 | 0.02 | 1.02 | 0.25 | 1.29 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (0.23) | [9.74, 23.52] | (0.20) | [6.33, 13.93] | (0.13) | [0.79, 1.30] | (0.16) | [0.94, 1.76] |
| Delinquency | -0.15* | 0.87 | -0.17** | 0.84 | 0.13** | 1.14 | -0.06 | 0.94 |
| | (0.07) | [0.76, 0.99] | (0.06) | [0.75, 0.94] | (0.04) | [1.05, 1.23] | (0.05) | [0.86, 1.03] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -0.71* | 0.49 | -0.24 | 0.79 | 0.54** | 1.71 | 0.04 | 1.04 |
| | (0.29) | [0.28, 0.87] | (0.23) | [0.50, 1.24] | (0.17) | [1.24, 2.37] | (0.18) | [0.74, 1.47] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | 0.01 | 1.01 | 0.07** | 1.08 | -0.02 | 0.98 | -0.00 | 1.00 |
| | (0.03) | [0.94, 1.08] | (0.02) | [1.03, 1.13] | (0.02) | [0.94, 1.02] | (0.02) | [0.96, 1.04] |
| Age at parental survey | 0.11 | 1.12 | 0.09 | 1.10 | -0.03 | 0.97 | 0.14 | 1.15 |
| | (0.10) | [0.91, 1.36] | (0.10) | [0.91, 1.33] | (0.07) | [0.84, 1.11] | (0.09) | [0.97, 1.36] |
| Intercept | -11.91*** | | -13.25*** | | 1.77 | | -1.43 | |
| | (1.94) | | (1.89) | | (1.29) | | (1.49) | |
| **Interactions** | | | | | | | | |
| Black × Step-parent family | 1.16 | 3.19 | 0.87 | 2.40 | -0.24 | 0.79 | 0.64 | 1.89 |
| | (0.82) | [0.64, 15.87] | (0.74) | [0.56, 10.30] | (0.48) | [0.31, 2.03] | (0.68) | [0.50, 7.18] |
| Black × Single-parent family | 1.72* | 5.57 | 0.81 | 2.25 | 0.30 | 1.35 | 0.61 | 1.83 |
| | (0.77) | [1.23, 25.31] | (0.64) | [0.65, 7.84] | (0.37) | [0.66, 2.77] | (0.53) | [0.65, 5.22] |
| Black × Other family | 0.64 | 1.89 | -0.90 | 0.41 | -0.76 | 0.47 | -0.28 | 0.76 |
| | (1.72) | [0.07, 54.73] | (1.60) | [0.02, 9.34] | (0.74) | [0.11, 2.01] | (1.31) | [0.06, 9.82] |
| *N* | 1,946 | | | | | | | |

Appendix 16. Multinomial Logistic Regressions Estimating Race as a Moderator of the Associations Between Family Instability and the Pathways to Adulthood: Men (Referent class: High-school-educated single workers pathway)

| | Referent class: High-school-educated single workers pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated married working parents | | College-educated single workers | | High-school-educated single parents | | High-school-educated married working parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.12* | 1.13 | 0.24*** | 1.27 | -0.20*** | 0.82 | -0.10* | 0.90 |
| | (0.06) | [1.01, 1.26] | (0.05) | [1.15, 1.40] | (0.04) | [0.75, 0.90] | (0.04) | [0.83, 0.98] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.01 | 0.99 | -0.34 | 0.71 | 0.57 | 1.76 | -0.06 | 0.94 |
| | (0.53) | [0.35, 2.81] | (0.41) | [0.32, 1.57] | (0.32) | [0.94, 3.30] | (0.35) | [0.48, 1.85] |
| Single-parent family | -0.80* | 0.45 | -1.01** | 0.36 | 0.10 | 1.11 | -0.36 | 0.70 |
| | (0.33) | [0.23, 0.86] | (0.33) | [0.19, 0.70] | (0.21) | [0.74, 1.66] | (0.25) | [0.43, 1.13] |
| Other family | -1.68* | 0.19 | -1.65* | 0.19 | 0.81* | 2.25 | -0.64 | 0.53 |
| | (0.77) | [0.04, 0.84] | (0.70) | [0.05, 0.75] | (0.36) | [1.11, 4.57] | (0.56) | [0.18, 1.58] |
| Family instability | -0.17 | 0.84 | -0.00 | 1.00 | 0.22 | 1.25 | 0.05 | 1.05 |
| | (0.26) | [0.51, 1.40] | (0.20) | [0.67, 1.49] | (0.16) | [0.91, 1.72] | (0.18) | [0.74, 1.49] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |
| White (ref.) | | | | | | | | |
| Black | 0.44 | 1.55 | 0.23 | 1.26 | 0.93*** | 2.53 | -0.72* | 0.49 |
| | (0.38) | [0.73, 3.27] | (0.33) | [0.66, 2.42] | (0.24) | [1.58, 4.04] | (0.30) | [0.27, 0.88] |
| GPA in high school | 2.70*** | 14.86 | 2.22*** | 9.16 | 0.01 | 1.01 | 0.25 | 1.28 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (0.23) | [9.45, 23.38] | (0.20) | [6.18, 13.58] | (0.13) | [0.79, 1.30] | (0.16) | [0.94, 1.74] |
| Delinquency | -0.15* | 0.86 | -0.18** | 0.84 | 0.13** | 1.13 | -0.06 | 0.94 |
| | (0.07) | [0.75, 0.98] | (0.06) | [0.75, 0.94] | (0.04) | [1.05, 1.22] | (0.05) | [0.86, 1.02] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -0.68* | 0.51 | -0.23 | 0.79 | 0.54** | 1.72 | 0.05 | 1.05 |
| | (0.29) | [0.29, 0.89] | (0.23) | [0.51, 1.24] | (0.17) | [1.24, 2.39] | (0.18) | [0.75, 1.48] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | 0.01 | 1.01 | 0.07** | 1.08 | -0.02 | 0.98 | -0.00 | 1.00 |
| | (0.03) | [0.94, 1.08] | (0.02) | [1.03, 1.13] | (0.02) | [0.94, 1.02] | (0.09) | [0.84, 1.18] |
| Age at parental survey | 0.11 | 1.12 | 0.10 | 1.11 | -0.03 | 0.97 | 0.14 | 1.15 |
| | (0.10) | [0.92, 1.37] | (0.10) | [0.91, 1.34] | (0.07) | [0.84, 1.12] | (0.09) | [0.97, 1.37] |
| Intercept | 11.92 | | -13.32*** | | 13.63*** | | 10.43*** | |
| | (1.93) | | (1.90) | | (2.12) | | (2.20) | |
| **Interaction** | | | | | | | | |
| Black × Family instability | 0.22 | 1.24 | 0.58 | 1.79 | 0.05 | 1.06 | 0.31 | 1.37 |
| | (0.47) | [0.50, 3.10] | (0.36) | [0.89, 3.60] | (0.25) | [0.64, 1.73] | (0.31) | [0.74, 2.51] |
| *N* | 1,946 | | | | | | | |

Appendix 17. Multinomial Logistic Regressions of the Pathways to Adulthood on Precursors: Women (Referent class: High-school-educated workers pathway)

| | Referent class: High-school-educated workers pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated married working parents | | College-educated single workers | | High-school-educated single parents | | High-school-educated married parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.21*** | 1.23 | 0.22*** | 1.24 | -0.14** | 0.87 | -0.05 | 0.96 |
| | (0.05) | [1.11, 1.37] | (0.05) | [1.13, 1.37] | (0.04) | [0.80, 0.94] | (0.04) | [0.88, 1.03] |
| Economic hardship | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -0.10 | 0.91 | -1.57 | 0.21 | 1.56*** | 4.77 | 1.44*** | 4.23 |
| | (0.62) | [0.27, 3.04] | (0.84) | [0.04, 1.07] | (0.31) | [2.61, 8.73] | (0.34) | [2.16, 8.31] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.74 | 0.48 | -1.19** | 0.30 | 0.67* | 1.95 | 0.12 | 1.13 |
| | (0.47) | [0.19, 1.19] | (0.43) | [0.13, 0.71] | (0.33) | [1.03, 3.68] | (0.35) | [0.56, 2.25] |
| Single-parent family | -0.55 | 0.58 | -0.89** | 0.41 | 0.62** | 1.85 | -0.02 | 0.98 |
| | (0.32) | [0.31, 1.07] | (0.34) | [0.21, 0.80] | (0.22) | [1.21, 2.84] | (0.21) | [0.65, 1.48] |
| Other family | -0.65 | 0.52 | -1.13 | 0.32 | 0.29 | 1.33 | -0.10 | 0.91 |
| | (0.74) | [0.12, 2.22] | (0.72) | [0.08, 1.33] | (0.45) | [0.55, 3.23] | (0.44) | [0.38, 2.16] |
| Family instability | 0.03 | 1.03 | 0.44* | 1.55 | -0.08 | 0.92 | 0.10 | 1.10 |
| | (0.22) | [0.67, 1.59] | (0.20) | [1.05, 2.28] | (0.14) | [0.70, 1.21] | (0.18) | [0.78, 1.56] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| White (ref.) | | | | | | | | |
| Black | -0.09 | 0.91 | 0.43 | 1.53 | 1.19*** | 3.29 | -0.64** | 0.53 |
| | (0.29) | [0.52, 1.60] | (0.26) | [0.93, 2.54] | (0.20) | [2.24, 4.43] | (0.24) | [0.33, 0.85] |
| GPA in high school | 1.92*** | 6.81 | 1.75*** | 5.74 | -0.36* | 0.70 | -0.22 | 0.81 |
| | (0.22) | [4.39, 10.56] | (0.21) | [3.79, 8.70] | (0.15) | [0.53, 0.93] | (0.14) | [0.61, 1.07] |
| Delinquency | -0.22* | 0.81 | -0.19* | 0.83 | 0.14* | 1.15 | 0.04 | 1.04 |
| | (0.09) | [0.67, 0.97] | (0.09) | [0.70, 0.98] | (0.07) | [1.01, 1.31] | (0.06) | [0.92, 1.18] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -0.22* | 0.81 | 0.13 | 1.13 | 0.23 | 1.25 | 0.20 | 1.22 |
| | (0.09) | [0.67, 0.97] | (0.20) | [0.77, 1.66] | (0.19) | [0.86, 1.83] | (0.18) | [0.85, 1.74] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | -0.03 | 0.97 | 0.07*** | 1.07 | -0.04 | 0.96 | -0.07** | 0.93 |
| | (0.03) | [0.93, 1.02] | (0.02) | [1.03, 1.12] | (0.02) | [0.93, 1.00] | (0.02) | [0.89, 0.97] |
| Age at parental survey | 0.15 | 1.16 | 0.00 | 1.00 | 0.01 | 1.01 | 0.10 | 1.10 |
| | (0.09) | [0.97, 1.38] | (0.01) | [0.83, 1.20] | (0.09) | [0.84, 1.20] | (0.08) | [0.94, 1.29] |
| Intercept | -10.57*** | | -10.21*** | | 1.90 | | 0.91 | |
| | (1.76) | | (1.84) | | (1.46) | | (1.39) | |
| *N* | 1,946 | | | | | | | |

Appendix 18. Multinomial Logistic Regressions Estimating Race as a Moderator of the Associations Between Family Structure and the Pathways to Adulthood: Women (Referent class: High-school-educated workers pathway)

| | Referent class: High-school-educated workers pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated married working parents | | College-educated single workers | | High-school-educated single parents | | High-school-educated married parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.21*** | 1.23 | 0.22*** | 1.24 | -0.15** | 0.87 | -0.05 | 0.95 |
| | (0.05) | [1.11, 1.36] | (0.05) | [1.12, 1.37] | (0.04) | [0.78, 0.94] | (0.04) | [0.88, 1.03] |
| Economic hardship | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -0.10 | 0.90 | -1.58 | 0.21 | 1.56*** | 4.75 | 1.44*** | 4.23 |
| | (0.61) | [0.27, 3.01] | (0.84) | [0.04, 1.08] | (0.30) | [2.64, 8.55] | (0.34) | [2.18, 8.23] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.86 | 0.42 | -1.30** | 0.27 | 0.72* | 2.06 | 0.20 | 1.22 |
| | (0.51) | [0.16, 1.15] | (0.45) | [0.11, 0.66] | (0.36) | [1.01, 4.20] | (0.36) | [0.60, 2.47] |
| Single-parent family | -0.48 | 0.62 | -0.84** | 0.43 | 0.73* | 2.07 | 0.05 | 1.05 |
| | (0.36) | [0.31, 1.24] | (0.39) | [0.20, 0.92] | (0.29) | [1.17, 3.65] | (0.24) | [0.65, 1.68] |
| Other family | -0.48 | 0.62 | -0.98 | 0.37 | 0.57 | 1.77 | 0.20 | 1.22 |
| | (0.93) | [0.10, 3.78] | (0.86) | [0.07, 2.03] | (0.62) | [0.52, 5.99] | (0.54) | [0.43, 3.50] |
| Family instability | 0.03 | 1.03 | 0.44* | 1.55 | -0.10 | 0.90 | 0.07 | 1.08 |
| | (0.23) | [0.66, 1.61] | (0.20) | [1.05, 2.29] | (0.14) | [0.68, 1.19] | (0.18) | [0.76, 1.53] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| White (ref.) | | | | | | | | |
| Black | -0.03 | 0.97 | 0.50 | 1.65 | 1.52*** | 4.55 | -0.17 | 0.84 |
| | (0.35) | [0.48, 1.93] | (0.34) | [0.85, 3.19] | (0.38) | [2.18, 9.51] | (0.35) | [0.43, 1.67] |
| GPA in high school | 1.94*** | 6.97 | 1.77*** | 5.88 | -0.35* | 0.70 | -0.21 | 0.81 |
| | (0.22) | [4.49, 10.82] | (0.21) | [3.88, 8.90] | (0.14) | [0.53, 0.93] | (0.14) | [0.61, 1.07] |
| Delinquency | -0.21* | 0.81 | -0.19* | 0.83 | 0.14* | 1.14 | 0.04 | 1.04 |
| | (0.09) | [0.67, 0.97] | (0.09) | [0.70, 0.99] | (0.07) | [1.00, 1.31] | (0.06) | [0.92, 1.18] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -0.65* | 0.52 | 0.14 | 1.15 | 0.24 | 1.27 | 0.20 | 1.22 |
| | (0.27) | [0.31, 0.90] | (0.20) | [0.78, 1.69] | (0.19) | [0.87, 1.84] | (0.18) | [0.85, 1.74] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | -0.03 | 0.97 | 0.07** | 1.07 | -0.04 | 0.96 | -0.07** | 0.93 |
| | (0.03) | [0.93, 1.02] | (0.02) | [1.03, 1.12] | (0.02) | [0.93, 1.00] | (0.02) | [0.89, 0.97] |
| Age at parental survey | 0.15 | 1.16 | 0.01 | 1.01 | 0.01 | 1.01 | 0.10 | 1.11 |
| | (0.09) | [0.97, 1.39] | (0.10) | [0.83, 1.21] | (0.09) | [0.85, 1.20] | (0.08) | [0.94, 1.30] |
| Intercept | -10.70 | | -10.35*** | | 1.84*** | | 0.86*** | |
| | (1.78) | | (1.86) | | (1.46) | | (1.40) | |
| **Interactions** | | | | | | | | |
| Black × Step-parent family | 1.00 | 2.72 | 0.78 | 2.17 | -0.17 | 0.84 | -0.77 | 0.46 |
| | (0.89) | [0.48, 15.62] | (0.65) | [0.60, 7.83] | (0.61) | [0.26, 2.78] | (0.65) | [0.13, 1.67] |
| Black × Single-parent family | -0.35 | 0.71 | -0.25 | 0.78 | -0.46 | 0.63 | -0.52 | 0.59 |
| | (0.54) | [0.25, 2.03] | (0.50) | [0.29, 2.09] | (0.48) | [0.24, 1.62] | (0.50) | [0.22, 1.59] |
| Black × Other family | -0.62 | 0.54 | -0.75 | 0.47 | -1.03 | 0.36 | -1.51 | 0.22 |
| | (1.40) | [0.04, 8.34] | (1.67) | [0.02, 12.46] | (0.94) | [0.06, 2.26] | (0.82) | [0.04, 1.10] |
| *N* | | | | 1,847 | | | | |

Appendix 19. Multinomial Logistic Regressions Estimating Race as a Moderator of the Associations Between Family Instability and the Pathways to Adulthood: Women (Referent class: High-school-educated workers pathway)

| | Referent class: High-school-educated workers pathway | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | College-educated married working parents | | College-educated single workers | | High-school-educated single parents | | High-school-educated married parents | |
| Variable | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] | *b* (*SE*) | OR [95% CI] |
| **Family precursors** | | | | | | | | |
| Family socioeconomic status | | | | | | | | |
| Parent's years of education | 0.21*** | 1.23 | 0.22*** | 1.25 | -0.14** | 0.87 | -0.05 | 0.96 |
| | (0.05) | [1.11, 1.36] | (0.05) | [1.13, 1.38] | (0.04) | [0.79, 0.94] | (0.04) | [0.88, 1.03] |
| Economic hardship | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -0.12 | 0.89 | -1.51 | 0.22 | 1.56*** | 4.77 | 1.44*** | 4.23 |
| | (0.63) | [0.26, 3.05] | (0.81) | [0.05, 1.09] | (0.31) | [2.61, 8.73] | (0.34) | [2.16, 8.29] |
| Family structure experience | | | | | | | | |
| Family structure | | | | | | | | |
| Two-biological-parent family (ref.) | | | | | | | | |
| Step-parent family | -0.64 | 0.53 | -1.27** | 0.28 | 0.70* | 2.01 | 0.12 | 1.13 |
| | (0.47) | [0.21, 1.33] | (0.45) | [0.12, 0.68] | (0.33) | [1.05, 3.84] | (0.36) | [0.55, 2.30] |
| Single-parent family | -0.48 | 0.62 | -0.93** | 0.40 | 0.64** | 1.89 | -0.02 | 0.98 |
| | (0.32) | [0.33, 1.16] | (0.34) | [0.20, 0.77] | (0.22) | [1.22, 2.92] | (0.21) | [0.65, 1.50] |
| Other family | -0.57 | 0.56 | -1.16 | 0.31 | 0.31 | 1.37 | -0.09 | 0.91 |
| | (0.73) | [0.13, 2.37] | (0.72) | [0.08, 1.29] | (0.46) | [0.56, 3.32] | (0.45) | [0.38, 2.21] |
| Family instability | -0.08 | 0.93 | 0.51* | 1.66 | -0.13 | 0.88 | 0.09 | 1.09 |
| | (0.25) | [0.57, 1.51] | (0.22) | [1.08, 2.56] | (0.18) | [0.63, 1.24] | (0.20) | [0.74, 1.63] |
| **Adolescent precursors** | | | | | | | | |
| Race | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| White (ref.) | | | | | | | | |
| Black | -0.41 | 0.66 | 0.58* | 1.79 | 1.11* | 3.02 | -0.65* | 0.52 |
| | (0.41) | [0.30, 1.47] | (0.30) | [1.00, 3.19] | (0.23) | [0.53, 0.93] | (0.28) | [0.30, 0.90] |
| GPA in high school | 1.93*** | 6.88 | 1.75*** | 5.74 | -0.36* | 0.70 | -0.22 | 0.81 |
| | (0.23) | [4.42, 10.69] | (0.21) | [3.79, 8.69] | (0.15) | [0.53, 0.93] | (0.14) | [0.61, 1.06] |
| Delinquency | -0.21* | 0.81 | -0.19* | 0.83 | 0.14* | 1.15 | 0.04 | 1.04 |
| | (0.09) | [0.67, 0.97] | (0.09) | [0.70, 0.98] | (0.07) | [1.01, 1.31] | (0.06) | [0.92, 1.18] |
| Early sexual activity | | | | | | | | |
| No (ref.) | | | | | | | | |
| Yes | -0.66* | 0.52 | 0.12 | 1.13 | 0.23 | 1.26 | 0.20 | 1.22 |
| | (0.27) | [0.30, 0.88] | (0.20) | [0.77, 1.66] | (0.19) | [0.86, 1.84] | (0.18) | [0.85, 1.74] |
| **Control variables** | | | | | | | | |
| Maternal age at first birth | -0.03 | 0.97 | 0.07** | 1.07 | -0.04 | 0.96 | -0.07** | 0.93 |
| | (0.03) | [0.93, 1.02] | (0.02) | [1.03, 1.11] | (0.02) | [0.93, 1.00] | (0.02) | [0.89, 0.97] |
| Age at parental survey | 0.15 | 1.16 | 0.00 | 1.00 | 0.01 | 1.01 | 0.10 | 1.10 |
| | (0.09) | [0.97, 1.38] | (0.10) | [0.83, 1.20] | (0.09) | [0.84, 1.20] | (0.08) | [0.94, 1.29] |
| Intercept | -10.57 | | -10.22*** | | 1.93 | | 0.91 | |
| | (1.78) | | (1.84) | | (1.47) | | (1.40) | |
| **Interaction** | | | | | | | | |
| Black × Family instability | 0.55 | 1.73 | -0.31 | 0.73 | 0.13 | 1.14 | 0.02 | 1.02 |
| | (0.45) | [0.72, 4.21] | (0.29) | [0.41, 1.31] | (0.25) | [0.70, 1.85] | (0.26) | [0.62, 1.70] |
| *N* | 1,847 | | | | | | | |

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