Work, Leisure, and Family: From the Silent Generation to Millennials *

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Abstract

This paper analyzes the changes in the family structure, fertility behavior, and the division of labor within the household from the *Silent* generation (cohort born in 1940-1949) to *Millennials* (cohort born in 1980-1989). Using data from the *Panel Study of Income Dynamics* (PSID) this paper documents the main trends and life-cycle profiles for each generation. The main findings are: (1) the wage age-profile has been shifting down over generations, especially for *Millennial* men; (2) the returns to college for men have increased for all generations; (3) *Millennials* enjoy a higher level of leisure than previous generations; (4) a clear declining trend is seen for the housework hours of women over generations while *Millennial* men spend the most hours working in home production; (4) lower educated individuals have retreated from marriage, specially *Millennials*, while higher educated individuals have delayed marriage; (5) *Millennials*' completed fertility rate may not necessarily be below *GenX* - while they are delaying fertility, fertility rates at later ages might be higher than the immediate previous generations.

Keywords: Generations, education, labor supply, leisure, home production, family structure, fertility, marriage.

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1 Introduction

Over the last half-century, some of the most striking socio-economic changes in developed countries have been the radical changes in the family structure, fertility behavior, and the division of labor within the household. These changes have consequences for labor market productivity and the viability of Social Security and other programs. For example, the decline in fertility below the replacement rate has led to a major concern for pay-as-you-go social security in *The Organization for Economic Cooperation and Development* (OECD) countries, including the *United States of America* (US). Moreover, the significant increase in the percentage of women in the workforce has had a considerable effect on the type of benefits employers offer, specifically regarding a family-friendly workplace, parental leave, and other work-family balance policies.

Several papers analyze the changes in the family structure, fertility behavior, and the division of labor within the household for older generations (see Eckstein, Keane and Lifshitz (2019), Kong, Ravikumar and Vandenbroucke (2018), Ramey and Francis (2009)); however, to the best of our knowledge, no study has analyzed these changes in the latest generation - *Millennials* [1] - and how their family, fertility, and labor market behavior compares to the previous generations. The scarcity of studies analyzing the behavior of *Millennials* is mainly because of a lack of data. Using data from the *Panel Study of Income Dynamics* (PSID) from 1968 to 2015, this paper gets the first read on the behavior of *Millennials* as they complete their education, form their families, and transition into adulthood.

This paper focuses on three key aspects - work, leisure and family. For each of these, trends over time as well as life-cycle profiles over generations are presented. In addition to this, an Oaxaca-Blinder decomposition of wages into explained and unexplained components is estimated to understand the changes in the gender wage gap. Given the trends in education and the recent convergence in wage gap, the returns to the labor market are also estimated and the changes are analyzed over generation and by race and gender. Alongwith the changes in education and hours worked, there has been a major change in home production as well. Using a linear regression framework, as a first cut, the differential effects of education, race, gender, marital status and the presence of kids on housework hours is estimated. Lastly, with the declining marriage rates, the key question is as to what predicts partner choice. A multinomial logit model is then set up

[1] *Millennials* are normally defined as a person reaching young adulthood in the early 21st century. For the analysis in this paper, *Millennials* are defined as a person born in the birth cohort from 1980 to 1989.

to focus on the transitions of marriage by education.

Focusing on labor markets and education decisions, this paper finds that the wage age-profile has been shifting down over generations, with a sharp downward shift for *Millennial* men (up to age 33)[2]. However, female wages have not decreased but have stagnated, with *Millennial* women earning lower wages than *Generation X*[3] (*GenX*) in the latter part of the life-cycle. This finding indicates that most of the documented rise in wage inequality has come from men and not women[4]. For both black and white men, returns to college has increased for all generations, with the most significant increase for *Millennials*, specifically black men[5].

Despite this increasing return to college for men, black women have always been graduating at higher rates from college than black men, and this gap has only increased over the birth cohorts. On the other hand, up to *Baby Boomers 1*[6] (*Boomer-1*), white men were graduating at higher rates from college than white women; this gap reversed in *Baby Boomers 2* (*Boomers-2*) and has continued to increase over generations (see Goldin, Katz and Kuziemko (2006), Murnane (2013), Blau and Kahn (2017), and Eckstein, Keane and Lifshitz (2019) for similar results), with the *Millennials* having the biggest gap between white men and women. While the college graduation gap between white men and women is more than the college graduation gap between black men and women, this reverses if some college and college educated individuals are combined.

There has been a significant increase in college graduation rates between *Boomers-2* and *GenX* for both blacks and whites, a pattern that continues to accelerate for *Millennial* whites. This is in sharp contrast to the comparison between *Silent* [7] and *Boomers-1* generations where the college graduation was generally stable. Another striking feature of the change in education distribution over the generations has been a significant reduction in high school dropout rates; this has been most pronounced for blacks. The percentage of black high school dropouts fell from 30 percent in *Silent* generation to around 8 percent in the *Millennial* generation.

[2]See Kong, Ravikumar and Vandenbroucke (2018) for similar results in the flattening of the age-earnings-profile for previous generations.

[3]*Generation X* are defined in this paper as persons in the birth cohort from 1970 to 1979.

[4]This is similar to the result in Blau and Kahn (2017), which also documented that women are doing better than men.

[5]Using data on the pre-millennial generations Chiappori, Salanié and Weiss (2017) documented similar results.

[6]*Baby Boomers 1* are defined in this paper as persons in the birth cohort from 1950 to 1959, and *Baby Boomers 2* are persons in the birth cohort from 1960 to 1969.

[7]The *Silent* Generation are persons born in the birth cohort from 1940 to 1949.

There are few studies analyzing leisure over generations and the life-cycle in the existing literature. Two notable exceptions are Aguiar and Hurst (2007), Ramey and Francis (2009), and Aguiar, Hurst and Karabarbounis (2012). This paper finds that over generations, while the amount of leisure[8] enjoyed by women has been increasing, the amount of leisure enjoyed by men show no clear pattern. However, for both men and women, *Millennials* enjoy a higher level of leisure than previous generations. This rise in leisure for women is primarily coming from married women. Splitting the sample by education, this paper finds that college women enjoy less leisure than high school women, and the same is true for men. The finding that the amount of leisure enjoyed by men is stable over generations mask different dynamics in the components of leisure. There has been a significant reduction in hours worked by men, with *Millennials* working the least. At the same time, there has been an increase in the hours devoted to home production by men, with *Millennial* men devoting more hours to home production than men of any previous generation. The opposite is true for women - the reduction in hours devoted to home production for women over generations has more than offset the increase in hours devoted to market work. More importantly, most of this movement has happened within married couples.

The findings of this paper are in contrast to Aguiar and Hurst (2007), who find that leisure is increasing for everyone. Several factors may account for these conflicting results. First, different data sources are used in this paper. Second, this paper compares leisure over generations and the life-cycle while they do not. Third, the measures of leisure used here may not coincide with the measure of leisure they used, as they are using self-reported data from time diaries, whereas the measure in this paper is the residual of hours worked in the market and household production. In that sense, the measure of leisure used in this paper is more comparable to the measure used in Ramey and Francis (2009), and results here confirm the life-cycle analysis reported in that paper.

The media has often conjectured that marriage, cohabiting, and fertility behavior of *Millennials* are radically different from previous generations. A detailed analysis of these behaviors is provided, which has been lacking so far. Marriage, itself, (and thus, fertility) has seen many drastic changes over generations. Lower educated individuals have retreated from marriage[9], and this is the most pronounced amongst *Millennials*.

[8] Leisure is defined as the residual of hours worked in market and home production.

[9] See Lundberg and Pollak (2007), Greenwood and Guner (2008), Lundberg and Pollak (2013), Santos and Weiss (2016), Chiappori, Salanié and Weiss (2017), Greenwood (2019), among others for similar findings.

However, while *Millennial* college graduates are delaying marriage significantly, they do catch up with previous generations in the latter part of their life-cycle. Thus, it is not clear whether the *Millennials* would be marrying at an overall rate lower than previous generations as the composition of education has also changed, with a much higher number of college-educated *Millennials*. No clear trends in assortative mating are found over generations. Although this is in contrast to Greenwood and Guner (2008) and Santos and Weiss (2016), it is in line with the findings of Gihleb and Lang (2016). However, *Millennials* are cohabiting at a much higher rate than previous generations. For *GenX* and *Millennials*, cohabitation rates are much higher early on in life relative to previous generations; however, it drops off significantly after that, indicating cohabitation itself is transitory. This was not true in the *Silent* and *Boomer* generations.

Finally, concerning fertility trends, the significant decline in completed fertility is confirmed in this paper, with *Boomers*-2's and *GenX*'s fertility rates falling below replacement rate. Similar trends exist across race [10]. There has been a steady decline at each age parity of the proportion of births to married women over generations, although this has accelerated among *Millennials*. For example, the proportion of births to married women for the age group of 31-35 years for *Silent* generation is 88 percent, which fell to 83 percent for *GenX* and even further to 74 percent for the *Millennials*. The age-specific fertility rate has declined for every generation up to *GenX*. For the age group of 18-30 years, *Millennials* age-specific fertility rates are below every previous generation; however, the age group of 31-35 years, age-specific fertility rate are higher than *GenX*. This finding suggests that *Millennials*' completed fertility rate may not necessarily be below *GenX* - while they are delaying fertility, fertility rates at later ages might be higher than the immediate previous generations.

The remainder of the paper proceeds as follows. In Section 2, the construction of our primary data set from the PSID is described. Section 3 presents trends related to education, hours worked, and wages over time, as well as by generations. Section 4 details the changes in hours spent in home production and leisure over time and by generation. Section 5 delves into time and generation trends for fertility and marriage. Finally, Section 6 concludes.

[10] See Lundberg and Pollak (2007) and Greenwood (2019) for similar findings.

2 Data

The main data set is constructed using various files from the *Panel Study of Income Dynamics* (PSID). The PSID is a nationally representative household panel survey that includes economic, social and health information whose interview periodicity was annually from 1968 until 1997 and biannually afterward. The Family-Individual File, the Marriage History File, the Childbirth and Adoption History File, and the T-2 Income and Transfers File are used. The latter helps to complete the information regarding labor income and annual hours worked in the missing years due to the change in their interview frequency. The main sample used for the study has individuals from 1968 to 2015 who were either the *Head* or *Wife* of a household in the year of the interview and are between the ages of 18 and 65 years. Resulting in 38,945 individuals and 505,409 individual-year observations.

In particular, annual labor market hours worked, labor income, farming income, and business income are taken directly from the Family-Individual File and T-2 Income and Transfers File. Employment rate is defined as the fraction of individuals with annual labor market hours greater than zero. Hourly wages are defined as the sum of labor income, farming income, and business income divided by the annual labor market hours worked. All nominal values are deflated to 2015 US dollars using the Consumer Price Index (CPI) deflator.

The Marriage History File contains information regarding the individual marital status from 1901 to 2015. The variable legally married is taken directly from this file. The PSID separately documented from 1983 onwards if the head of the household has a "wife" (cohabiting but not married) for more than a year. Prior to 1983, both legally married wife and cohabiting "wife" were grouped together without distinction. This presents an issue in constructing a consistent measure for cohabitation. Hence, the marriage information from the Marriage History file is used and compared with the Marital Pairs Indicator (MIP) - whether or not there exists a marital pair in the household from the Family-Individual File. If the head is not legally married and there exists a marital pair in the household, it is assumed that s/he is cohabiting. This measure is fairly comparable with the measure constructed from post-1983 data. The numbers are marginally underestimated numbers using the MIP measure; however, this provides a consistent estimate for cohabitation with no jumps for the entire sample.

The sample weights in the Family-Individual File are used to correct for over-sampling of low-income families. Prior to 1993, the same sample weights were used for cross-

sectional and longitudinal data, however, after 1993 the sample weights are taken for longitudinal data due to the nature of this sample analysis. The values presented in the figures and tables are only weighted if they are time trends and are not weighted for the life-cycle profiles for the different generations.

3 Work

3.1 Education

Throughout the paper, two measures of the level of education are used. The first is the years of completed education and the second is a discrete measure based on the highest level of education achieved. To create the second measure, years of completed education are divided into four groups: less than high school (LHS), high school (HS), some college (SC) and college and above (College). Figure 1 presents years of completed education over time and by generation for the age group of 30 to 35 years.

Panels (a) to (e) of Figure 1 present the years of completed education over time by gender, marital status, and race. Panel (a) shows the well-documented reversal in the gender education gap where prior to the early 1990s, men were more educated than women; however, post 1990s, women have not only caught up to but have also overtaken men. This reversal occurs because while the years of completed education have significantly increased over time for both men and women, the rate of increase for women has been significantly faster.

Panel (b) and (c) of Figure 1 show that marriages are becoming more concentrated among the over-educated. This is more pronounced among women than among men. Prior to the 1990s, single men were more educated than married men; by the late 1990s, this trend has reversed. However, by 2015, single and married men had similar completed years of education. A similar pattern is observed for women prior to the early 1990s (Panel (c)); however, married women continued to be more educated than single women by significant margins in 2015. It is important to note that the composition of these groups has also changed as marriage rates have fallen over the past few decades.

Panel (d) and (e) of Figure 1 shows that the significant convergence of the racial education has been stalled and since the early 2000s has reversed. Looking at the racial education gap between black and white men in Panel (d) a trend towards convergence

is seen; however, post 2004, the trend reversed and started diverging. A similar trend is seen for women by race as well; however, the divergence occurs at a much later point in time - post 2007.

Table 1 presents the years of completed education by gender, marital status, and race over generations[11]. This pins down where the reversal of the gender education gap occurred. This reversal occurs in the *Boomers-2* generation, where men only have 13.1 years of education compared to 13.4 years by the women. For the *Millennials* generation, the levels have increased for men and women but the gap persists (13.85 years for men versus 14.37 for women). Similar to the trend graphs, the reversal in the gender gap by marital status is seen as well - for both men and women in the *Boomers-2* generation. However, the convergence for men is not seen. Interestingly, the divergence and convergence by race occurred at the same time for both men and women - in the *Boomers-2* generation.

Focusing on years of education only tells half the story. The transition between education groups also needs to be understood - there is certainly no doubt that everyone is getting more educated, but where are the gains coming from - is it from a rise in college and above category or some other category? Figure 1 (f-j) presents the discrete measure of completed education by gender, marital status, and race. For the *Silent* and *Boomers-1* generations, white men had a much higher rate of college completion compared to that of white women; however, the reversal started with the *Boomers-2* generation and has increased by a significant margin by the *Millennials*. Namely, 42 percent of *Millennial* men and 54 percent of *Millennial* women are college educated, compared to 39 and 29 percent for the *Silent* generation, respectively. The similarity between the *GenX* and *Millennials* in terms of proportion educated in each age group is striking, with the *Millennials* being more educated due to a higher proportion who are college educated.

While there was not much progress at the top of the education distribution for blacks, there was some progress at the bottom of the distribution with a fall in the proportion who were high school dropouts from the *Silent* to the *Boomers-2* generation (Figure 1 (k-o)). For example, 29 and 26 percent of black men and women, respectively, of the *Silent* generation were high school dropouts - this fell to 8.5 and 6 percent for the *Millennials*. There was a significant rise in college graduation for blacks between the *Silent* generation to the *GenX*, however, for *Millennials*, there is a fall in the college graduation rate. For high school graduates and some college for the black men, a rise is seen whereas a proportionate rise in some college is seen only for black women.

[11]These are un-weighted numbers.

Most papers in the literature tend to focus on stock numbers i.e. years of education for the age-group of 25-64, as do Blau and Kahn (2017). While these numbers are not directly comparable, the same trends are seen for the reversal in the gender gap. As documented by Goldin, Katz and Kuziemko (2006), there is a sharp rise in the college graduation rates for women as well as the slower rise for men. Goldin, Katz and Kuziemko (2006) suggest that one of the reasons for this rise of the women is due to changing social norms and expectations about work, marriage, and motherhood. Similar to Murnane (2013), blacks are less likely to graduate from college, while women are more likely to. Eckstein, Keane and Lifshitz (2019) also see the reversal in the trend of education of married women versus single women. While in 1962, only 7% had a college degree (or higher), compared to 10% for unmarried women. By 2015 this pattern had reversed, and 36% of married women had a college degree, compared to only 28% of unmarried women. This is consistent with the trend shown here.

3.2 Employment and Annual Hours Worked

In this section, the employment rate is defined as the fraction of the total working-age population that is employed. The working-age population refers to individuals between the ages of 18 and 65 and an individual is classified as employed if s/he works a positive number of hours during the calendar year.

Figure 2 presents the patterns of employment rate for the sample from 1968 to 2015 for different demographic groups and the life-cycle profiles across generations. Figure 2 (a) shows that although the employment rate for women has increased over the period 1968 to 2015, the rate of increase has slowed considerably over the period 2000 to 2015. At the same time, the employment rate for men has been decreasing over the period 1968 to 1993 with a slight recovery thereafter. The employment rate decreased during the Great Recession for both genders, however, the fall was greater for men than for women. For example, the employment rate in 2008 was 92 percent and 80 percent for men and women respectively; in 2010, it dropped to 89 and 79 percent and by 2014 it was 87 and 80 percent, respectively.

After controlling for marital status, the employment gap between married and single men [12] widened after 1990 while the employment gap between married and single women shrunk but persisted throughout the whole period (Figure 2 (b) and (c)). On the

[12]Married men are employed at higher rate than single men while married women are employed at lower rate than single women.

other hand, with employment rates for black men falling more sharply than white men, the racial gap has continued to widen. For women, in the early 1980s, black women had higher employment rates than white women. The gap was the least in the early 2000s, but by 2008, the recession affected black women more spreading the gap again (Figure 2 (d) and (e)).

Analyzing the life-cycle profile over generations, the increase in employment rates is seen over generations in Figure 2 (g), with the *GenX* and *Millennials* being fairly similar. Separating the trend by gender shows that the rise in employment rate has primarily come from women (Figure 2 (h) and (i)). For men, there is a steady decline in the employment rate with *Millennial* men working the least. In contrast, for women, *Millennials* have higher employment rates than all generations, except *GenX*. For women in the age group of 30 to 32 years, employment rates rose from 67.8 percent in the *Silent* generation to 84.2 percent for the *Millennials*; for men, it fell from 98.3 percent to 94.4 percent. This pattern for men and women is robust as it persists even after conditioning on marital status and race (Figure 2 (j)-(o)). The shape of the age profile flattens down for women between the *Silent* generation to the *Millennials*. This is possibly due to changes in patterns of fertility, which are analyzed in Section 5.1[13].

Other papers tend to use different definitions of employment rate and working-age population due to two reasons: (a) the legal working age has changed over time and (b) different data sources. For example, Ramey and Francis (2009) use Census and Bureau of Labor Statistics (BLS) data to calculate the employment rate using same definition as used in this paper. However, they provide three measures for the working-age population: (1) 10 and older, (2) 14 and older, and (3) 14-64 years old. They report that for the period between 1900 to 2005, the employment rate rose from 51 percent to 60 percent for measure (1), from 55 percent to 64 percent for measure (2) and from 56 percent to 73 percent for measure (3). For comparability, using the PSID dataset, the employment rate for ages 14 and older and 14-64 years old is constructed (Figure 2 (f)) [14]. The pattern found by Ramey and Francis (2009) is then confirmed. In addition, the time series is extended until 2014 and this increasing trend continues until 2008. Due to the impact of the recession, the rate fell from 75 percent in 2008 to 70 percent in 2014 for working age 14 and older and from 86 percent to 83 percent in the same time period for those in the 14-64

[13] Greenwood (2019) argues that the "*decline in fertility, improvements in household technologies, advances in obstetric and pediatric medicine have reduced the time off of work that a woman needs to bear and raise children*".

[14] For the PSID the data regarding the employment status is not available for those in the age group of 10-13 years old.

years old group. Similarly, Blau and Kahn (2017) using data from the Current Population Survey and defining individuals who are 16 and older as working age population, find that the women employment rate increased from 1947 to 2013 and that the gender gap has narrowed down due to a steady decline in men employment rates over this period. In Figure 2 (a) the same trend is seen for men and women, however, the findings of this paper have higher employment rates than those presented by the authors [15]. Greenwood (2019) also finds that over time women labor supply has risen and suggests that an explanation for this is in line with the decline of time spent in housework by women, a topic discussed in detail in Section 4.1.

Figure 3 presents the trends and life-cycle profiles for annual hours worked for different demographic groups, which is directly taken from survey data. The results show that that annual hours worked mirrors the trends of employment rate over time as well as for patterns across generations. The one exception is that of the racial gap for women which is non-existent for this case. The long-run trends presented in Figure 3 are supported by the findings of Aguiar and Hurst (2007). They find that hours worked for men in the labor market has decreased significantly and hours worked for women in the labor market has increased, over the period 1965 to 2003. However, they also find that average time that men and women spent on total market work dropped from 35.9 to 31.7 hours per week over the period 1965 to 2003, despite women increasing their time in market work. [16].

3.3 Wages

In this paper, wages are calculated in hourly terms, dividing the total labor income of an individual by the total annual hours worked. These are then deflated to 2015 US dollars values[17].

Any discussion about wages has to begin with the wage gap. Figure 4 (a) shows that there has been a convergence in men and women median hourly wages, with the women to men median wage ratio increasing from 60 percent to above 80 percent - inching closer

[15]The data sources are different - they use CPS data whereas this paper uses PSID data.

[16]Aguiar and Hurst (2007) define total market work as total time spent working in the market sector on main jobs, second jobs, and overtime, including any time spent working at home plus commuting and break times.

[17]Prior to 1993, farm income and labor portion of business income were included in the individual income, by construction. Post 1993, these are reported as separate amounts. However, individual income is created by adding up the business and farm income so that it is consistent across years.

to parity. Although there has been a stagnation in the wages for college-educated men and women, there has been a clear decline in the wages for all other education groups for men. This has resulted in a *polarization* of wages between across education groups. For women, there appears to be a stagnation for all education groups. This would imply that the college premium has risen for men, as compared to women (Figure 4 (b, c). In terms of a race gap (Figure 4 (d)), black to white wage ratio has declined for the men, whereas women are at a similar level to 1968 in 2015.

Disaggregating the trends by worker type, there has been a convergence in the women to men hourly wage ratio for all and full-time workers. This implies that the wage ratios of part-time wages are catching up with that of the full-time workers. Doing the same exercise for annual earnings, a similar trend of convergence is seen; however, the initial gap in earnings in 1968 is close to 62 percent for all workers and 45 percent for full-time workers - this falls to 33 and 25 percent, respectively, by 2015. The convergence in annual earnings is a function of the hours worked as well, and as stated earlier, there has been a sharp rise in the hours worked by women and a marginal decline for men (Figure 4 (e, f)).

Looking at the real wages by generation, there has been a sharp fall for men between the *Silent* and *Boomers-2* generation. Although there was a rise over the life-cycle for *GenX*, these gains were not seen by the *Millennials* - who have the lowest real wages over the life-cycle so far. Specifically, real wages for the age group of 30 to 32 years was 23.7 dollars for the *Silent* men. This has fallen to 17.9 dollars for the *Millennial* men in the same age group. A flattening of the wage profiles over the generations is also seen, confirming the trend documented by Kong, Ravikumar and Vandenbroucke (2018). It does appear as though men are being left behind, with the stagnation of men education as well as the fall in hours worked. Interestingly, this trend is not seen for women. It is with the *GenX* that a rise in wages is seen for women, which is carried forward by the *Millennials*, although it has not rise as high as the *GenX*, post age 27. However, in levels, the men are still higher than the women, as seen by the graphs on the wage gap (Figure 4 (g, h)).

Focusing on the median women to men wage gap, it is clear that the *Millennials* have made the largest strides towards gender equality in pay. Moreover, there has been a change in the profile over the life-cycle as well - earlier, it used to have an inverted U-shape, whereas it is much flatter in the recent generations. The trend is similar across married and unmarried individuals. Splitting this up by education group, the gender

gap is much smaller for college-educated individuals, as compared to high school or some college individuals (Figure 4 (i-m)).

Framework for Analyzing Wages Following the human capital accumulation literature (Altuğ and Miller (1998), Gayle and Miller (2002), Gayle and Golan (2012), and Chiappori, Salanié and Weiss (2017)), the following specification is used to analyze wages:

$$log(w_{it}) = \sum_{r=1}^{4} \gamma_{1i}^{r} d_{i,t-r} + \sum_{r=1}^{4} \gamma_{2i}^{r} h_{i,t-r}^{m} + \gamma_{3i} a_{it} + \gamma_{4i} a_{it}^{2} + \eta_i + \epsilon_{it}, \tag{1}$$

where w_{it} denotes the hourly wages of individual i and calendar year t. The return to experience is captured by two components; $d_{i,t-r}$ the indicator for labor force employment of individual i in calendar year $t-r$ and $h_{i,t-r}^{m}$ the hours worked by individual i in calendar year $t-r$. The standard age-earnings profile is captured by age, denoted by a_{it}, and age squared. Generically an individual specific effect is included and denoted by η_i[18].

Decomposition of Wage Gap As done in Blau and Kahn (2017), a Oaxaca-Blinder decomposition of the wages into an unexplained and explained component using the estimates from equation (1) is done. This estimation is done separately by gender, race, and generation. The individual specific component is specified as a linear function of completed education. Completed education is discretised into four categories, namely, high school dropout, high school graduate, some college, and college graduate.

Figure 4 (n) and (o) show that there has been a significant decline in men to women *mean* wage gap[19] for the age group of 18 to 65 over all the five generations. However, since all age-groups are not available for all generations, the ages are restricted to 20-34 years for direct comparison and the same sharp decline is found. For the age-group of 18 to 65 years, a sharp fall in the unexplained component over the generations from 30 percent for *Silent* generation to 8 percent for the *Millennials* is seen. However, the proportion in the total wage gap accounted for by the unexplained component has also fallen from 75 percent in the *Silent* generation to 58 percent for the *Millennials*. As education and hours worked have risen over generations, this makes intuitive sense because experience and education are the variables that are most predictive of the wage level. However, there

[18]This include all variables that vary by individuals but are time invariant, e.g. completed education, race, and gender.

[19]As this paper uses log hourly wages, the difference between the men and women log wages is taken.

appears to be a marginal rise in the explained component for *GenX*, which falls back for the *Millennials*. A similar trend is observed for the age 20-34 in terms of the unexplained component; the explained component appears to rise for the *Boomers-1* generation as compared to *Silent* and then starts falling. For *GenX*, 44 percent of the wage gap was accounted by the explained component, which falls to 41 percent for the *Millennials*.

Returns to Education Has the return to education changed over generations? To answer this question a decomposition exercise similar to the one in Chiappori, Salanié and Weiss (2017) was performed. This was done by first estimating equation (1) by gender, education, race, and generation. In this regression, the individual specific component is unrestricted as a fixed effect. For comparability to the results presented in Chiappori, Salanié and Weiss (2017) it is assumed that $h^m_{i,t-r}$ represents the proportion of total time endowment[20] hours worked by individual t in calendar year $t-r$, instead of the actual amount of hours worked. The returns to education are calculated by subtracting the predicted log wage for an individual with college and above level of completed education from that of a high school graduate. The numbers presented in Figure 4 (p) are for a 35 year old individual who has worked full-time in the last four periods $((40 \times 52)/(365.25 \times 24))$.

Looking at labor market college premia, there has been an increase for men (both black and white) over generations as opposed to women. On the other hand, the trend for women has not been that straightforward. For black women, there was a fall between *Silent* to *Boomers-2* generation, and then a subsequent rise – representing a U shape. For white women, this fall has been in the younger generations. It is important to note that the differences in these numbers are not statistically significant from zero. A similar fall was reported in Chiappori, Salanié and Weiss (2017) , however, the recent rise in the labor market premia for black women was not observed before.

4 Leisure

4.1 Housework Hours

There has been much talk about technological progress helping in the reduction of time spent in home production (Greenwood and Seshadri, 2005). Figure 5 presents the trends

[20] Total time endowment is set at 365.25×24 hours.

for annual housework hours over the years and by generation. Housework hours are calculated on an annual basis by multiplying weekly housework hours (as reported by PSID) by 52. PSID does not report weekly housework hours in the years 1975 and 1982 and does not ask this question in the T-2 years. Figure 5 shows some very striking trends. It shows that over the years men have increased the time spent in home production, while women have drastically reduced theirs. On an overall level, there has been a decline in the home production hours, implying that fall in the hours of women is not balanced by the rise in that of men (Figure 5 (a)). However, no conclusions can be drawn from simply focusing on the time, as there might have been significant technological progress in home production[21] as well and therefore, equal time spent in 1968 and 2015 would produce different levels of output.

Married men do not spend as much time in home production as compared to single men and the rise has been similar by marital status; however, single women spend significantly less time (and always have) as compared to married women. Most of the decline in the housework hours appears to come from the married women, who saw a drastic fall in housework hours from 1767 hours in 1968 to 820 hours in 2015 (Figure 5 (b)). Married women have also increased their labor supply. One argument put forward in the literature that would be consistent with this observation would be a significant improvement in household technology. Since the technology costs more, women might need to increase their labor supply to be able to afford it. However, technology might also reduce the time women spent in production (Greenwood, 2019). There is not much difference by race, although black women put in fewer hours in home production than white women, whereas there is not much difference for men (Figure 5 (c, d)). It is important to note that black married women spend more hours working in the labor market as compared to white married women; however, since there are more black single women in our data set, the trend is overpowered for black women by the trend of the single ones.

Examining the data by generation paints an even clearer picture about the change in housework hours - while *Millennial* men do spend the most hours working, the rise over the generations has not been drastic. On the other hand, there is a clear fall with each generation for women (Figure 5 (e, f)) and as seen earlier, most of this fall comes from married women. Disaggregating by education, it is important to note that across all generations, housework hours are decreasing as educational attainment rises - college educated women put in the least amount of hours relative to other education groups.

[21] While Reid et al. (1934) was the first person to introduce the notion of household production, Becker (1965) was the first to formalize it.

High school educated *Millennial* women in the age group of 30 to 32 years spent 906 hours in home production, as compared to 602 hours spent by college-educated women. However, this trend is not distinct for the men (Figure 5 (i-l)). The same patterns for race are seen as in the trend graphs.

The findings of this paper for the fall of housework hours for women and rise for men is confirmed by Ramey and Francis (2009) and Aguiar and Hurst (2007). Both papers use different datasets from the PSID. Ramey and Francis (2009) compute the housework hours using data from the American Heritage Time Use Survey (AHTUS) and American Time Use Survey (ATUS) of the BLS[22] while Aguiar and Hurst (2007) link five major time use surveys[23] to get their results[24]. Thus, the trend of rising housework hours for men and falling hours for women appears to be robust to the source of data and method of measurement.

Framework for Analyzing Home Production In the previous section, the aggregate numbers of home production were examined over time and by generations; however, it is important to understand what predicts housework hours at the individual level in order to understand the driving force behind these changes. Is it education, marital status, or number of kids? There have been changes over time and generations in education, family structure, and the number of kids. These variables are known to be correlated with the level of hours spend in home production. Can they statistically explain the change in home production over generations? To answer this question a statistical decomposition exercise was conducted using the following regression for blacks and whites together:

$$h_{it}^{w} = \alpha_0 + \sum_{r=2}^{5} \alpha_1^r g_i^r + \boldsymbol{\beta} \mathbf{Z_{it}} + \sum_{r=2}^{5} \boldsymbol{\delta^r} g_i^r \mathbf{Z_{it}} + \epsilon_{it}, \tag{2}$$

where $h_{i,t}^{w}$ denote to annual housework hours for individual i in calendar year t and g_i^r is an indicator equal to one if individual i is from generation r and zero otherwise. In this

[22] Ramey and Francis (2009) defines home production as the time spent in planning, purchasing goods and services (except medical and personal care services), care of children and adults, general cleaning, care and repair of the house and grounds, preparing and clearing food, making, mending and laundering of clothing and other household textiles.

[23] The five surveys are: 1965-1966 American Use of Time; 1975-1976 Time Use in Economics and Social Accounts; 1985 Americans' Use of Time; 1992-1994 National Human Activity Pattern Survey; and the 2003 American Time Use Survey.

[24] Core non-market work is defined by Aguiar and Hurst (2007) as "any time spent on meal preparation and cleanup, doing laundry, ironing, dusting, vacuuming, indoor household cleaning, and indoor design and maintenance (including painting and decorating)."

specification the *Silent* generation is set as the baseline ($r = 1$). The regression includes controls for education, gender, race, marital status, the number of young kids (less than 6 years), number of old kids (6 to 18 years), age and age-squared. These are all represented in equation (2) by the vector $\mathbf{Z_{it}}$ whose effects are allowed to vary across generations.

What Explains Housework Hours? Figure 6 shows the predicted housework hours when education is changed. The baseline case is that of an high school dropout individual with no kids, so as to isolate the effect of only education. The most striking feature from this figure is the significant increase in housework of men over generation and the even larger decline in housework hours for women over generations. The pattern of housework hours by education for single men, regardless of race, are consistent across generation; i.e. housework hours increases with education level up to some college and then there is a slight decrease for college graduate single men relative to some college single men. However, after controlling for education there is still a significant increase in housework hours for single men over generations. This increase is monotone and statistically significant at the 5 percent level for 7 out of 8 categories for single men depicted in Figure 6 with the only exception being single high school dropout white men. The same is true for married men of all races. Therefore, changes in the level of education over generations does not explain the increase in housework hours of men.

Figure 6 also shows a similar pattern to men for women except in the opposite direction. Women's housework hours are monotonically decreasing in her level of education and this pattern holds across generations, race, and marital status. Therefore, changes in women's level of educational attainment over generations do not explain the big decline in housework hours of women or the increase of housework hours of men over generations.

Table 2 shows the regression results for young and old kids for three specifications of the regression model in equation (2). Specification (3) is the full regression as specified in equation (2). Specification (1) assumes that the interactions between generation and children as well as the interaction between gender and children in equation (2) are restricted to be zero. Specification (2) allow the interactions between generation and children to unrestricted but maintains the restrictions on the interactions between gender and children from Specification (1). Examining the results from Specification (3), it is clear that young and old kids do have a significant impact on housework hours and young kids have a higher impact than old kids. Compared to the Silent generation, each

generation spends lesser time given they have young kids. However, for old kids, *Silent* and *Boomers-1* appear to spend the same amount of time, with a fall with each successive generation.

After controlling for children, the estimated coefficients on the generation dummies are all positive and statistically significant. Additionally, more children are associated with large increase in housework hours for women. This implies that what explains a large part of the decline in housework over generations for women is the significant decline in the number of children. However, there is a possible role for home production technological progress as the estimated amount of housework hours needed for the number of children decreases in each subsequent generation relative to the *Silent* generation.

4.2 Leisure

The small empirical literature that have studied the change of leisure hours over time and generations uses several different measures of leisure. Following Aguiar and Hurst (2007) and Aguiar, Hurst and Karabarbounis (2012), the measure of leisure used in this study is calculated as the residual of annual hours worked and annual housework hours from total time available (where 8 hours per day are allocated to sleep and personal care)[25]. An alternative measure used in the literature, see e.g. Ramey and Francis (2009), define weekly leisure as the residual time after subtracting time spent in non-leisure activities (work, school, home production, commuting and personal care) from time available.

Using their measure of leisure, Ramey and Francis (2009) conclude that the age group of 25 to 54 years has the lowest amount of leisure time regardless of the gender of the individual. Figure 7 (a), (b) and (c) show, with same age-group definitions as Ramey and Francis (2009), that individuals in the age group 25 to 54 enjoy the lowest amount of leisure hours confirming the findings of Ramey and Francis (2009). This pattern holds for both genders. Figure 7 (a), (b) and (c) also show that for the age group 25 to 54 annual amount of leisure hours enjoyed increased between 1968 and 2015 for both genders. Aguiar and Hurst (2007) find similar patterns for the period 1965 to 2003. In particular, they found that leisure has increased significantly for men and women. However, using their definition of "Leisure Measure 1" which is the narrowest measure, men enjoy more

[25]This measure of leisure corresponds to "Leisure Measure 1" from Aguiar and Hurst (2007) which includes activities related to entertainment/social activities/relaxing and active recreation.

leisure than women [26]. They also show that their result was robust for any of the four leisure measures proposed, and the significant rise in leisure persisted.

Additionally, Figure 7 (d) to (o) present the life-cycle profiles for the five generations of interest by gender, marital status, race, and educational group. In general,this paper finds a distinct U-shaped curve indicating that more hours of leisure are enjoyed during the youth and retirement. *Millennial* men enjoy higher leisure levels early on in life than previous generations, however, annual leisure hours fall below those of *GenX* for ages above 25 years. In contrast, for women, there is a consistent rise with each generation until *GenX*. Leisure levels for *Millennial* women are similar to those of *GenX*. Further, by marital status, married men enjoy less leisure than married women, especially, early on in their life-cycle. For the last two generations, it is due to the fact that married men work longer hours than married women, even though the latter have increased their work hours by a significant amount, however, they are not close to the level of men yet. For the earlier generations, housework hours dominated the effect and thus, women had lower leisure. Similar patterns are found for white men and women whereas it is worth noting that black men *Millennials* profile shifted upwards with respect to the remaining generations, especially, before ages 25. Finally, for high school and college, for both genders, the trend of rising leisure holds.

5 Family

5.1 Fertility

A well-known fact in the literature is that fertility has declined over time. Figure 8 (a)-(c) presents the trends for completed fertility by marital status (if they have been ever married), race and education. Completed fertility corresponds to the number of birth children per women who have reached the end of their childbearing years. Therefore, only women between ages 45 and 50 are taken into account. On average, in 1968 women had 3.04 children and by 2015 completed fertility has decreased to 2.01 (Figure 8 (a)). Focusing on the shape of the curve, there is a hump before the decade of 1990 which then flattens out. This paper does not find a big difference between ever married women and single women (difference between "All" and "Ever Married Women"). Over time there is convergence by race, although black women tend to have a higher number of

[26] For more details, see Table 1.2. in Aguiar and Hurst (2007).

children than white women. Disaggregating by education group, a significant decline is seen for women with less than or with a high school diploma which may be due a decline in teenage pregnancy. While a decline for college educated women is seen till 2013, the trend reverses its direction post that and by 2015 completed fertility is 1.88 for this group (highest since 2006).

A second measure used in this paper to analyze fertility is the age of, both, men and women when they had their first birth child. This is calculated by restricting the sample to individuals in the age group of 35 to 40. Figure 8 (d) to (h) present the trends for age at first birth by gender, marital status, race, and educational group. The main findings are: (1) In general, there is an increase of age at first birth, for both men and women, from 1968 until the late 2000s, then it starts to decline in 2011 and 2013 for men and women, respectively. (2) The same pattern is found for men and women who have been ever married (by age 35), therefore, there is no difference between never and ever married individuals. (3) By race, black men generally have a lower age of first birth than white men, however, this gap was closing over the early part of the sample up to 2000 after which the trend was reversed with the gap widening. In the case of women, the age of first birth increases from 1968 to 2013 with a slight decline after 2013 for white women, however, the age of first birth for black women is essentially unchanged over the entire sample period from 1968 to 2015. (4) By completed education, while the age of first birth differs by education level, the disaggregated trends are similar to the overall trend.

These results confirmed the long-run trends documented in the literature. In particular, Lundberg and Pollak (2007), using the number of births per 1000 women as their measure of fertility, find that as the postwar baby boom waned, birth rates for women ages 15 to 44 fell from 118 births per 1,000 women in 1960 to 68 births per 1,000 women in 1980. They also found that women have continued to delay births confirming the findings in this paper on age at first birth. In addition, they find that completed fertility was approximately at the replacement rate of 2.1 children per woman by 2005, consistent with the results in this paper. More recently, Greenwood (2019) suggests that this long-run decline in fertility is explained by the increase in women's wages, which raised the opportunity cost of having children. The author calculates completed fertility in the year 1800 where the average white women had 7 children; yet, by 1990, this has dropped to just 2. Finally, he argues that there was a significant recovery in fertility in the mid 1960s, as seen in Figure 8 (a) as well. He explains that advances in medicine led both younger *and* older women having more children. Fertility then reverted back to its common trend

and the "baby bust" resumed.

Table 3 presents completed fertility by generation for women in the 45 to 50 age group. There are no results for *Millennials* as this generation has not reached the 45 to 50 age group by 2015 (the time when the sample ends). For *GenX*, there is some right censoring in terms of age; the numbers for *GenX* are still reported in the table. Table 3 shows a decreasing trend in completed fertility, with the fertility falling below replacement rate for the *Boomers*-2 generation[27]. This trend is seen after disaggregating by marital status, education or race. The gap in completed fertility between high school dropouts and college has narrowed from 1.68 for the *Silent* generation to 1.08 for the *Boomers*-2 generation. A similar decline is observed for the difference in completed fertility between blacks and whites from the *Silent* (0.57) to *Boomers*-2 (0.19) generation.

In order to analyze the fertility behavior for *Millennials*, Table 4 presents data on parity of births as well as the proportion of births to married women. It is evident that non-marital fertility, as measured by the proportion of births born to unmarried women, has risen for all the four age groups for the *Millennials* (18 to 35 years). This is in line with the rise in non-marital fertility reported by Lundberg and Pollak (2007) who state that 37 percent of U.S. births were out-of-wedlock in 2005. The parity of births presents the evolution of fertility over the life-cycle and is defined as the number of live births to a woman *so far*. Although *Millennials* start at a much lower parity than any of the other generations, they catch up by the age of 31 to 35 years, surpassing *GenX* but significantly lower than *Boomers*-2.

5.2 Marriage

This paper uses two different measures of marital status. The first, "Legally Married", is defined as those individuals who have a legal spouse. The second, "PSID Married", is defined as those individuals who either have a legal spouse or a cohabiting partner[28]. The marriage rate corresponds to the proportion of individuals who are legally married in the age group of 18 and 65. A similar definition can be defined for PSID marriage rates using PSID married. Figure 9 presents the marriage rates by gender, race and educational level.

There is an active literature that has documented the decline in marriage rates over

[27]For this generation, there are some ages that might not have reached the age of 50; however, conclusions can be drawn based on averages

[28]The construction of cohabitation is explained in the Section 2.

time (see Greenwood and Guner (2008), Lundberg and Pollak (2013), Santos and Weiss (2016), and Greenwood (2019)). Figure 9 (a) also confirms the decline of the overall marriage rates for the period 1968 to 2015. Figure 9 (b) and (c) present the marriage rate by race. It shows that whites marry a higher rate than blacks and this racial gap in marriage rates has widened over time. Figure 9 (b) and (c) also show larger decline in the marriage rates over time for blacks relative to their white counterparts. For example, in 1968, the gap in white and black marriage rates for men was 3.3 percentage points; by 2015, this gap had increased to 23.6 percentage points. The gap for women saw a similar rise from 6.4 to 31.2 percentage points. Further, Figure 9 (d) shows an increase in cohabitation, however, this rate tends to be small, i.e. in 1968 the rate of cohabitation was 0.9 percent; in 2015, this increased to 6.8 percent. Finally, for both definitions of marriage (legally and PSID) there is a similar pattern by educational level, implying that cohabitation does not have a significant impact on overall trend of household formation(Figure 9 (e)-(h)). While all education groups see a decline in marriage rates, college educated individuals have a slower decline than the other education groups. Moreover, there is a crossover in marriage rates occurring for both men and women in the years 1989 and 1998, respectively, meaning before 1989 and 1998 college educated individuals married at lower rate all other education groups but after 1989 and 1998 the opposite is true. Greenwood (2019) also pointed out that the decline in marriage is greater for non-college educated than for college educated while Lundberg and Pollak (2007) found that the marriage-rate trajectories of the more and less-educated began to diverge in the mid-1980s.

The decline in marriage rates is clear, yet it begs the question as to what are the driving forces behind such a decline. Greenwood (2019) discusses that there exist three possible explanations in the literature. First, as previously mentioned, there has been a rise in wages, which makes a one-person household more affordable. Second, the labor-saving technological progress in the home has led to less need for specialization (Greenwood and Guner (2008)). Finally, the fast drop in the prices of time-saving goods used at home. The authors argue that these three forces reduced the importance of scale economies in the household consumption/production, hence, single households are more common in the current time. In addition, Santos and Weiss (2016) proposes that as child-care costs that parents have to incur are fixed and difficult to avoid during tough economic times, people delay marriage when there is instability in the labor market.

To complement this analysis this paper also present the "Age at First Union" which is defined as the age when the individuals got married or started cohabitating with their

partner for the first time. Figure 9 (i)-(l) presents the trends for this variable by gender, educational group, and race. It shows that the age at first union has increased over time for men and women. Moreover, college educated individuals tend to further delay their first union, possible due to human capital accumulation. For example, in 2015 a high school man (woman) graduate had their first union at age of 24.7 (22.9) years while a college graduate man had their first union at age of 27.4 (26.1) years. Finally, Figure 9 (k) shows that black women have delayed their age at first union and thus, the gap in the age of first union between black men and women have reduced.

Figure 10 presents the life-cycle trends of marriage rates over generation. It shows a sharp decline in the marriage rates as well as a flattening over the life-cycle, with *Millennials* having the lowest marriage rates amongst all generations at all comparable ages (Figure 10 (a)). Some of the reasons propagated for this trend come from the lower costs of running a household individually. This is due to the rise in wages, technological progress in household production and a fall in the cost of this technological progress as mentioned earlier (Greenwood, 2019). Cohabiting rates have certainly risen over each generation, with the *Millennials* having the highest cohabitation rates. It has risen from 2.9 (3.4) percent to 20 (19) percent for the age group of 21 to 23 years for men (women) from the *Boomers-1* generation to the *Millennials*. In line with Lundberg and Pollak (2007), the lower educated groups (some college and less) has seen a retreat from marriage. This is so because the life-cycle trends for each generation is clearly below the previous one, with *Millennials* being the most distinct. It could be the case the lower educated individuals are ruling themselves out of the marriage market (Lundberg and Pollak, 2007). However, for college educated, Figure 10 shows a delay in marriage instead of a retreat from marriage since by the age group of 30-33 years, *Millennials* have caught up to the marriage rates of the previous generations. The patterns are similar across black and white men; however, black *Millennial* women see a catching up of the marriage rate by the age group of 30-33 years.

Framework for Analyzing Education and Marriage It is clear from the previous trends that education plays an important role in the marriage market and is well-documented in the literature (Chiappori, Salanié and Weiss (2017), Gayle and Shephard (2019), among others). This section presents an empirical framework of how an individual chooses to either remain single or chooses a partner of a certain education level in a frictionless marriage market. The multinomial logit empirical analog of the equilibrium marriage

market model in Choo and Siow (2006), Chiappori, Salanié and Weiss (2017), and Gayle and Shephard (2019) is summaries by the log-odd ratio of marrying a partner of a particular type and singlehood:

$$\log\left[\frac{P(m_{it}=j)}{P(m_{it}=0)}\right] = \alpha_0^j + \sum_{r=1}^{4}\alpha_1^j d_{i,t-r} + \sum_{r=1}^{4}\alpha_2^j h_{i,t-r}^m + \boldsymbol{\delta^j}\mathbf{Z_{it}} \tag{3}$$

where $P(m_{it}=j)$ refers to the probability that individual of gender i chooses a partner of type j in calendar time t. The index j indexes the type of partner with choosing to remain single as the baseline ($j=0$). In the empirical implementation partners are indexed by three levels of educational attainment as follows: Less than or equal to high school ($j=1$), Some college ($j=2$), College graduate and above ($j=3$). The regression also includes controls ($\mathbf{Z_{it}}$) which are age, age-squared, race, education, number of kids of the individual of gender i. Education attainment of the individual is categorized the same as the education attainment of the partners[29]. All other variables are as defined in equation (1). The marriage transition analysis is done separately for each gender and cohort and that data is restricted to backs and whites between ages 20 and 40.

What Predicts Partner Choice? Figure 11 (a)-(h) plot the observed marriage and education transitions for each category, where the age of women is restricted to be between 30 and 35 years old. Panels (i)-(p) present the predicted partner choice using the specification, as defined in equation (3). Figure 11 (i)-(p) present predicted probabilities for individuals at age 35, where the remaining variables (unless stated otherwise) are set to their average values. The first two columns of the figure focus on all partner choices, whereas the last two columns exclude single and focus on married partners.

Figure 11 (a)-(h) show that singlehood has risen over generations. The only exceptions are some college and more black women who see a marginal fall in singlehood rates for *Millennials*, although in levels, these are much higher than whites. However, for the predicted partner choice, Figure 11 (i)-(p) show that singlehood rates are significantly lower. This implies that there is some form of sorting. However, this paper cannot comment on assortative mating as the singlehood rates fluctuate quite a bit. Overall, assortative mating has gone down or remained more or less the same across generations. The only exception is college educated black women after *Silent* generation (where the proportion

[29]This way of categorizing education is used in this section of the paper because there are very few women who are high school dropout in the data. Hence, in order to obtain enough data to analyze marriage transitions, high school dropouts and high school graduates are placed in the same category.

of college black women is low), where assortative mating has increased. There is not much difference between the predicted and observed probabilities.

6 Conclusion

This paper analyzes the changes in the family structure, fertility behavior, and the division of labor within the household over generations. Using PSID data, it documents time trends and life-cycle profiles over generations on three aspects - work, family and leisure. This paper provides a first cut on the behavior of *Millennials* and how they compare with the previous generations.

Focusing on work, it finds that the wage age-profile has been shifting down over generations, especially for *Millennial* men (up to age 33). However, women wages have instead stagnated, with *Millennial* women earning lower wages than *Generation X* in the later part of the life-cycle. Therefore, rising wage inequality has come from men and not women. To understand the decomposition of gender gap in wages, an Oaxaca-Blinder decomposition is estimated which decomposes the gender wage gap into explained and unexplained components. For the age-group 18 to 65 years, there is a sharp fall in the unexplained component over the generations from 30 percent for *Silent* generation to 8 percent for the *Millennials*.

The reversal in gender gap in education is well documented; however, this switch occurred in the *Boomers-2* generation since up to *Boomers-1*, men were graduating at higher rates from college than white women. Focusing on race, there has also been a significant increase in college graduation rates between *Boomers-2* and *GenX* for both blacks and whites, a pattern that continues to accelerate for *Millennials*. This is in sharp contrast to the comparison between *Silent* and *Boomers-1* generations where the college graduation was generally stable. The paper also finds a significant reduction in high school dropout rates; this has been most pronounced for blacks. The percentage of black high school dropouts fell from 30 percent in *Silent* generation to around 8 percent in the *Millennial* generation. The paper also estimates the returns to education over generations, especially given the changing educational attainments and narrowing of gender wage gaps. For both black and white men, the returns to college have increased for all generations, with the most significant increase for *Millennials* and specifically for black men. For women, the trend is less clear.

With respect to leisure, the paper finds that over generations, while the amount of

leisure enjoyed by women has been increasing, the amount of leisure enjoyed by men shows no clear pattern. However, for both men and women, *Millennials* enjoy a higher level of leisure than previous generations. This rise in leisure for women is primarily coming from married women. The finding that the amount of leisure enjoyed by men is stable over generations mask different dynamics in the components of leisure. There has been a significant reduction in hours worked by men, with *Millennials* working the least. At the same time, there has been an increase in the hours devoted to home production by men, with *Millennial* men devoting more hours to home production than men in any previous generation. The opposite is true for women - the reduction in hours devoted to home production for women over generations has more than offset the increase in hours devoted to market work. More importantly, most of this movement has happened within married couples. To understand what predicts housework hours, the paper controls for race, education, gender, marital status, number of young/old kids and age. It finds that young and old kids do have a significant impact on housework hours, especially young kids in the household.

The paper finds that marriage, itself, (and thus, fertility) has seen many drastic changes over generations. Lower educated individuals have retreated from marriage, especially *Millennials*. Yet it is not clear whether the *Millennials* would be marrying at an overall rate lower than previous generations as the composition of education has also changed, with a much higher number of college-educated *Millennials*. Using a multinomial logit to predict partner choice, no clear trends in assortative mating are seen over generations. Although this is in contrast to Greenwood and Guner (2008) and Santos and Weiss (2016), it is in line with the findings of Gihleb and Lang (2016). With respect to cohabitation, for *GenX* and *Millennials*, rates are much higher early on in life relative to previous generations; nevertheless, later on, it drops off significantly, indicating cohabitation itself is transitory - a pattern that is not seen for the *Silent* and *Boomer* generations.

Finally, the results in the paper confirms the significant decline in completed fertility, with *Boomers-2* and *GenX* having fertility rates falling below replacement rate. Similar trends exist across race (see Lundberg and Pollak (2007) and Greenwood (2019)). There has been a steady decline at each age parity of the proportion of birth to married women, although this has accelerated among *Millennials*. The paper also finds that *Millennials'* completed fertility rate may not necessarily be below *GenX* - while they are delaying fertility, fertility rates at later ages might be higher than the immediate previous generations.

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7 Tables

Table 1: Years of Education by Generation

	Men					Women				
	Generation:					Generation				
	Silent	Boomers-1	Boomers-2	GenX	Millennials	Silent	Boomers-1	Boomers-2	GenX	Millennials
Overall	13.42	13.29	13.10	13.88	13.85	13.15	13.29	13.40	14.25	14.37
	[2.76]	[2.31]	[2.80]	[2.36]	[2.40]	[2.45]	[2.38]	[2.67]	[2.30]	[2.27]
Observations	6981	11708	9152	8915	3607	6985	13306	11122	9858	4466
Marital Status:										
Not Married	13.81	13.02	12.95	13.42	13.44	13.08	13.09	13.17	13.77	13.89
	[2.80]	[2.30]	[2.43]	[2.24]	[2.39]	[2.37]	[2.39]	[2.64]	[2.30]	[2.32]
Observations	696	2418	2447	2746	1502	1186	3306	3455	3442	1936
Married	13.69	13.02	13.15	14.08	14.14	13.42	13.09	13.50	14.51	14.74
	[2.49]	[2.30]	[2.92]	[2.38]	[2.36]	[2.31]	[2.39]	[2.68]	[2.26]	[2.16]
Observations	5122	2418	6703	6169	2105	4913	3306	7665	6416	2530
Race:										
White	13.98	13.65	13.45	14.19	14.31	13.58	13.59	13.67	14.64	14.89
	[2.61]	[2.32]	[2.77]	[2.23]	[2.37]	[2.36]	[2.42]	[2.69]	[2.14]	[2.02]
Observations	4912	7262	5860	5701	2099	4618	7712	6382	5574	2378
Black	12.10	12.85	12.84	13.36	13.24	12.29	13.07	13.40	13.87	13.73
	[2.51]	[1.86]	[2.12]	[2.26]	[1.83]	[2.34]	[1.99]	[2.01]	[2.19]	[2.41]
Observations	1942	4026	2441	2500	1216	2204	5107	3800	3570	1728

Note: 1. The generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 2. This is calculated for age group of 30 to 35 years old. 3. Marital status is defined as current marital status - whether or not an individual is married at a certain age.

Table 2: What Explains Time Spent at Home? Effect of Young and Old Kids with Sex and Generation

	(1)	(2)	(3)
Woman	1096.622***	1098.438***	858.793***
	[9.9777]	[10.0022]	[10.2194]
Young Kids	102.019***	111.282***	24.674***
	[1.6607]	[3.8237]	[3.3743]
Old Kids	68.322***	71.736***	8.327***
	[1.2879]	[2.4790]	[2.3140]
Woman × Young Kids			200.431***
			[2.7400]
Woman × Old Kids			118.895***
			[2.2907]
Boomers-1	141.894***	142.656***	162.817***
	[13.6823]	[14.0303]	[13.6612]
Boomers-2	177.463***	188.490***	211.623***
	[16.3586]	[16.7449]	[16.4035]
GenX	126.140***	165.348***	194.403***
	[21.1480]	[21.6486]	[21.5522]
Millennials	177.953***	188.992***	220.062***
	[31.2582]	[31.3775]	[31.4174]
Boomers-1 × Young Kids		-2.282	-15.706***
		[4.3535]	[4.1239]
Boomers-2 × Young Kids		-9.409**	-33.926***
		[4.7511]	[4.5940]
GenX × Young Kids		-36.410***	-57.574***
		[5.3402]	[5.2011]
Millennials × Young Kids		-10.308	-35.928***
		[6.7620]	[6.6463]
Boomers-1 × Old Kids		0.296	-0.597
		[3.0854]	[3.0235]
Boomers-2 × Old Kids		-6.662*	-14.169***
		[3.6604]	[3.6253]
GenX × Old Kids		-16.779***	-20.977***
		[4.4114]	[4.3759]
Millennials × Old Kids		-5.365	-15.046**
		[7.4468]	[7.2973]
Observations	257085	257085	257085

Note: 1. The generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 2. The dependent variable is annual housework hours. Column (1) includes race, education group (<HS, HS, Some College and College), sex, married or not, generation (*Silent*, *Boomers-1*, *Boomers-2*, *GenX* and *Millennials*), number of young kids, number of old kids, age, age^2, interaction of sex and education group, interaction of sex and generation, interaction of race and generation, interaction of generation and education group, and interaction of marriage and generation. Column (2) adds the interaction of generation and young and old kids. Column (3) adds the interaction of sex with young and old kids.

Table 3: Completed Fertility by Generation

	Generation:			
	Silent	Boomers-1	Boomers-2	GenX*
Overall	2.55	2.12	1.93	1.64
	[1.79]	[1.44]	[1.41]	[1.34]
Observations	11580	23370	18810	323
Marital Status:				
Not Married	2.19	1.99	1.84	1.46
	[1.78]	[1.53]	[1.48]	[1.30]
Observations	3497	7481	6640	117
Married	2.71	2.18	1.98	1.75
	[1.77]	[1.39]	[1.36]	[1.35]
Observations	8083	15889	12170	206
Education:				
Less than High School	3.53	2.83	2.70	2.00
	[2.27]	[1.65]	[1.55]	[1.93]
Observations	2550	3258	2574	30
High School	2.51	2.21	1.93	1.72
	[1.52]	[1.33]	[1.37]	[1.34]
Observations	3906	8442	6600	104
Some College	2.25	2.02	1.81	1.60
	[1.41]	[1.35]	[1.35]	[1.24]
Observations	2484	6390	5572	94
College	1.85	1.65	1.62	1.52
	[1.27]	[1.31]	[1.25]	[1.21]
Observations	2310	4842	3726	86
Race:				
White	2.29	2.00	1.80	1.51
	[1.53]	[1.33]	[1.27]	[1.27]
Observations	7662	12942	10208	192
Black	2.86	2.20	1.99	1.94
	[1.98]	[1.47]	[1.52]	[1.42]
Observations	2730	8226	6224	95

* indicates that the generation has right censored age-group.
Note: 1. The generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 2. This is calculated for women in the age group of 45-50 years.

Table 4: Proportion of Births to Married Women and Parity of Births by Generation and Age

	Proportion of Births to Married Women					Parity of Births				
	Generation:					Generation				
	Silent	Boomers-1	Boomers-2	GenX	Millennials	Silent	Boomers-1	Boomers-2	GenX	Millennials
Age Group:										
18-20	70.51	59.33	43.47	26.34	16.06	0.22	0.22	0.21	0.23	0.19
21-25	82.49	73.49	61.99	46.85	38.56	0.79	0.66	0.64	0.63	0.59
26-30	86.36	79.82	73.20	70.48	64.09	1.51	1.25	1.17	1.08	1.07
31-35	87.75	82.13	80.46	82.69	74.49	2.03	1.70	1.51	1.47	1.48
36-40	85.41	83.03	83.65	84.64		2.30	1.93	1.66	1.65	
41-45	83.52	83.41	82.11	72.34		2.41	2.00	1.72	1.62	

Note: 1. The generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 2. The marital status refers to the marital status of a woman at the time of birth. 3. For *GenX*, there is a fall in parity of birth for age group 41-45 relative to 36 to 40 years, and this is primarily due to small sample for this age group.

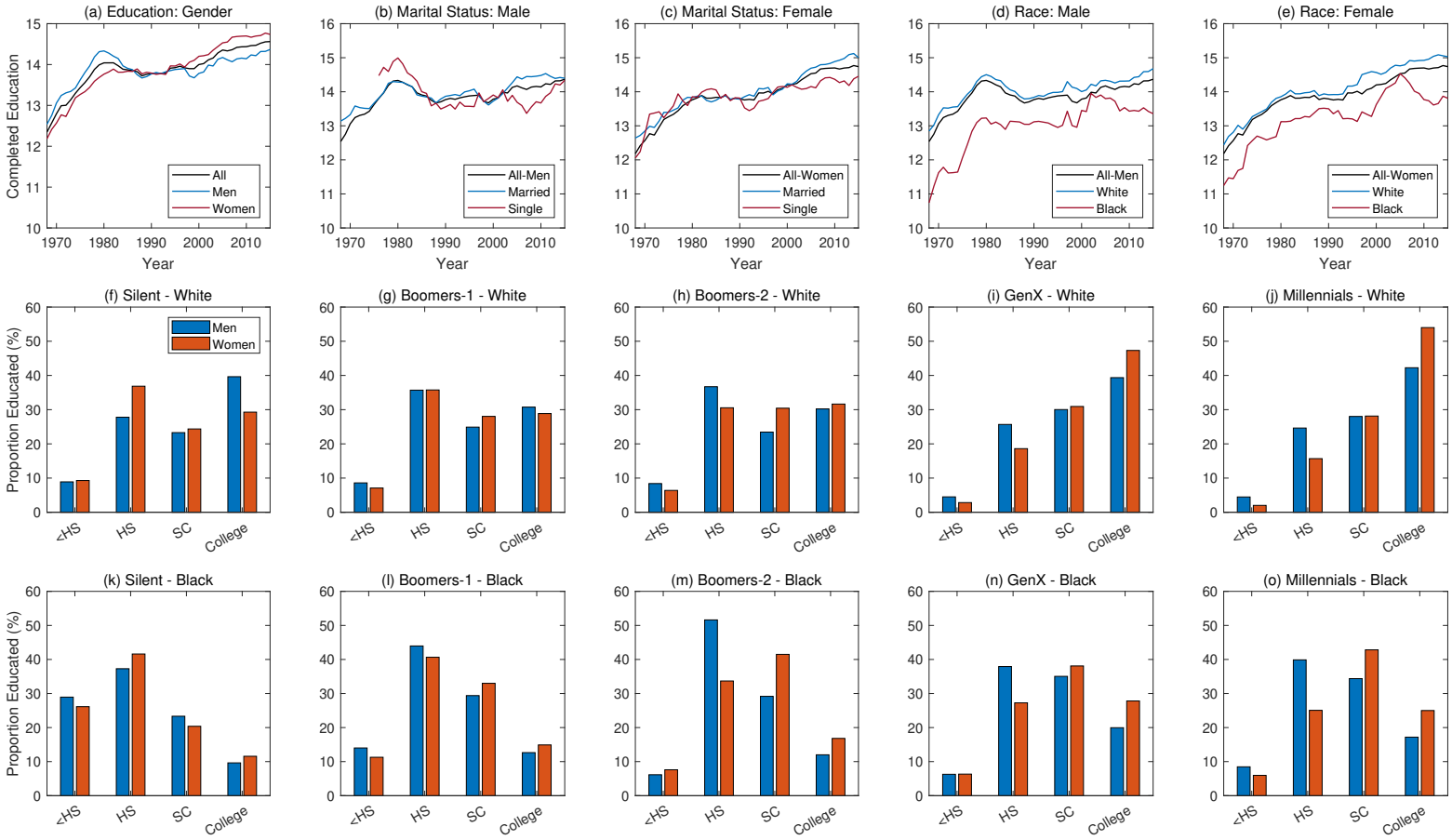
Table 5: Average Used in Multinomial Logit

	Silent	Boomers-1	Boomers-2	GenX	Millennials
Number of Kids	2.12	1.87	1.84	1.87	1.56
	[1.42]	[1.20]	[1.22]	[1.31]	[1.32]
Participation in last 4 periods	2.74	3.06	3.23	3.37	3.42
	[1.54]	[1.37]	[1.29]	[1.23]	[1.16]
Hours worked in last 4 periods/10	387.12	457.61	537.27	584.09	573.80
	[314.01]	[313.11]	[316.89]	[316.67]	[299.57]
Observations	11475	24521	17146	14739	6557

Note: 1. The generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 3. A multinomial logit regression is run where the dependent variable categories are single, partner with less than or equal to high school education, partner with some college education and partner with college education on the education of a woman and includes the following controls: age, age-squared, race, number of kids, employment in the past 4 periods and hours worked in the past 4 periods.

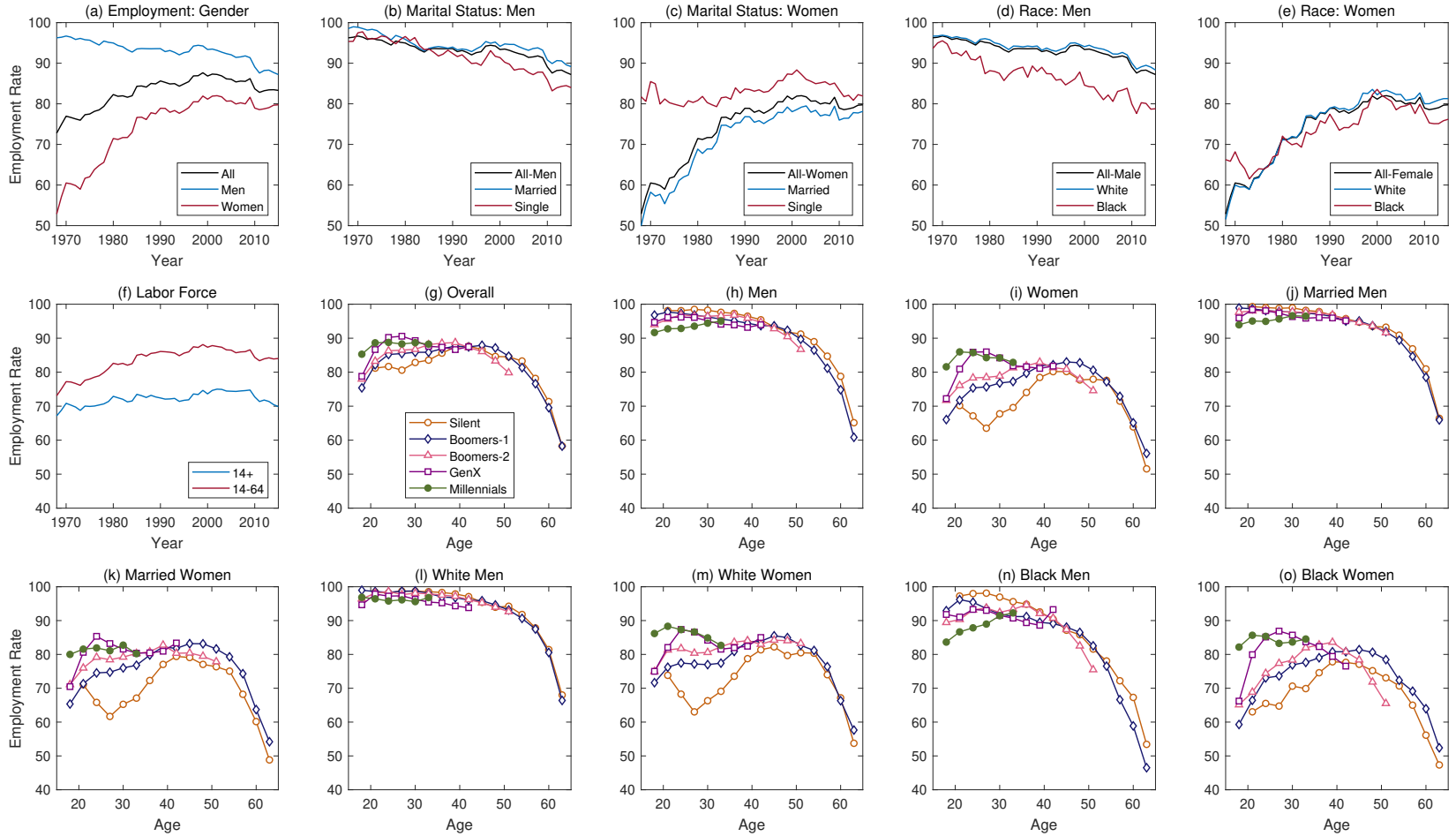
8 Figures

Figure 1: Education - Trends and Generations



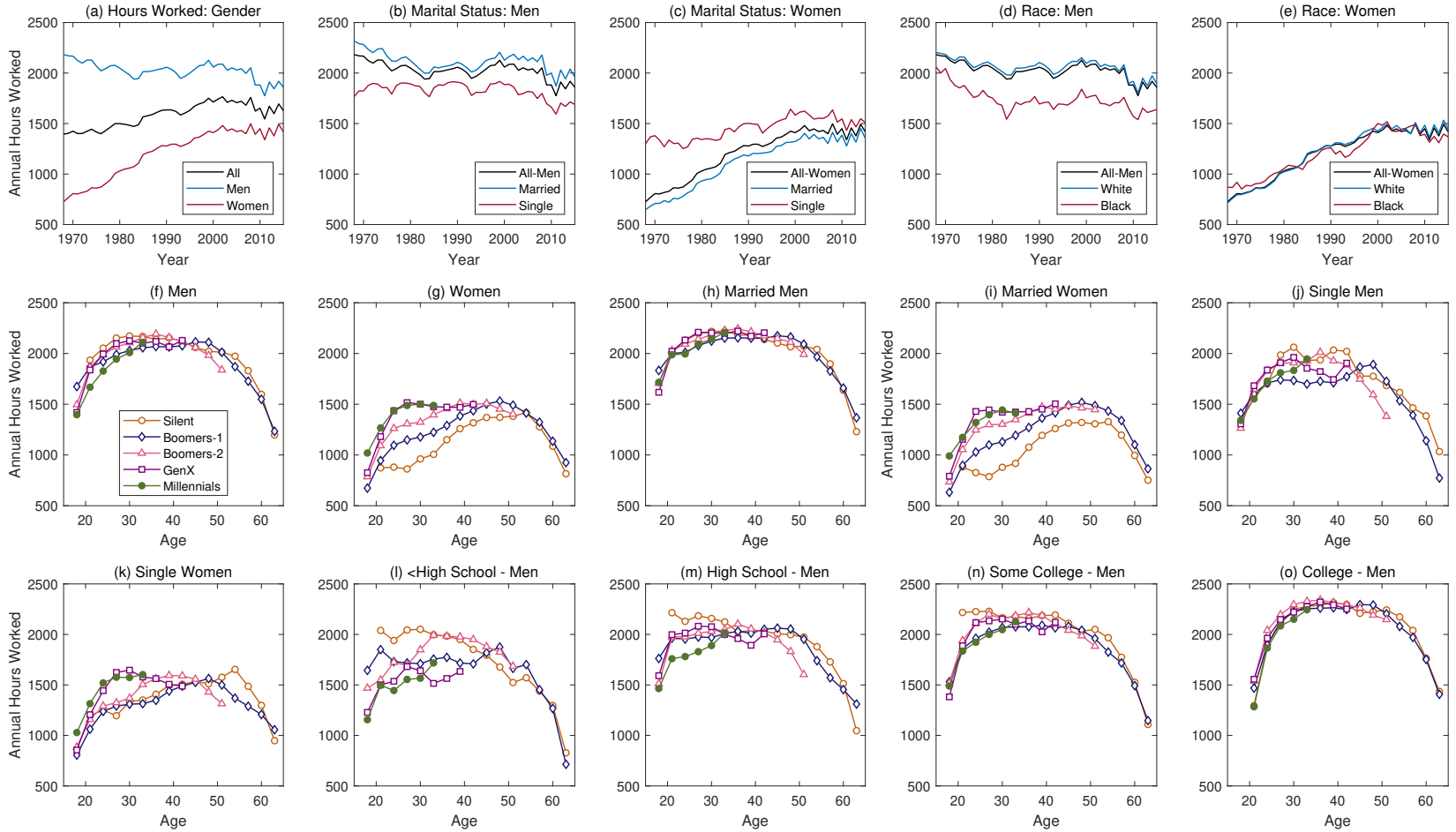
Notes: 1. All graphs are restricted to head and spouse. 2. For trend graphs: all graphs are restricted to the age group of 30 to 35 and the relevant variable is the years of education. 3. Generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 4. For the generation graphs, the unweighted proportion educated is plotted for the age group of 30 to 35 years.

Figure 2: Employment Rate - Trends and Generations



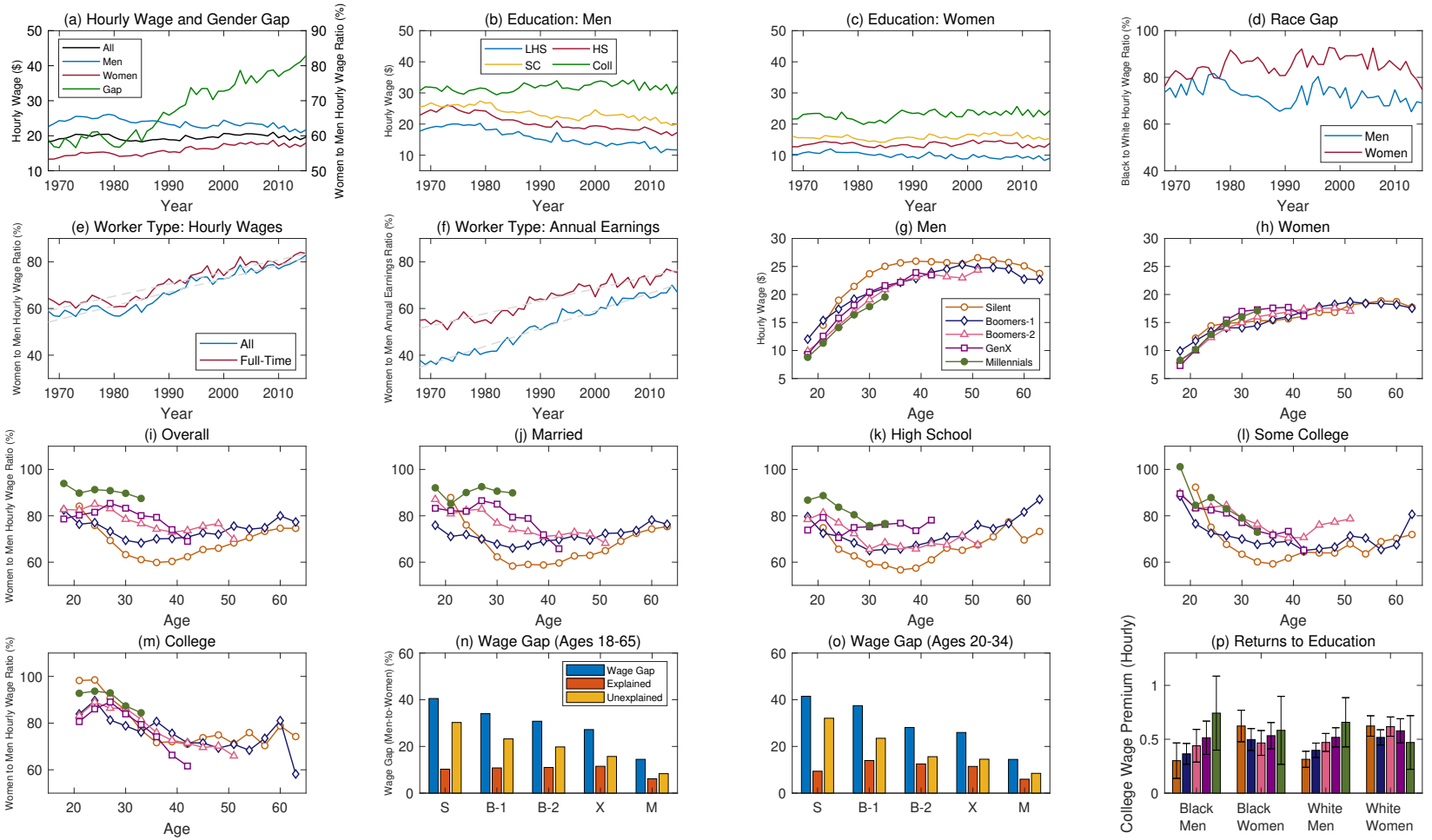
Notes: 1. An individual is said to be employed if a positive number of hours are spent working; and set to zero if no hours are worked. 2. All graphs are restricted to head and spouse of the family unit. 3. For trend graphs: all graphs are restricted to the age group of 18 to 65. 4. Generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 5. Generation graphs are plotted for 3 age group intervals for smoothening of the trend, therefore, age 18 refers to age group of 18 to 20 years. These are also restricted to ages 18 to 65.

Figure 3: Annual Hours Worked - Trends and Generations



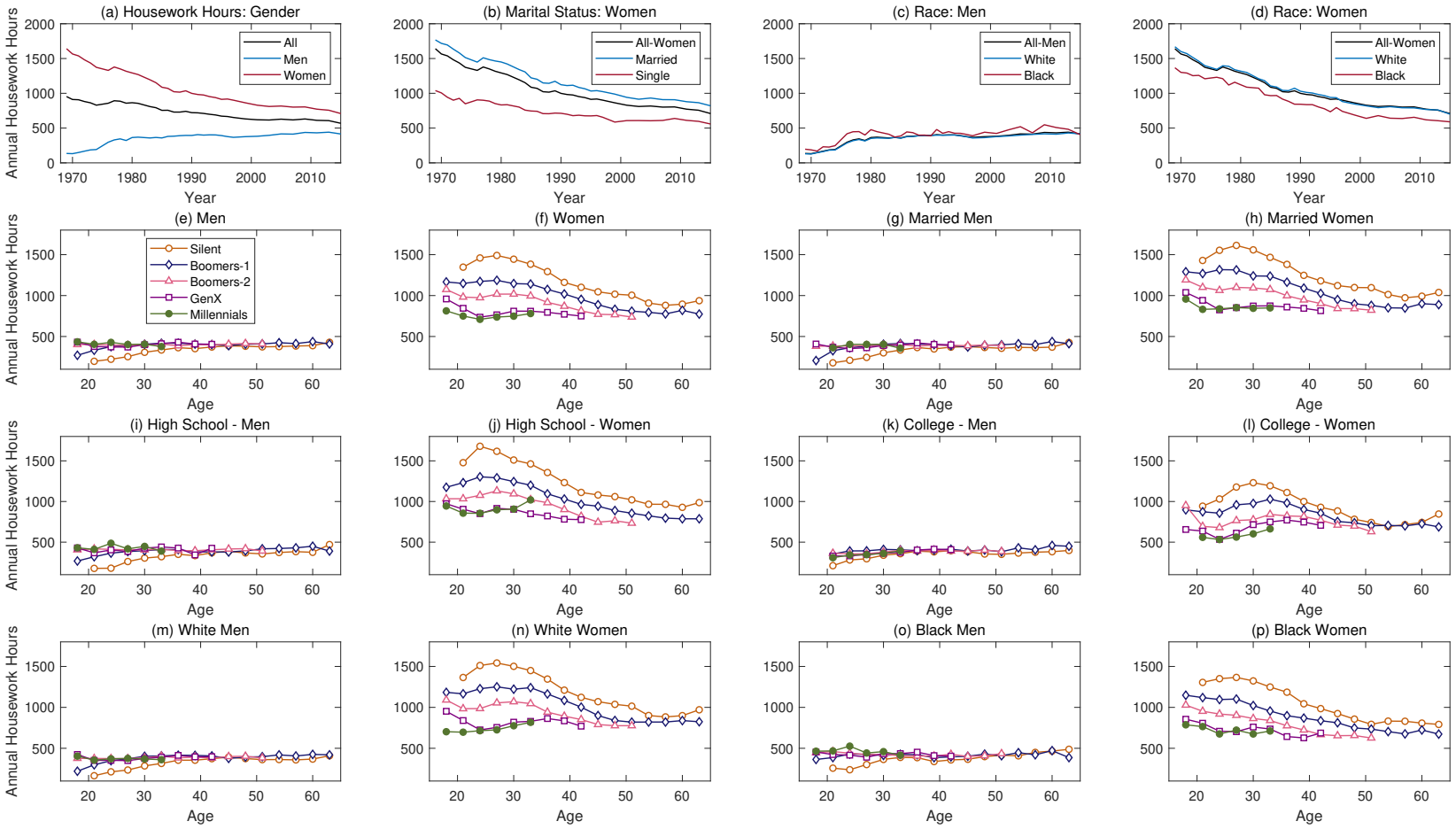
Notes: 1. All graphs are restricted to head and spouse. 2. For trend graphs: all graphs are restricted to the age group of 18 to 65. 3. Generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 4. Generation graphs are plotted for 3 age group intervals for smoothening of the trend, therefore, age 18 refers to age group of 18 to 20 years. These are also restricted to ages 18 to 65.

Figure 4: Wages - Trends and Generations



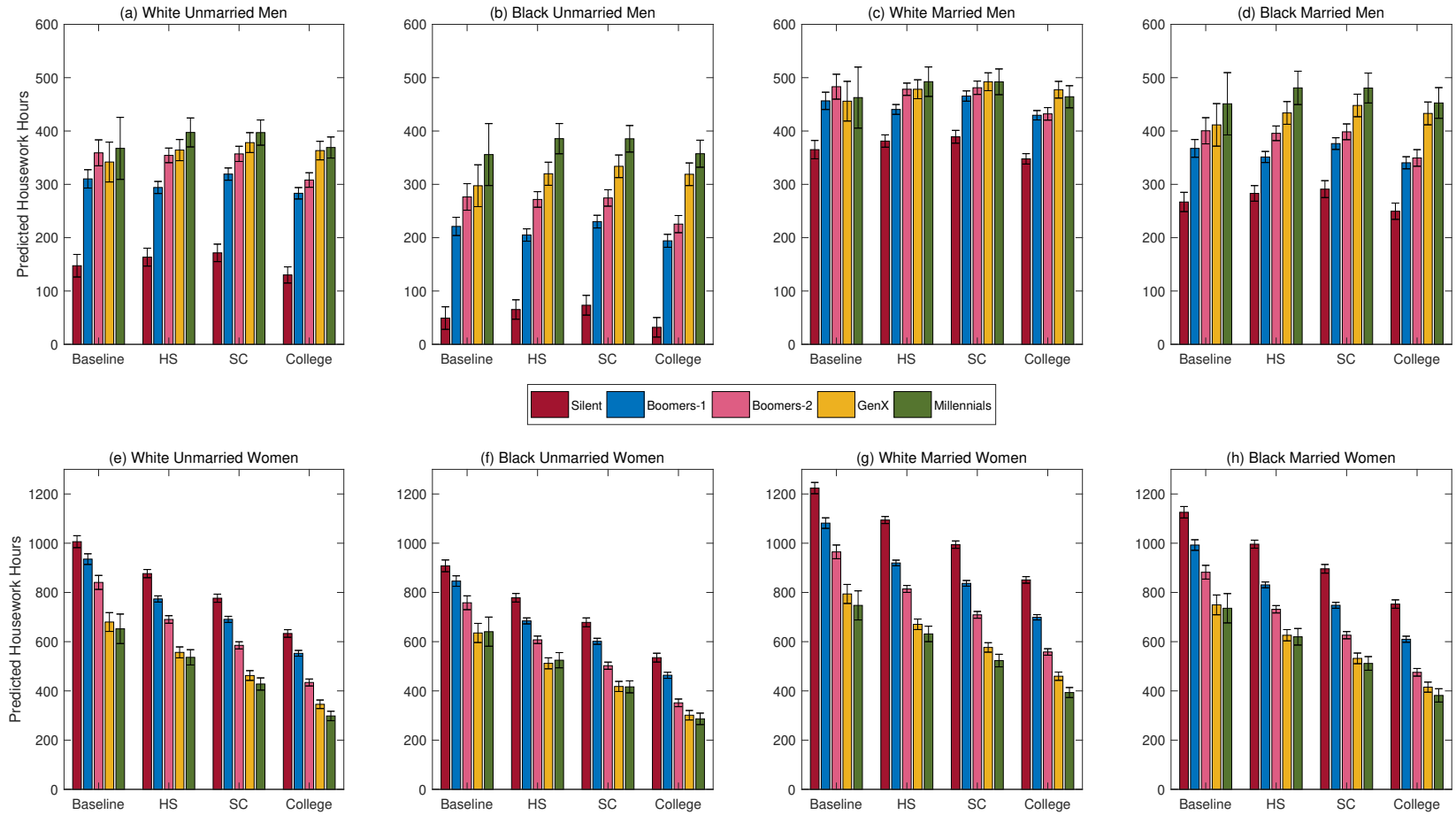
Notes: 1. All graphs are restricted to head and spouse. 2. For trend graphs: all graphs are restricted to the age group of 18 to 65. 3. Generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 4. Graphs (e) and (f) also present a fitted time trend. 4. 4(n) represents the college wage premium, as presented in Chiappori, Salanié and Weiss (2017), with different base category (high school is used as the base category) and different definition of generations. See text for more details. 5. The wages used in 4(o) and 4(p) are log wages and are truncated at the bottom 1 and top 99 percentiles. 5. Generation graphs are plotted for 3 age group intervals for smoothening of the trend, therefore, age 18 refers to age group of 18 to 20 years. These are also restricted to ages 18 to 65.

Figure 5: Annual Housework Hours - Trends and Generations



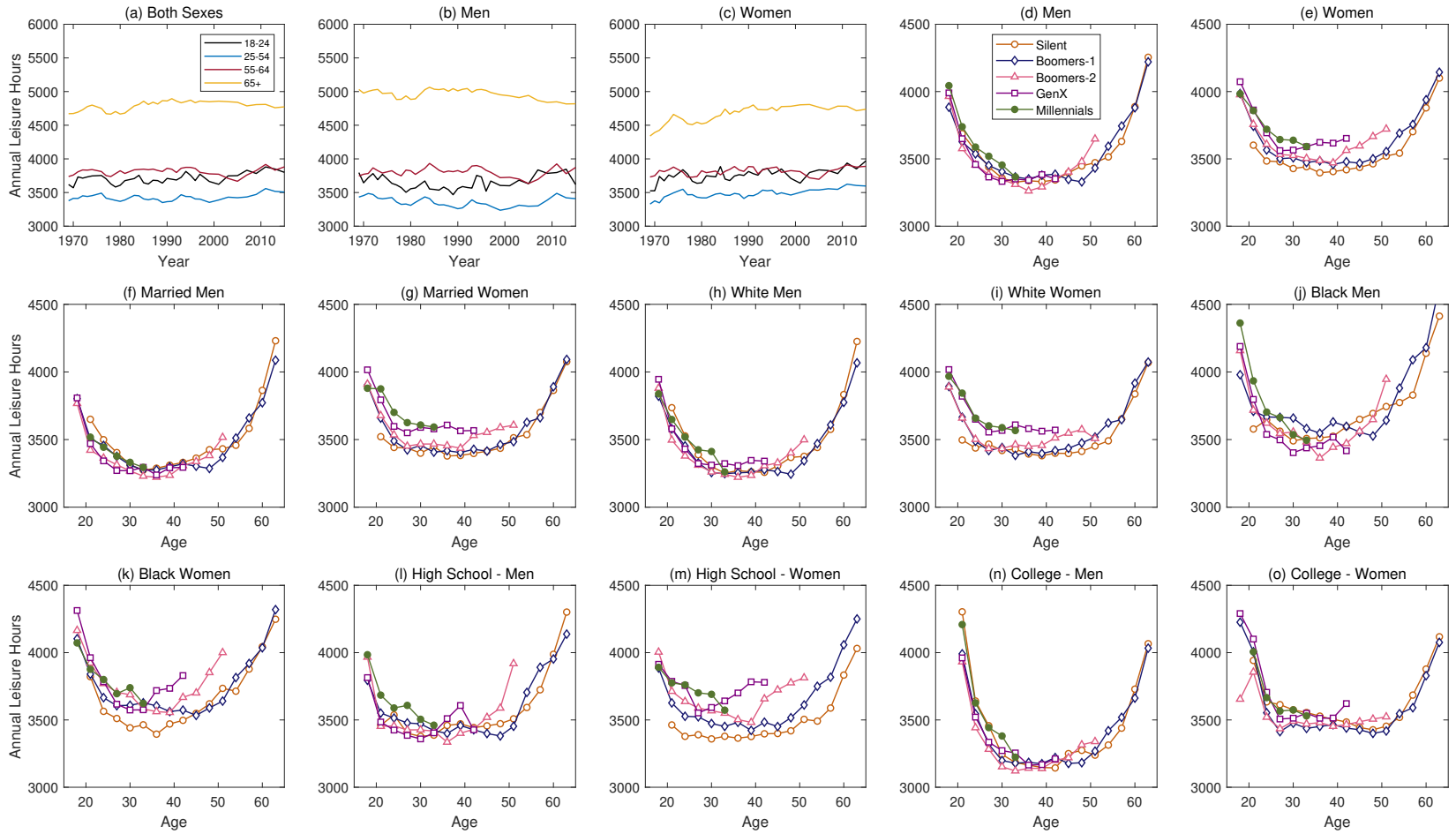
Notes: 1. All graphs are restricted to head and spouse. 2. For trend graphs: all graphs are restricted to the age group of 18 to 65. 3. Generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 4. Annual housework hours are calculated by taking the weekly housework hours, as reported by PSID, and multiplying by 52. 5. Generation graphs are plotted for 3 age group intervals for smoothening of the trend, therefore, age 18 refers to age group of 18 to 20 years. These are also restricted to ages 18 to 65.

Figure 6: What Predicts Housework Hours? By Sex and Marital Status, Changing Education



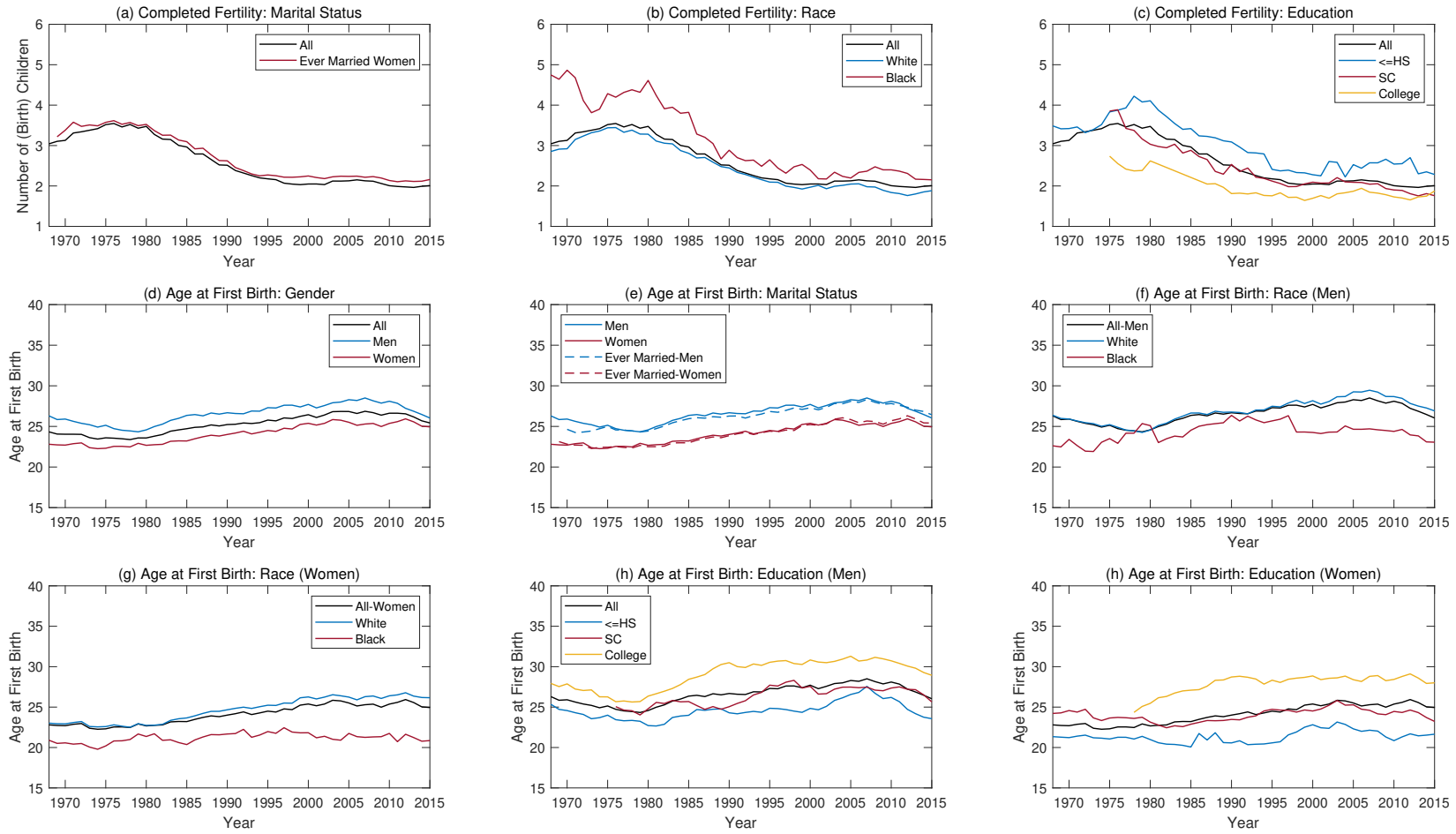
Notes: 1. Generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 2. The baseline is each group with only less than high school education at age 35 with no kids. Each additional set of bars calculate the predicted housework hours for that education group. The regression specification includes race, education group (<HS, HS, Some College and College), sex, married or not, generation (*Silent*, *Boomers-1*, *Boomers-2*, *GenX* and *Millennials*), number of young kids, number of old kids, age, age^2, interaction of sex and education group, interaction of sex and generation, interaction of race and generation, interaction of generation and education group, interaction of marriage and generation, interaction of generation and young and old kids and interaction of sex with young and old kids.

Figure 7: Annual Leisure Hours - Trends and Generations



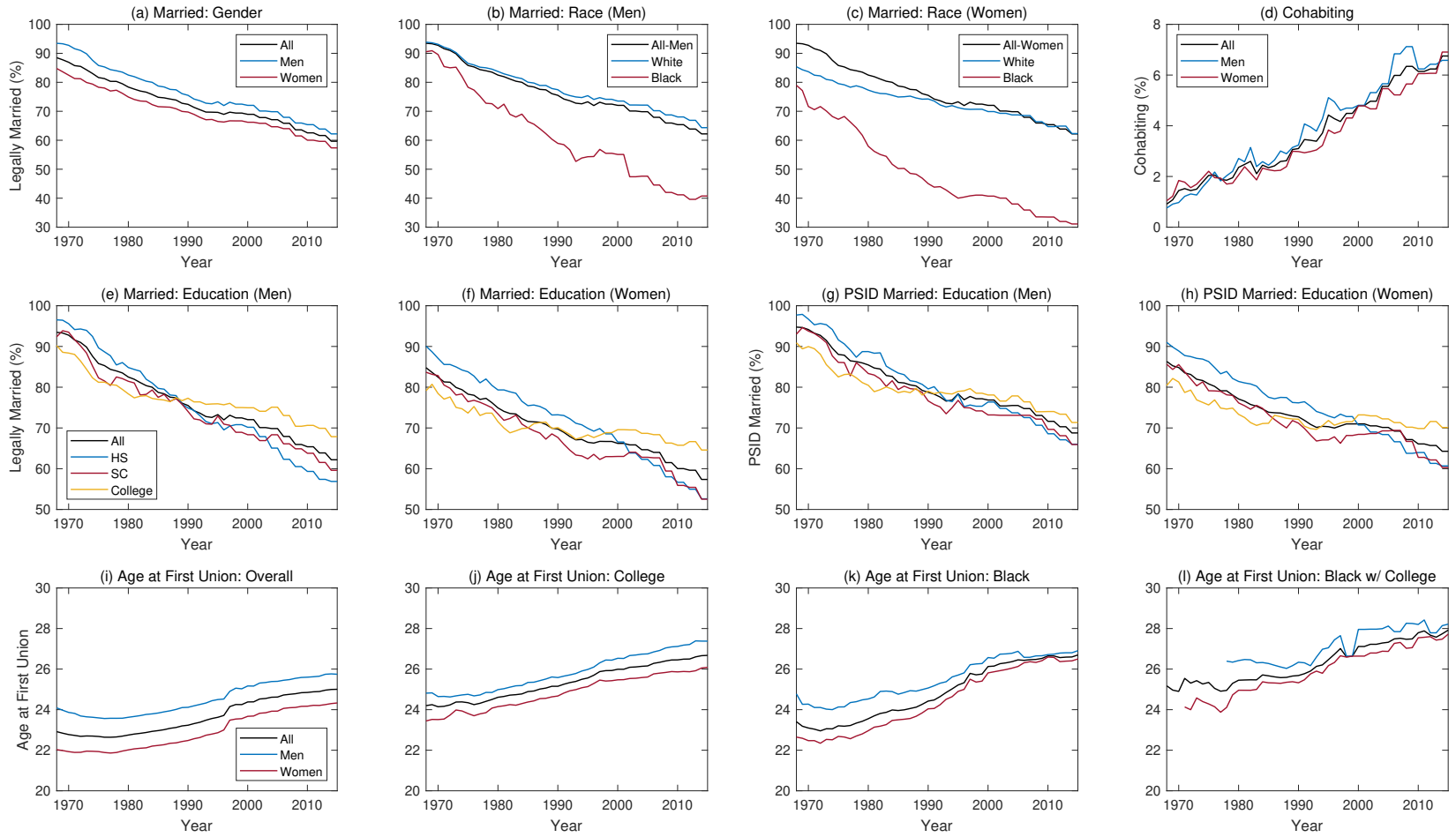
Notes: 1. All graphs are restricted to head and spouse. 2. For trend graphs: all graphs are restricted to the age group of 18 to 65. 3. Generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 4. Leisure is calculated as the difference of the sum of annual work and housework hours from total hours (5840 hours – after allowing for 8 hours of sleep). 5. Generation graphs are plotted for 3 age group intervals for smoothening of the trend, therefore, age 18 refers to age group of 18 to 20 years. These are also restricted to ages 18 to 65.

Figure 8: Completed Fertility and Age at Birth - Trends



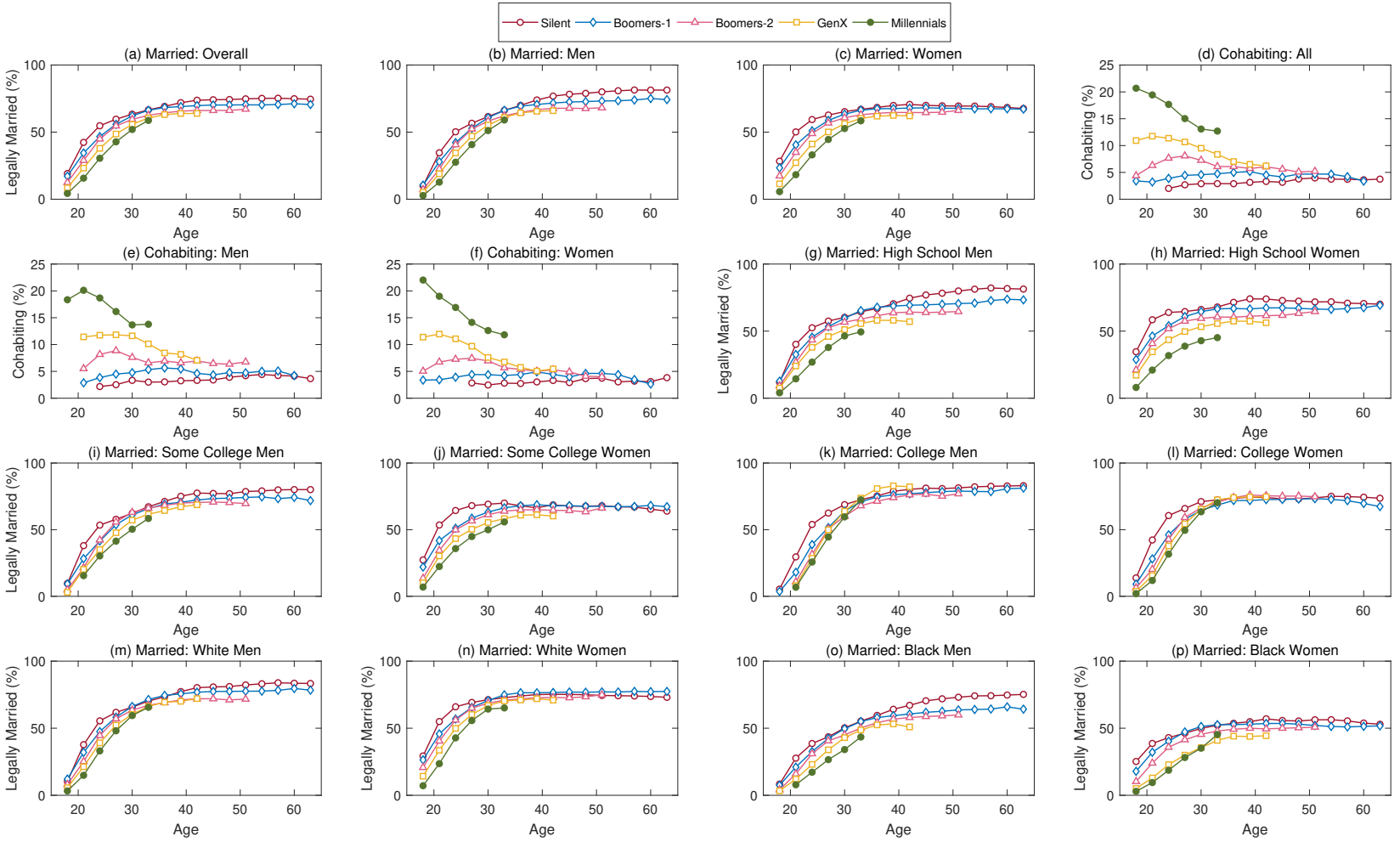
Notes: 1. All graphs are restricted to head and spouse. 2. This is restricted to the age group of 45 to 50 years for completed fertility graphs and to the age group of 35 to 40 years old for age at first birth. 3. Marital status refers to ever married by the age of 45, for completed fertility and by the age of 35 for age at first birth.

Figure 9: Marriage Rates and Age at First Union - Trends



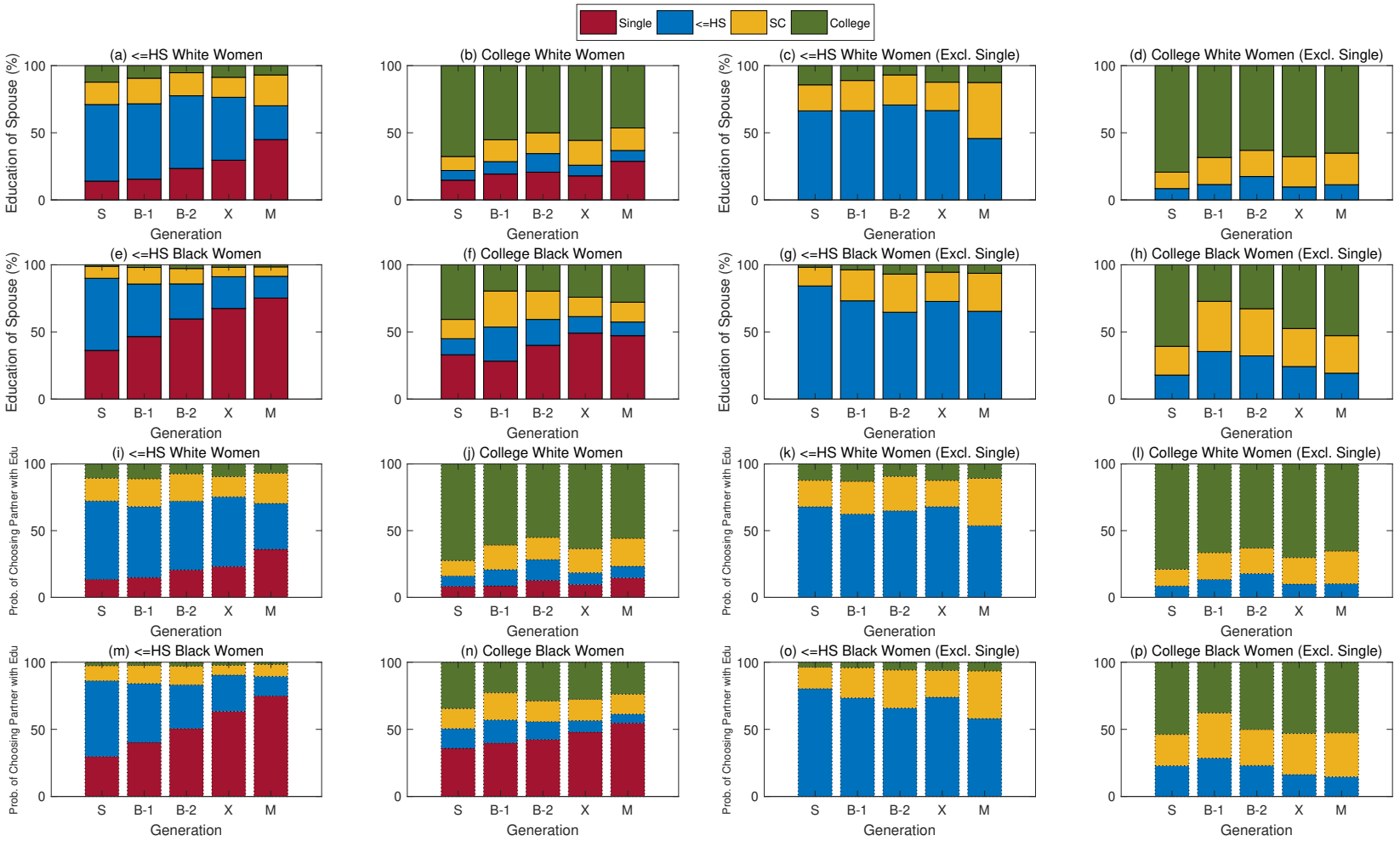
Notes: 1. All graphs are restricted to head and spouse. 2. All graphs are restricted to the age group of 18 to 65. 3. Married, unless stated otherwise, refers to legally married. PSID Married refers to married or cohabiting individuals.

Figure 10: Marriage Rates - Generations



Notes: 1. All graphs are restricted to head and spouse. 2. Generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 3. Married, unless stated otherwise, refers to legally married. 4. Generation graphs are plotted for 3 age group intervals for smoothening of the trend, therefore, age 18 refers to age group of 18 to 20 years. These are also restricted to ages 18 to 65.

Figure 11: What Predicts the Probability of Choosing a Partner?



Notes: 1. All graphs are restricted to head and spouse. 2. Generations are defined as follows: *Silent* (1940-1949); *Boomers-1* (1950-1959); *Boomers-2* (1960-1969); *GenX* (1970-1979); and *Millennials* (1980-1989). 4. Graphs (a) to (h) plot observed marriage-education transitions for each category, where the age of a woman is restricted to be between 30 and 35 years old. Graphs (i) to (p) plot predicted probabilities of choosing a partner of certain education by a woman of age 35 of certain education and race (setting other attributes to the mean). A multinomial logit regression is run where the dependent variable categories are single, partner with less than or equal to high school education, partner with some college education and partner with college education on the education of a woman and includes the following controls: age, age-squared, race, number of kids, employment in the past 4 periods and hours worked in the past 4 periods.