Pathways to Childlessness in the United States: A Group-Based Analysis of Employment and Marital Union Trajectories

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September 21, 2012

Abstract

The rate of permanent childlessness has been increasing in the United States for the last three decades. To identify distinct origins of childlessness, I examine lifetime patterns of education, employment and marriage between the ages of 18 and 44. Using data from National Longitudinal Survey of Youth (1979-2010), I identify trajectories of educational attainment, labor force attachment and marital status separately for men and women, and link them to likelihood of remaining childless. White, never-married men and women are more likely to remain childless. Family background has differential effects for remaining childless by sex. Early transition to labor force was highly influential for women's likelihood of remaining childless but not for men's. The reverse was true for the effect of timing of first marriage. The distinct trajectories men and women follow to childlessness illustrates the lifelong patterns of accumulating risks for childlessness. The discontinuous increases in risks for childlessness over different stages of the life course further reveal the critical periods for future fertility outcomes.

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Introduction

While the decreasing rates of higher parity births and postponement of childbearing contributed most to the declining TFRs in the United States as well as in many other industrialized countries (Bongaarts, 2002; Bongaarts & Feeney, 1998; Kohler et al., 2002), childlessness has become an increasingly influential component of low fertility. Between 1976 and 2010, childlessness rates for women of ages 40-44 increased from 10.2% to 18.8% and from 10.5% to 19.7% for women of age 35-39 (U.S. Census Bureau, 2011). Available data show that the estimated rates are even higher for men in the United States (Bachu, 1996; Martinez et al., 2006).

Fertility decline and increasing childlessness have long-term economic and social ramifications and remain a perennial concern for policy makers in low fertility countries (Clark et al., 2010; McDonald & Kippen, 2001). Declining fertility means that fewer people will be in the workforce in the next generation, which is expected to lead to problems associated with the labor market. For the United States, labor force projections by the Bureau of Labor Statistics show that declining fertility will translate into a decline in annual growth rate of labor force from 1.6% (1950-2000) to .06% (2000-2050) (Toossi, 2002). According to U.S. Census Bureau, with fewer people working to compensate for those who will not be working anymore, the dependency ratio is expected to increase from 22 in 2010 to 35 in 2030 (Crenshaw & Rabison, 2010; Vincent & Velkoff, 2010). As a result of these changes in labor prospects, declining fertility portends an increasing need for immigrant workers for sustaining economies of industrialized countries, which may raise public policy concerns.

The growth in childlessness marks an important set of changes in American families with far-reaching consequences. Increasing childlessness indicates that a group of individuals may be emerging with certain vulnerabilities at older age. For instance, children can serve as valuable social resources by propelling parents to change the nature of their civic engagement. In absence of such motivation, the childless may feel less responsible for the problems associated with community and children, such as the schooling system (Keizer et al., 2010). In turn, the childless themselves may be less able to draw on community

resources for assistance at older ages (Wenger et al., 2007). Finally, evidence suggests that the elder childless are more likely to be institutionalized (i.e., living in hostels and nursing homes) and live alone (Koropeckyj-Cox & Call, 2007; Rowland, 1998), and to have smaller family networks (Dykstra, 2006).

The many events unfolding over the long period of the life course when one might have children suggests potentially numerous origins of childlessness. Life course theorists have long attributed the timing of major life transitions for lasting consequences for many dimensions of family life (Elder, 1994; Elder, 1995). The timing of marriage relative to one's remaining years for childbearing has obvious consequences for the opportunity for a first childbirth. However, the timing of other transitions may be just as important. Delays in leaving home and establishing an independent household imply children remaining closely tied to their families into a later period of adulthood. Longer durations of schooling similarly imply a longer period in a state commonly associated with low risk for first childbirth. However, the biggest effects may come from labor market experiences. Early joblessness and extended periods of joblessness during early adulthood when marriage rates are highest may have particularly large consequences for transitioning to marriage, the remaining normative gateway to first childbirth. The destabilizing effects from episodes of joblessness for cohabiting couples may also bring a postponement in first birth that permanently shifts the lifetime risk for childlessness. Finally, there is growing evidence of population wide declines in both marriage and fertility during economic recession (Sobotka et al., 2011).

This paper examines the importance of lifetime experiences in education, employment, and marriage for remaining childless into mid-adulthood. I use the National Longitudinal Study of Youth 1979 (NLSY79) to examine the importance of men and women's individual trajectories through schooling, the labor market and marriage for their risk of remaining childless in middle adulthood. I adapt a novel method for describing individual life course trajectories that accounts for the timing of school leaving, unemployment and marriage as well as the duration in full-time employment, part-time employment and joblessness. I first identify 9 types of life course trajectories for women and 8 types of life course

trajectories for men distinguished by unique timings and durations in schooling, labor force participation and marriage. I consider men and women separately to account for the differences in both their life course experiences and upper age limits for fertility. I then examine the relationship between membership in these different trajectory groups and the probability of remaining childless at age 44. Introducing individual membership in a group of closely related trajectories into a standard logistic regression model presents a tractable method for evaluating the importance of the heterogeneity in individual biographies for later life outcomes.

Life Course and Childlessness

Empirical studies of fertility point to a common set of correlates with permanent childlessness. Most of these earlier studies focus on women while only a few includes male samples. Childlessness is higher among Whites than Blacks and Hispanics (Abma & Martinez, 2006; Livingston & Cohn, 2010), positively associated with education for women (Abma & Martinez, 2006; González & Jurado-Guerrero, 2006; Livingston & Cohn, 2010) and more prevalent among the unmarried and never-married than currently married and ever-married for both women and men (Abma & Martinez, 2006; Keizer et al., 2007; Koropeckyj-Cox & Call, 2007; Parr, 2010). In addition, currently working women are more likely to be childless than non-working women (Abma & Martinez, 2006). Finally, continuity of employment seems to lead to higher likelihood of remaining childless for women and lower likelihood for men (Keizer et al., 2007).

While there is consistent evidence regarding most of the characteristics of the childless, there is less agreement about the factors causing childlessness. Studies of childlessness commonly attribute the same factors identified in prevailing theories of low fertility to account for childlessness. The large literature concerning fertility consistently identifies factors related to education (Brand & Davis, 2011; Marsiglio & Hinojosa, 2007; Rindfuss et al., 1996), labor markets (Bianchi & Milkie, 2010; Brewster & Rindfuss, 2000; McDonald, 2000), marriage (Bumpass, 1990; Martin et al., 2010; Musick, 2007), technological

advances (Goldin & Katz, 2000), family background (Murphy & Wang, 2001; Murphy & Knudsen, 2002) and cultural norms (Davis, 1963; Inglehart, 2008; Notestein, 1945) which may contribute to low fertility. Yet, there are limits to the relevance of this evidence for understanding childlessness. The main problem is that many of the identified correlates with age at first birth vary over time. Changes in schooling, labor market experiences, living arrangements and family structure present a shifting set of risks over the life course. Risks associated with childlessness may also change at certain points over the course of fertile years defining critical periods where effects of transitions, and lack of transition thereof, can drastically increase. Consequently, many of the correlates with childlessness reflect the cumulative effects of a lifetime of transitions associated with varying risks for a first birth. Empirical studies of the predictors of later life childlessness risk ignoring the intermediate accumulation of these risks leading up to eventual childlessness. Studies which emphasize contemporaneous correlates with childlessness during the years beyond the average biological fertile period may similarly underestimate the importance of the timing of prior major life transitions.

Most of the studies that focus on childlessness or age at first birth do not take into account the life stage at which individuals actually spent time in the marital union or in the labor market. Put differently, the effects of timing of transition to labor force and union formation on completed fertility mostly remain an uncharted territory in the literature. On the other hand, the complexity of life events that occur during transition to adulthood is well studied (Elder, 1994; Elder, 1995). Many people leave home, go to school, enter the labor force, experience short or long spells of unemployment, and get married or have a partner before even considering having children. However, more important is the fact that not all these transitions are in harmony with each other at each point in life, and countervailing forces may be the reason behind individuals not having children at all or delaying having until after their fertile years.

Leaving school may directly increase the risk for first childbirth as well as indirectly through increasing the risk for marriage or cohabitation (Guzzo, 2006; Landale et al., 2010). On the contrary, prolonged schooling may lead to postponement of marriage and

having children. Furthermore, a spell of unemployment may directly decrease the risk of having a first child for men as well as indirectly through its negative effects on marriage prospects (Carlson et al., 2004; Guzzo, 2006; Xie et al., 2003). Finally, the effect of marriage on the risk of first birth also likely strengthens over time, with effects from marriage occurring when women are in their late 30s being much greater than when they are in their mid-20s (Baizan et al., 2003; Martin, 2000). As the complex of life events compete for individuals' limited time and capacity of commitment, they may simply delay making a decision regarding whether to have a child. Instead of seeing childlessness as a one-time decision individuals make, it should be considered as the cumulative outcome of many decisions, limited by socioeconomic constraints.

Consideration of the entire trajectory of transitions provides an alternate method for describing the heterogeneity in individual biographies. Examining transitions presents a challenge because of the complexity of life courses (Shanahan, 2000). This complexity is embedded in the number of transitions and possible sequencing of these transitions. While data related to many transitions are readily available, researchers generally lack necessary analytical tools to study all available data. In this context, trajectories can be considered as representations of life histories or biographies, narrating role acquisitions over the life course with a focus on the timing of transitions. They are capable of capturing timing and sequences of transitions in addition to providing a novel way of visually representing these changes over time. More importantly, defining trajectories allows classifying individuals by the type of timing, duration and sequences occurring through a defined set of transitions. This classification provides analytical leverage to examine the likely effects of transitions on fertility outcomes. For this reason, it is equally important to analyze an optimal number of trajectories that may represent the differences in timing of transitions.

I first classify individual biographies into groups of common trajectories through school leaving, types of labor force attachment and marriage. The crucial part of the analysis is the comparison of trajectories with different timing of transitions controlling for other factors identified in the literature. As I discussed above, behaviors in each of

these trajectories may have different effects on the likelihood of remaining childless for men and women so I analyze them separately.

I expect that there will be identifiable pathways to childlessness for both men and women. I consider them as the trajectories with highest likelihood of remaining childless. For women, they are expected to be never-married, full-time employed women. I also expect that earlier school-to-work transition will increase the likelihood of remaining childless for women while earlier union formation will decrease the likelihood of remaining childless compared to those who are never-married independent of labor force participation. Contrarily, for men, those who experience an early unemployment period during their prime fertile years are expected to have highest rates of childlessness. Considering that men's union formation strategy might be intertwined with their success in the labor market, I expect that men who transition to high labor force attachment in the absence of closely following union formation would more likely to remain childless than others.

Method

Data

I study the trajectories to childlessness using panel data from National Longitudinal Survey of Youth, 1979 Cohort (NLSY79). NLSY79 is a nationally representative sample of 12,686 men and women who were 14-22 years old when they were first interviewed in 1979. Respondents were interviewed annually from 1979 until 1994, and biennially through 2010. I use all available waves in this analysis.

The NLSY79 presents many advantages for studying fertility. Subjects were asked questions about school, family life, social relationships, work and daily activities. The detailed questions about respondents' labor force participation and family life were repeated annually and then biannually, providing an exceptionally high frequency of observations for a nationally representative sample. A large share of respondents has also been followed into middle adulthood, a period when most women subjects reach the biological limit for childbirth.

I restrict the analysis to the respondents whose childlessness status is known at the age of at least 44 or later. As a result, I exclude the respondents whose permanent childlessness status is not available (n=4,368). Although it is biologically possible to have a child after this age, especially for men, previous research shows that it is quite unlikely (Keizer et al., 2007; Kirmeyer & Hamilton, 2011). In this sample, 99.2% of fathers and 99.9% of mothers had their first child before the age of 44 while the age of the respondents ranged from 45 to 55 at the date of the last interview. I consider those respondents who had their first child after the age of 44 as parents (n=27). With these constraints and missing data, the analytical sample consists of a total of 6,398 respondents: 3,131 men (48.94%) and 3,267 (51.06%) women.

Variables

This analysis uses two sets of dependent variables. The first set of variables is measures of education, labor force attachment, and marital union formation of the respondents, and used in estimating the trajectories. The dependent variable of interest, remaining childless, is used in logistic regression models. NLSY79 includes the number of children ever born to the respondent. I constructed a dichotomous variable using this variable. If respondent had no children by the age 44, they are coded as "childless." If they had one or more children, they are coded as "parent." This variable is used in logistic regression models as the dependent variable of interest.

I estimated educational trajectories using a variable that captures whether respondent was enrolled at school at each age. Approximately 67% of the sample had the same years of education at age 24 and age 44. 12% had one more year of education over the course of 20 years, 9% completed two more years of education and 5% had three or more years of education between two measurement points. The mean difference for overall sample was .70 years. Motivated by this relatively stable educational attainment after the initial school completion, education trajectories can also be considered as showing the timing of school-leaving.

I consider labor force attachment with reference to a definition of full-time work in

order to consolidate the many outlying values of hours worked common in studies of labor force participation. The U.S. Department of Labor considers full time employment as working 35 hours or more per week and part time as 1 to 34 hours per week. Rather than relying on this rather arbitrary threshold for defining full-time work, I used kernel density estimations to distinguish between those who have low, medium and high labor force attachment (not shown). I used 5 hours/week and 30 hours/week as indicators of latent employment trajectories and use other operationalizations of labor force attachment in the sensitivity analysis (discussion session).

In estimating marital trajectories, I used the age at first marriage as an absorbing-state variable for which respondents had a value of zero before the age at first marriage and had a value of one after that age. The never married were assigned zeros for all ages. Consequently, the shape of marital trajectory can be read as the average timing of the first marriage for respondents belonging to that particular trajectory group. I preferred this operationalization since I already control for the direct effects of incidence and duration of the first and second marriages in second part of the analysis.

While a large share of first births in the U.S. occurs in cohabiting unions (Bumpass & Lu, 2000; Musick, 2002; Musick, 2007), I do not estimate separate cohabitation trajectories due to two main reasons. First, many cohabitating unions are short-lived (Schoen et al., 2007) which makes it harder to capture the formation or dissolution of the union due to data unavailability. Second, for a considerable number of cohabitating couples, cohabitation is just a step towards marriage (Musick, 2007). As such, some of the effects of cohabitation would be expected to be picked up by the eventual marital union formation. Considering these factors, I include the number of co-residential partnerships in the logistic regression models to account for the direct effects of cohabitation on remaining childless instead of estimating trajectories of cohabitation.

To control for the direct effects of education on the likelihood of remaining childless, I calculated completed educational attainment at or after age 44, using number of years of schooling. I next categorized years of education at age 44 in a more informative way. I consider those who have less than 12 years of education as high school dropout, those

who have 12 years of education as high school graduates, those who have 13 to 15 years of education as some college educated, those who have 16 years of education as college graduates and those who have more than 16 years of education in the category of higher education.

To account for the effects of lifetime labor force participation apart from the effects of timing of labor force attachment, I created a cumulative measure of yearly hours worked. I divided this cumulative measure by a full-time equivalent (35x52=1820) to better reflect average work experience of respondents compared to full-time employment.

I use three measures to control for the effects of marital history. These measures include the length of time in months the respondent spent in a marital union, separately for first and second marriages, and total number of spouses and coresidential partners who were living with the respondent at the time of interview.

Considering the fact that hourly wages differ, it is necessary to account for the effect of overall income over the life course. I account for income with a measure of individuals' relative standing within the NLSY79 income distribution. Assuming that spousal income may contribute as much as personal income for the decisions related to having a first child, I see it more relevant to include a measure of family income at ages when respondents were married and individual earnings when they were single.

Additional controls added to the model include race, family background and religiosity. Race is a key variable in NLSY79 coded as (1) Hispanic, (2) Black, and (3) Non-Black Non-Hispanic White. I constructed dummy variables to include in the logistic regression models. Family background is measured by maternal and paternal education in addition to the number of siblings the respondent reported. Religiosity is measured by religious attendance in 1982.

Results

Childless NLSY79 cohort members display many of the characteristics of childlessness previously reported. Table 1 shows descriptive statistics by sex and parenthood status

at age 44. The first thing to note is that the proportion of the analytic sample that is childless is comparable to estimates for women based on National Vital Statistics (Kirmeyer & Hamilton, 2011), nationally representative surveys such as the National Survey of Family Growth for men and women (Martinez et al., 2006), and findings from studies of childlessness for women (Abma & Martinez, 2006). That is, 16.53% and 22.17%, for women and men, respectively.

Estimated differences between parents and childless individuals in the NLSY79 cohort from logistic regression models with a full set of controls verify many of the characteristics of the childless previously reported. Table 2 reports estimates from stratified logistic regressions including a set of controls common in models of fertility outcomes, separately for women and men.

High school dropout, high school graduates and women who have some college education have lower likelihood of remaining childless compared to those who have higher education (more than 16 years). There is a steady linear relationship between completed education and remaining childless for women as evident from the change in the magnitude of the coefficients. Note that this is in contrast to the effects of education on men's likelihood of remaining childless, which has a positive but mostly nonsignificant association.

Men's model in Table 2 shows that the differences for men and women in the race estimates are quite striking. Even after controlling for socioeconomic status, marital history and family background, White and Hispanic men are likely to remain childless than Black men. Specifically, White men are more than three times more likely to be childless than Black men controlling for other covariates in the model. Hispanics are also more likely than Blacks to remain childless, but similar to women, they have lower odds of remaining childless compared to the difference between Whites and Blacks. This finding is not inconsistent with the possibility of two pathways to childlessness for men since controls for men's employment trajectories are not included in this model. As a result, this model cannot account for different timing of transitions among men which may explain some of the racial differences.

Family background is very influential regarding men's likelihood of remaining childless except religious background and attendance, which are all non-significant. Contrary to women, paternal education reduces the odds of remaining childless among men. On the other hand, every year increase in maternal education increases the odds of remaining childless by 7%. Finally, each sibling decreases men's odds of remaining childless approximately 7%.

Figure 3 shows the sample prevalence and conditional probabilities for latent trajectories for women and Table 4 shows descriptive statistics by women's trajectories. Overall, nine trajectories fit the data best identifying differences in the analytical sample regarding timing of transitions. I leave formal discussion of model selection to later after discussion of trajectory characteristics. I assigned individuals to different trajectories using highest predicted probability. Considering that entropy was very high for the model with 9 trajectories for women (discussed below), the assignment was very clear-cut.

For women's trajectories, the first thing to note is that not all trajectories have the same prevalence in the sample as would be expected. The biggest group is trajectory #1 with 17.05%. It is followed by trajectories #3 and #5 with percentages of 15.18 and 13.96, respectively. The smallest group identified is trajectory #9 with a prevalence of 5.97%. The most striking finding reflected in Table 7 is the natural clustering of trajectories in terms of likelihood of remaining childless. Trajectories #6 and #7 have much higher rates of childlessness than all other trajectories while trajectories #2, #4, and #5 include almost no childless individuals. Since no consideration is given to the probability of childlessness in the estimation of models, this finding provides convincing evidence for my hypothesis that there are in fact pathways to childlessness.

Table 5 shows baseline logistic regression model from Table 2 in addition to models controlling for class membership for women. I initially chose trajectory #5 as the reference category as it is the least likely to group to remain childless and allow for comparison of transitions. Note that trajectory #5 is characterized by early school leaving, early transition to marriage and later transition to labor force.

The results clearly show that trajectory membership is an important predictor of

remaining childless even after controlling for the direct effects of race, education, employment, marital history, income and family background. The most obvious finding is that compared to trajectory #5, all other trajectories are more likely to remain childless. More importantly, the magnitude of effects of class membership differs immensely between trajectories. This finding confirms that timing of transitions matter and the effects of transitions in different trajectories differ on their effects on remaining childless.

Overall, these results suggest that men and women differ in terms of the effects of transitions to labor force and first marriage. More specifically, while women's transition to first marriage does not have any effect on their likelihood of remaining childless, it influences men's likelihood negatively. On the contrary, while men's transition to labor market does not have any influence on their likelihood of remaining childless independent of actual time spent in the labor market, women's early transition to labor market increases their likelihood of remaining childless even after all the controls in the model.

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Table 1: Descriptive Statistics by sex and parenthood status at age 44, National Longitudinal Study of Youth 1979-2010*

	Fathers	Childless Men	Mothers	Childless Women	Total
Demographic Characteristics					
Race					
Non-Hispanic White %	0.54 (0.50)	0.59 (0.49)	0.54 (0.50)	0.57 (0.50)	0.55 (0.50)
Black %	0.27 (0.44)	0.24 (0.43)	0.27 (0.44)	0.29 (0.45)	0.27 (0.44)
Hispanic %	0.19 (0.39)	0.17 (0.38)	0.19 (0.39)	0.14 (0.35)	0.19 (0.39)
Completed Education (44+)					
High School Drop-Out % (Less than 12 years)	0.11 (0.31)	0.09 (0.29)	0.08 (0.27)	0.03 (0.18)	0.09 (0.28)
High School Graduate % (12 years)	0.45 (0.50)	0.42 (0.49)	0.42 (0.49)	0.29 (0.45)	0.42 (0.49)
Some College % (13-16 years)	0.22 (0.41)	0.23 (0.42)	0.28 (0.45)	0.29 (0.45)	0.25 (0.43)
College Graduate % (16 years)	0.12 (0.32)	0.17 (0.37)	0.12 (0.33)	0.17 (0.37)	0.13 (0.34)
Higher Education % (+16 years)	0.11 (0.31)	0.10 (0.30)	0.10 (0.30)	0.22 (0.41)	0.11 (0.32)
Employment History					
Hours Worked Equivalent of Full Time**	0.92 (0.19)	0.88 (0.23)	0.75 (0.28)	0.88 (0.22)	0.84 (0.25)
Marital History					
Never Married %	0.10 (0.31)	0.52 (0.50)	0.09 (0.29)	0.39 (0.49)	0.17 (0.37)
Age at 1st Marriage	25.11 (5.49)	29.58 (7.05)	22.94 (5.50)	27.38 (7.17)	24.54 (6.02)
Months in 1st Marriage	151.76 (96.10)	55.50 (78.40)	160.40 (103.57)	73.39 (87.62)	138.39 (103.81)
Months in 2nd Marriage	22.01 (50.55)	7.79 (29.54)	27.41 (58.37)	14.94 (41.45)	22.17 (51.99)
Number of Spouses and Coresidential Partners	1.51 (0.84)	0.86 (0.87)	1.44 (0.86)	1.10 (1.07)	1.37 (0.90)
Log of Average Family Income					
Between ages 18 and 30	10.03 (0.61)	9.97 (0.67)	9.93 (0.66)	10.02 (0.60)	9.98 (0.64)
After age 30	10.65 (0.88)	10.34 (0.94)	10.55 (0.85)	10.52 (0.83)	10.56 (0.88)
Family Background					
Father's Education	10.94 (4.01)	11.18 (3.98)	10.65 (3.93)	11.87 (3.68)	10.92 (3.96)
Mother's Education	10.91 (3.31)	11.35 (3.01)	10.76 (3.23)	11.68 (3.09)	10.96 (3.24)
Number of Siblings	3.82 (2.60)	3.26 (2.34)	3.89 (2.63)	3.17 (2.27)	3.73 (2.57)
Religious Attendance****	2.83 (1.59)	2.61 (1.57)	3.18 (1.64)	3.15 (1.74)	2.98 (1.64)
Religious Affiliation - Youth					
Catholic %	0.33 (0.47)	0.33 (0.47)	0.34 (0.47)	0.26 (0.44)	0.33 (0.47)
Protestant %	0.44 (0.50)	0.43 (0.50)	0.45 (0.50)	0.53 (0.50)	0.45 (0.50)
No Religion %	0.11 (0.31)	0.13 (0.34)	0.08 (0.27)	0.09 (0.28)	0.10 (0.30)
Other Religion %	0.12 (0.32)	0.10 (0.30)	0.12 (0.33)	0.13 (0.33)	0.12 (0.32)
N	2437	694	2727	540	6398

*Means or percentages (std)

Calculation Formula: Cumulative Hours / (Nonmissing* Years x 35 x 52)

***Few respondents had 1 or 2 missing years of data, see text for details

****Higher score means higher religious attendance, ranges from 1 to 6

Table 2: Odds ratios and standard errors of odds ratios from logistic regression models of remaining childless at or after age 44 on selected covariates, by sex

	Women	Men
Demographic Characteristics		
Race (Ref. Black)		
Non-Hispanic White	1.864*** (0.27)	3.347*** (0.51)
Hispanic	1.630* (0.34)	2.285*** (0.48)
Completed Education (Ref. Higher Education)		
High School Drop-Out	0.558 (0.18)	0.921 (0.25)
High School Graduate	0.539*** (0.10)	1.136 (0.23)
Some College	0.610** (0.10)	1.380 (0.29)
College Graduate	0.784 (0.15)	1.786** (0.39)
Employment History		
Hours Worked Equivalent of Full Time	6.162*** (1.59)	1.248 (0.36)
Marital History		
Months in 1st Marriage	0.989*** (0.00)	0.986*** (0.00)
Months in 2nd Marriage	0.991*** (0.00)	0.991*** (0.00)
Total Number of Spouses and Partners	0.746*** (0.05)	0.441*** (0.03)
Log of Average Family Income		
Between ages 18 and 30	1.351** (0.15)	0.978 (0.10)
After age 30	0.947 (0.08)	0.976 (0.08)
Family Background		
Father's Education (in years)	1.038 (0.02)	0.947** (0.02)
Mother's Education (in years)	0.991 (0.02)	1.072** (0.03)
Number of Siblings	0.942* (0.02)	0.915*** (0.02)
Religious Attendance - Youth	0.997 (0.03)	0.940 (0.03)
Religious Affiliation (Ref. Catholic)		
Protestant	1.425* (0.21)	1.007 (0.15)
No Religion	1.178 (0.26)	1.247 (0.24)
Other Religion	1.408 (0.27)	1.048 (0.20)
Pseudo R-squared	0.23	0.30
p	0.000	0.000
N	3267	3131

Exponentiated coefficients; Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 1: Estimated Population Prevalence and Conditional Role Probabilities for Latent Trajectories for Women, NLSY 1979-2010

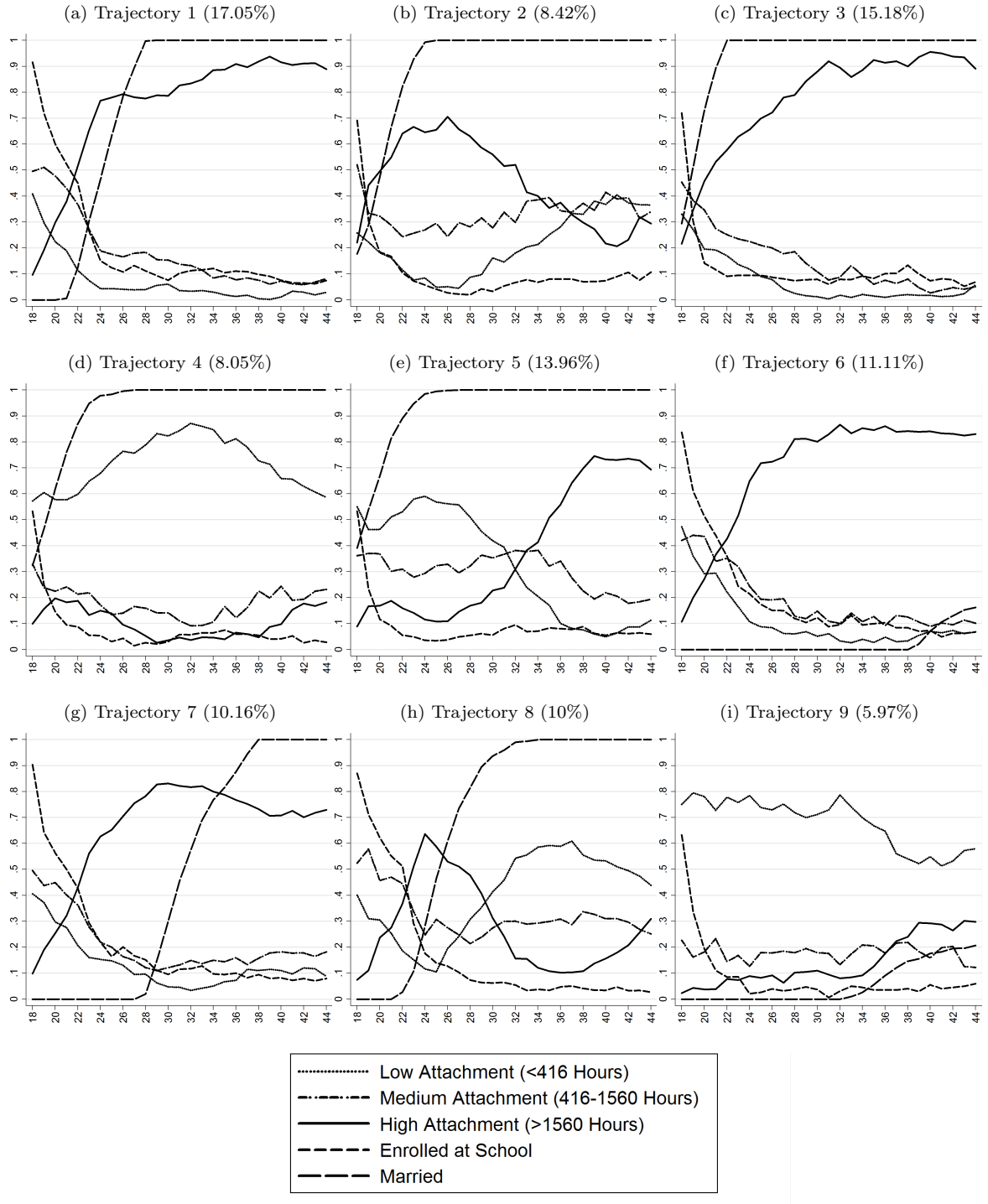

Table 3: Descriptive Statistics by school attendance, labor force attachment and transition into the first marriage trajectories, for Women, National Longitudinal Study of Youth 1979-2010

	1	2	3	4	5	6	7	8	9
Percent Childless	0.169	0.0545	0.123	0.0380	0.0132	0.567	0.277	0.0727	0.164
Race									
Non-Hispanic White %	0.551	0.702	0.607	0.578	0.553	0.383	0.542	0.721	0.144
Black %	0.291	0.145	0.192	0.144	0.202	0.466	0.313	0.152	0.662
Hispanic %	0.158	0.153	0.202	0.278	0.246	0.152	0.145	0.127	0.195
Completed Education (44+)									
High School Drop-Out % (Less than 12 years)	0.0162	0.0473	0.0423	0.243	0.112	0.0138	0.0211	0.0485	0.241
High School Graduate % (12 years)	0.244	0.491	0.506	0.479	0.561	0.309	0.250	0.258	0.549
Some College % (13-16 years)	0.305	0.345	0.327	0.202	0.254	0.339	0.268	0.239	0.185
College Graduate % (16 years)	0.242	0.0836	0.0544	0.0418	0.0417	0.152	0.217	0.264	0.0103
Higher Education % (+16 years)	0.192	0.0327	0.0706	0.0342	0.0307	0.187	0.244	0.191	0.0154
Employment History									
Hours Worked Equivalent of Full Time**	0.958	0.767	0.965	0.393	0.687	0.921	0.895	0.576	0.373
Marital History									
Never Married %	0	0	0	0	0	0.837	0	0	0.795
Age at 1st Marriage	24.40	20.23	19.10	19.43	19.23	41.24	31.76	25.77	38.69
Months in 1st Marriage	173.3	171.3	170.7	208.2	192.7	6.036	121.0	183.8	15.95
Months in 2nd Marriage	18.04	54.58	52.44	33.34	37.82	0	4.596	12.78	0
Number of Spouses and Coresidential Partners	1.359	1.738	1.752	1.502	1.697	0.628	1.340	1.309	0.759
Log of Average Family Income									
Between ages 18 and 30	10.25	10.12	10.06	9.692	9.714	9.901	9.909	10.21	9.073
After age 30	10.94	10.69	10.73	10.14	10.35	10.30	10.85	10.91	9.126
Family Background									
Father's Education	11.50	11.12	10.38	9.498	9.678	11.34	11.69	12.70	8.964
Mother's Education	11.47	11.02	10.66	9.806	9.789	11.50	11.58	12.23	9.513
Number of Siblings	3.508	3.440	3.651	4.319	4.351	3.408	3.527	3.367	4.974
Religious Attendance****	3.411	3.142	3.177	3.209	2.980	3.154	3.172	3.261	2.790
Religious Affiliation - Youth									
Catholic %	0.370	0.327	0.325	0.369	0.340	0.218	0.340	0.385	0.231
Protestant %	0.463	0.444	0.472	0.399	0.423	0.570	0.500	0.388	0.585
No Religion %	0.0682	0.0800	0.0786	0.0951	0.110	0.0937	0.0663	0.0697	0.0821
Other Religion %	0.0987	0.149	0.125	0.137	0.127	0.118	0.0934	0.158	0.103
N	557	275	496	263	456	363	332	330	195
Prevalence%	17.05	8.42	15.18	8.05	13.96	11.11	10.16	10	5.97

Table 4: Results from Logistic Regression Models of remaining childless at or after age 44 on trajectory covariates for Women

	Base	2	3
Trajectories (Ref. #5)			
#1		8.536*** (4.82)	8.470*** (4.80)
#2		3.378* (2.45)	3.257* (2.37)
#3		7.302*** (4.44)	6.997*** (4.33)
#4		3.410* (2.29)	3.587* (2.38)
#6		12.72*** (5.32)	13.22*** (5.37)
#7		10.80*** (5.29)	9.884*** (5.06)
#8		3.814** (2.81)	3.795** (2.80)
#9		4.406** (2.90)	5.332** (3.23)
Demographic Characteristics			
Black (Reference)			
Non-Hispanic White %	1.864*** (4.22)	2.044*** (4.75)	1.993*** (4.56)
Hispanic %	1.630* (2.34)	1.730* (2.56)	1.635* (2.28)
Higher Education (Reference)			
High School Drop-Out %	0.558 (-1.77)	0.705 (-1.04)	0.837 (-0.53)
High School Graduate %	0.539*** (-3.43)	0.609** (-2.67)	0.665* (-2.18)
Some College %	0.610** (-2.88)	0.666* (-2.32)	0.705* (-1.98)
College Graduate %	0.784 (-1.31)	0.776 (-1.36)	0.807 (-1.14)
Employment History			
Hours Worked Equivalent of Full Time	6.162*** (7.03)	2.072* (2.11)	1.848 (1.75)
Marital History			
Months in 1st Marriage	0.989*** (-16.45)	0.991*** (-8.93)	0.991*** (-9.08)
Months in 2nd Marriage	0.991*** (-6.90)	0.994*** (-3.97)	0.994*** (-4.29)
Total Number of Spouses and Partners	0.746*** (-4.59)	0.813** (-2.84)	0.819** (-2.72)
Family Background			
Father's Education (in years)	1.038 (1.93)	1.040* (2.00)	1.040* (1.99)
Mother's Education (in years)	0.991 (-0.36)	0.991 (-0.39)	0.986 (-0.55)
Number of Siblings	0.942* (-2.28)	0.948* (-2.03)	0.950 (-1.93)
Religious Attendance - Youth	0.997 (-0.08)	1.000 (0.00)	0.996 (-0.12)
Catholic (Reference)			
Protestant %	1.425* (2.43)	1.465* (2.57)	1.474** (2.59)
No Religion %	1.178 (0.74)	1.287 (1.11)	1.253 (0.98)
Other Religion %	1.408 (1.77)	1.482* (2.00)	1.518* (2.11)
Log of Average Family Income			
Between ages 18 and 30	1.351** (2.77)	1.308* (2.39)	
After age 30	0.947 (-0.61)	0.862 (-1.57)	
Income Qintiles (Ref. High-High)			
Low-Low			0.634* (-1.96)
Low-Medium			0.794 (-0.93)
Low-High			1.612 (1.44)
Medium-Low			0.888 (-0.48)
Medium-Medium			1.151 (0.74)
Medium-High			1.112 (0.50)
High-Low			1.439 (1.12)
High-Medium			1.763** (2.79)
R-squared	0.227	0.248	0.254
BIC	2426.786	2430.537	2460.098
p	0.0000	0.0000	0.0000
N	3267	3267	3267

Exponentiated coefficients; t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 2: Estimated Population Prevalence and Conditional Role Probabilities for Latent Trajectories for Men, NLSY 1979-2010

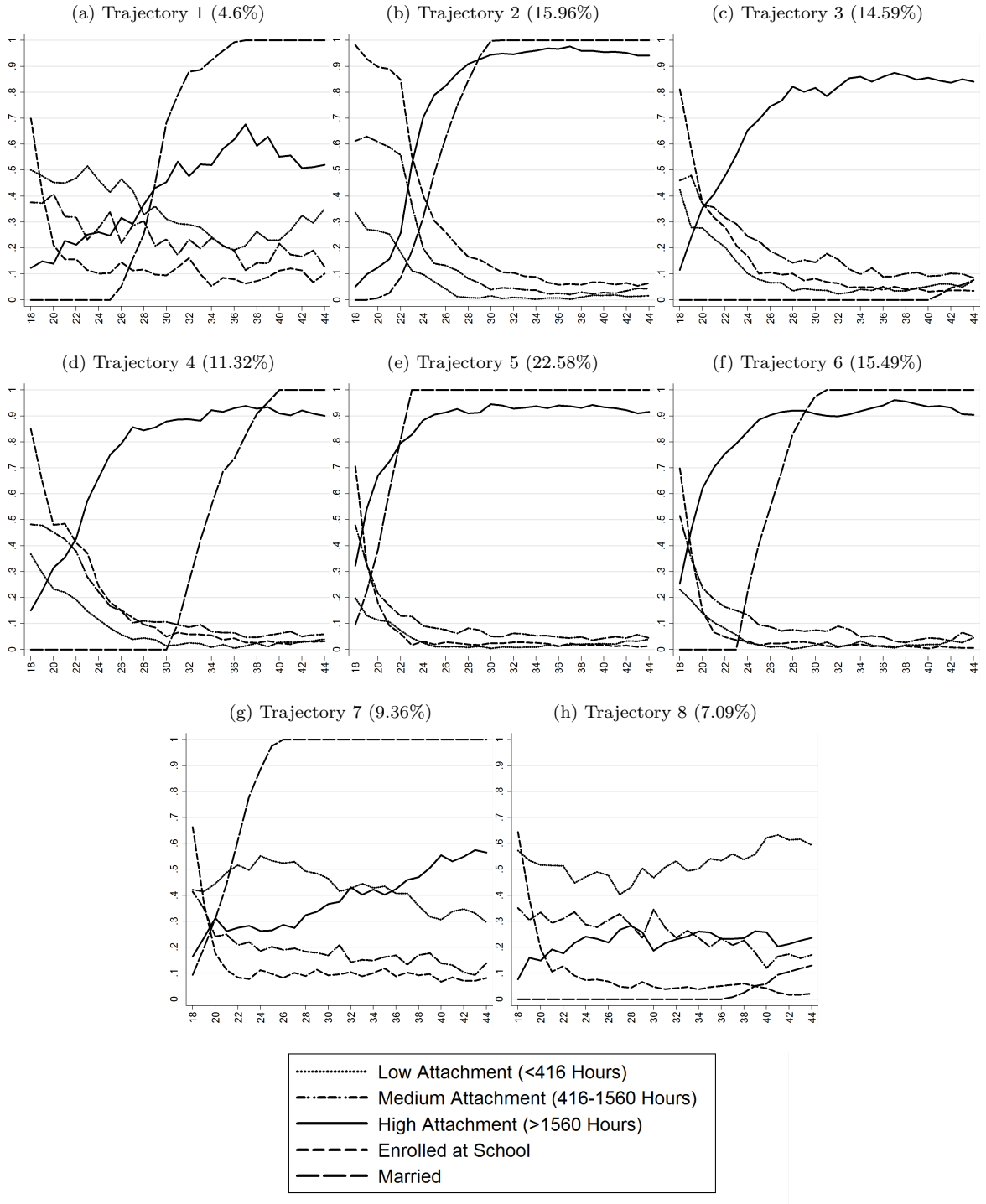

Table 5: Descriptive Statistics by school attendance, labor force attachment and transition into the first marriage trajectories, for Men, National Longitudinal Study of Youth 1979-2010

	1	2	3	4	5	6	7	8
Percent Childless	0.188	0.103	0.630	0.273	0.0608	0.142	0.0819	0.441
Race								
Non-Hispanic White %	0.389	0.692	0.409	0.603	0.644	0.619	0.454	0.230
Black %	0.417	0.179	0.398	0.259	0.137	0.190	0.311	0.572
Hispanic %	0.194	0.128	0.193	0.138	0.219	0.192	0.235	0.198
Completed Education (44+)								
High School Drop-Out % (Less than 12 years)	0.139	0	0.105	0.0535	0.112	0.118	0.157	0.230
High School Graduate % (12 years)	0.410	0.00855	0.457	0.318	0.629	0.645	0.403	0.559
Some College % (13-16 years)	0.257	0.192	0.201	0.248	0.212	0.221	0.317	0.162
College Graduate % (16 years)	0.104	0.417	0.140	0.203	0.0339	0.0165	0.0648	0.0225
Higher Education % (+16 years)	0.0903	0.382	0.0963	0.177	0.0127	0	0.0580	0.0270
Employment History								
Hours Worked Equivalent of Full Time**	0.704	0.985	0.947	0.973	0.994	0.991	0.683	0.535
Marital History								
Never Married %	0	0	0.928	0	0	0	0	0.869
Age at 1st Marriage	29.24	25.32	43.17	33.91	20.50	25.96	21.32	41.05
Months in 1st Marriage	132.6	185.6	1.709	105.6	193.7	166.0	155.2	5.631
Months in 2nd Marriage	10.13	16.29	0	2.242	39.68	18.27	41.72	0.0901
Number of Spouses and Coresidential Partners	1.556	1.267	0.713	1.349	1.687	1.452	1.816	0.973
Log of Average Family Income								
Between ages 18 and 30	9.723	10.40	9.945	10.09	10.07	10.19	9.674	9.368
After age 30	10.23	11.27	10.32	10.87	10.73	10.79	10.15	9.056
Family Background								
Father's Education	10.35	13.11	11.11	11.81	10.43	10.47	10.11	9.477
Mother's Education	10.74	12.69	11.02	11.34	10.60	10.59	10.40	10.10
Number of Siblings	4	2.874	3.630	3.276	3.710	3.833	4.341	4.842
Religious Attendance****	2.674	3.299	2.602	2.746	2.741	2.666	2.812	2.541
Religious Affiliation - Youth								
Catholic %	0.264	0.321	0.319	0.338	0.351	0.375	0.348	0.270
Protestant %	0.458	0.436	0.475	0.454	0.419	0.421	0.403	0.491
No Religion %	0.146	0.0876	0.116	0.0901	0.120	0.101	0.116	0.149
Other Religion %	0.132	0.156	0.0897	0.118	0.110	0.103	0.133	0.0901
N	144	468	457	355	707	485	293	222
Prevalence%	4.6	15.96	14.59	11.32	22.58	15.49	9.36	7.09

Table 6: Results from Logistic Regression Models of remaining childless at or after age 44 on trajectory covariates for Men

	Base	2	3
Trajectories (Ref. #2)			
#1		2.681*** (3.29)	1.771 (1.82)
#3		25.59*** (15.05)	1.783 (1.94)
#4		4.246*** (6.96)	1.552 (1.90)
#5		0.712 (-1.36)	1.168 (0.57)
#6		2.004** (2.94)	1.809* (2.38)
#7		0.937 (-0.21)	1.046 (0.14)
#8		10.96*** (8.07)	1.175 (0.45)
Demographic Characteristics			
Black (Reference)			
Non-Hispanic White %	3.347*** (7.85)	3.301*** (8.02)	3.361*** (7.76)
Hispanic %	2.285*** (3.95)	2.266*** (4.08)	2.241*** (3.82)
Higher Education (Reference)			
High School Drop-Out %	0.921 (-0.30)	0.672 (-1.45)	0.823 (-0.68)
High School Graduate %	1.136 (0.62)	0.920 (-0.39)	0.955 (-0.20)
Some College %	1.380 (1.54)	1.242 (1.03)	1.233 (0.94)
College Graduate %	1.786** (2.69)	1.804** (2.80)	1.864** (2.79)
Employment History			
Hours Worked Equivalent of Full Time	1.248 (0.76)	0.735 (-0.90)	0.794 (-0.63)
Marital History			
Months in 1st Marriage	0.986*** (-19.56)		0.987*** (-11.06)
Months in 2nd Marriage	0.991*** (-5.79)		0.993*** (-4.03)
Total Number of Spouses and Partners	0.441*** (-11.20)		0.452*** (-10.04)
Family Background			
Father's Education (in years)	0.947** (-2.89)	0.944** (-3.23)	0.947** (-2.84)
Mother's Education (in years)	1.072** (2.79)	1.068** (2.81)	1.067** (2.61)
Number of Siblings	0.915*** (-3.54)	0.906*** (-4.10)	0.916*** (-3.47)
Religious Attendance - Youth	0.940 (-1.73)	0.956 (-1.31)	0.942 (-1.67)
Catholic (Reference)			
Protestant %	1.007 (0.05)	1.095 (0.66)	1.025 (0.17)
No Religion %	1.247 (1.16)	1.259 (1.26)	1.309 (1.41)
Other Religion %	1.048 (0.24)	1.074 (0.38)	1.076 (0.38)
Log of Average Family Income			
Between ages 18 and 30	0.978 (-0.22)	1.135 (1.26)	
After age 30	0.976 (-0.30)	0.754*** (-3.59)	
Income Qintiles (Ref. High-High)			
Low-Low			1.078 (0.33)
Low-Medium			1.563 (1.90)
Low-High			1.884 (1.64)
Medium-Low			1.311 (1.18)
Medium-Medium			1.121 (0.59)
Medium-High			0.927 (-0.32)
High-Low			2.139* (2.40)
High-Medium			1.366 (1.57)
R-squared	0.304	0.246	0.313
BIC	2466.554	2689.582	2542.877
p	0.0000	0.0000	0.0000
N	3131	3131	3131

Exponentiated coefficients; t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$