To have it all? Career and family choices of college-educated Indonesian women

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ABSTRACT

Are higher-educated women empowered to balance their career and family objectives? This paper investigates the evolving preferences for work and family life among college-educated women in Indonesia, spanning birth cohorts from the 1950s to the 1990s. Our research reveals a growing polarization of labor market and family formation outcomes among the younger cohorts of female college graduates. Younger women either delay marriage to stay in the labor force or opt out of the labor force altogether post-marriage. We explore two potential drivers for this trend. First, we find that this trend coincides with rising female participation in time-demanding, high-skilled, traditionally male-dominated professions. Second, on the other hand, we find that there is a rising conservatism of gender views among young men that might have contributed to marriage market failure.

1. Introduction

As the largest economy in Southeast Asia and 16th in the world, Indonesia has largely enjoyed robust economic growth since the 1970s. During this period, Indonesia has undergone profound socioeconomic changes and considerable structural transformations. Most notably, education attainment has significantly improved. Primary education enrolment has been virtually universal since the 1980s, while secondary enrolment is gradually climbing (World Bank, 2020a).

As basic education attainment and economic conditions improved, tertiary education outcomes followed. Figure 1 shows how Indonesia dramatically boosted its tertiary enrolment rate. Since 2012, female enrolment has consistently overtaken males by an increasingly substantial degree. The expansion in higher education attainment has accelerated social mobility and enabled the emergence of the middle class, which has become the backbone of Indonesia's economic development (World Bank, 2020b). The rise of college education also means that more Indonesians are able to attain more prestigious jobs that allow them to build careers. These jobs usually command higher wages and, with it, more demanding working hours.

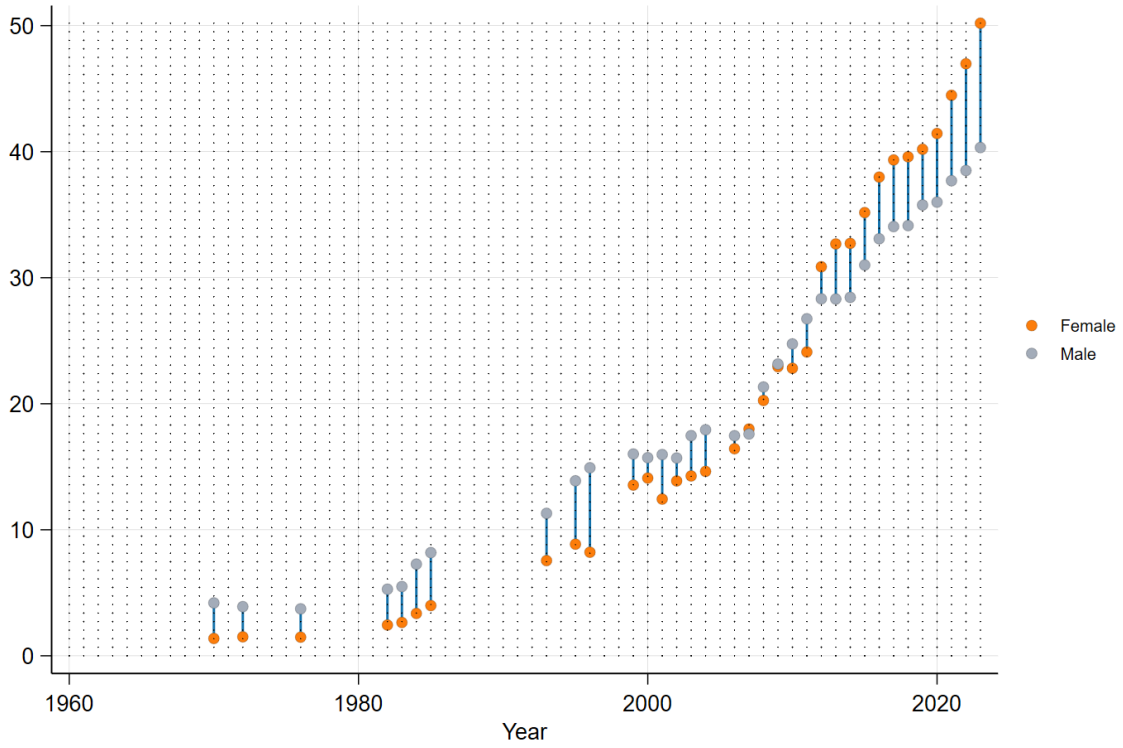
Classic literature predicts a decline in fertility or delays in family formation as female education, employment, and wages rise.[1] Historically, as a nation industrializes, building a career presents a tremendous opportunity cost for women and their families (Goldin, 2021). The early stage of economic development created factory jobs that were typically reserved for men. This is in line with the prevailing social norms that men should be the primary breadwinner (Jayachandran, 2021) and women should be responsible for the bulk of house chores and childcare (Sayer, 2005). This massive boost in men's economic prospects meant that a family could prosper on a single income. The household income effect meant that couples could maximize welfare by having each person specialize in either work or household sector. Family formation has tended to flourish during this economic boom (Goldin, 2024).

Yet, as the economy develops further, more prestigious education and job opportunities become more widely available for women. In the utility optimization framework, this causes the opportunity cost of specializing in the family sector to rise relative to building a career (Goldin, 1994). As a consequence, fertility falls, and delays in family formation occur.

[1] See Mammen and Paxson (2000) and Esping-Andersen and Billari (2015)

Studies have frequently pinned traditional social norms as the culprit behind this high degree of career and family trade-offs among women (Seguino, 2007). When women do not specialize, they tend to face a steep penalty on their career prospects (Adda et al., 2017).

Figure 1: Tertiary education enrollment rate in Indonesia



Source: World Development Indicators

Indeed, this was the typical case we observed in many developed countries in the late 20th century.[2] The trend in developing countries seems to mimic this trajectory.[3] However, recent studies shed a new nuance to the discussions, showing that female higher education attainment goes hand in hand with family formation in the long run (Jalovaara et al., 2019; Virtanen et al., 2024).[4] Researchers have attributed this new development to several factors, such as progressive family policies (Kim, 2023), the rising ubiquity of childcare services (Bar et al., 2018; Hazan et al., 2023), and the mainstreaming of gender-egalitarian norms (Esping-Andersen and Billari, 2015).

[2] See Baudin et al. (2015), Cantalini (2017), Bertrand et al. (2021), and Koebe and Marcus (2022)
[3] See Afreen et al. (2024); Batyra (2024); Bongaarts and Hodgson (2022); Stoebenau et al. (2021); Zsembik and Gui (2016)
[4] See Bar et al. (2018); Hazan et al. (2023); Jalovaara et al. (2019); Virtanen et al. (2024)

In this study, we revisit the nexus of higher education and family formation in Indonesia. Studying to what extent college graduates in Indonesia are able to fulfill family and professional goals has critical policy relevance. Higher education is one of the key instruments in advancing Indonesia's human capital and status as a high-income economy (World Bank, 2020a, 2020b) and in closing the gender gap (World Bank, 2024). Yet, as tertiary education attainment improved in Indonesia, contrary to the experiences of developed countries, recent developments might challenge the prospects of higher-educated women in aligning careers with families. Most notably, there is a decline in marriage and childbearing age (Dong and Merdikawati, 2023) and rising conservatism among Indonesian youth (Brown, 2018; Davies, 2020; Laksana, 2020).

This study is also an important contribution to the literature. A significant gap in the existing literature is the rare focus on the relationship between higher education and family formation in developing countries. Notable works have mostly focused on the general women population and have given ample attention to women's economic participation and how household responsibilities hinder them in Indonesia.[5] However, less attention has been given to the reverse: how pursuing professional goals affects college graduate women's preference towards family formation.

In addition to our explicit focus on college graduates, we also add to the literature by examining joint labor market and family formation outcomes. This analysis extends the work of Cameron et al. (2019) and Dong and Merdikawati (2023) who explored women's labor market and family outcomes separately and only focused on the general population. Inspecting joint outcomes allows us to ascertain labor market and family preferences better and tease out whether college graduate women are able to attain both. We also utilize a different dataset from the aforementioned studies. While the other studies used the National Socioeconomic Survey (Susenas), we use the National Labor Force Survey (Sakernas). Sakernas allows us to observe not only the trend in the labor market and family formation outcomes, but its more detailed employment information also enables us to investigate the drivers of the changes.

We conduct our analysis using descriptive statistics and correlational regressions. We find increasing polarization of the labor market and family formation outcomes among college graduate women from the younger birth cohorts. The younger birth cohorts tend to

[5] See Cameron (2023); Cameron et al. (2019, 2023); Schaner and Das (2016)

have a higher inclination towards work. Yet, at the same time, we are witnessing a paradox: more young college graduate women delay family formation, while those who do not delay tend to start their family earlier. We offer two potential explanations for this trend. First, more college graduate women managed to penetrate prestigious and time-demanding career positions previously dominated by men. Second, we observe rising conservatism among youth and conjecture that this trend might have disrupted the marriage market and hampered family formation.

The rest of the paper is organized as follows: Section 2 details our data and analytical framework. Section 3 elaborates on our results. Section 4 discusses the potential drivers of the results. Section 5 summarizes the paper.

2. Methodology

2.1. Data

We utilize rich datasets from Indonesia's National Labor Force Survey (Sakernas), National Socioeconomic Survey (Susenas), and Indonesia Family Life Survey (IFLS). Complementary data from the World Values Survey (WVS) help us explore the drivers and mechanisms for these shifting preferences.

Statistics Indonesia produced the Sakernas and Susenas data. The agency designated the former to closely monitor labor market dynamics and the latter to monitor demographic and socioeconomic indicators, such as fertility, migration, consumption, and poverty. As such, Sakernas has more granular information about employment, while Susenas holds more variables for family and household arrangements. Currently, both surveys run twice a year. One of the rounds has a larger sample size to represent the second subnational level (district) variations. Yet the early iterations of the surveys only ran once a year. We use 1986-2023 Sakernas and utilize both biannual rounds whenever available. As for Susenas, we use data from 2023.

We complement the analysis with IFLS, a longitudinal survey that tracked the panel household since its first wave in 1993. Since then, there have been four follow-up surveys in 1997, 2000, 2007, and 2014. The survey is representative of the 83% population in the 13 sample provinces in 1993 (Strauss et al., 2016). It contains abundant detailed information about households and individuals on various aspects of life.

WVS is a cross-country survey about people's views and beliefs on a wide range of topics, including politics, culture, religion, and family. We use all three available data rounds for Indonesia: Wave 4 in 2001, when the country was first surveyed, Wave 5 in 2006, and the most recent Wave 7 in 2018. Like Sakernas and Susenas, WVS is a repeated cross-section and nationally representative survey.

2.2. Analytical framework

2.2.1. Descriptive statistics

Following Goldin (2021), our analytical approach examines the changing dynamics of family formation and labor outcomes across generations or birth cohorts.[6] Given that women's economic participation is highly contingent on their family situations, cohort analysis allows us to separate life cycle effects on labor market outcomes (Cameron et al., 2019).

We focus on the college graduate women of the post-independence generations until the most recent birth cohorts, that is, 1950s-1990s birth cohorts. For each birth cohort, we observe their outcomes in four stages of their productive age: during their late 20s (25–29-year-olds)[7], their 30s, 40s, and 50s. We apply this sample construction to Sakernas, Susenas, and IFLS. For WVS, since we are interested in the overall societal values and beliefs, we do not restrict the sample to college graduates, although we still observe the same birth cohorts and age groups in this data. Table A1 in Appendix A provides the total sample size across data sources based on this sample construction.

The way we construct the birth cohort varies depending on the sample size of the data. For IFLS and WVS, owing to the smaller sample size, we categorize the birth cohort into 10-year bins. We do not group the birth cohort for Sakernas and Susenas as the large sample size allows us to use each birth year as a birth cohort.[8]

We use marital status as our main indicator of family formation. Typically, there are two proxies to family formation: marriage or childbearing. There are several reasons why we chose the former as the main indicator. To begin, Sakernas and Susenas only ask childbearing

[6] Two other studies have implemented a similar analytical approach to the general women population in Indonesia (Cameron et al., 2019; Dong and Merdikawati, 2023).

[7] People typically graduate college in their early 20s. Other studies like Cameron et al. (2019) have also noted that age 25 is typically the critical juncture when women's LFP peaks and they start switching to childrearing responsibilities.

[8] Due to data availability, some cohorts have more limited data points. For example, since our data starts in the 1980s at the earliest, we can only observe the 1950s birth cohort from their 30s onwards.

questions to ever-married women. As such, focusing on childbearing would lead to a more restrictive and, worse, inaccurate definition of family formation. Only IFLS ask childbearing questions to any woman over 15 years old. Furthermore, we argue that marital status is a more appropriate indicator of family formation in developing countries. Traditional norms are still prevalent in Indonesia. There is still a high expectation that married women should take care of household duties regardless of the presence of children and that couples should marry to have children. As such, if we focus on marital status as the indicator of family formation, we are likely to capture childbearing preference as well to a certain extent. In Figure A1 in Appendix A, we show several WVS statistics supporting this argument.

2.2.2. Regression

We perform correlational regressions to verify the descriptive findings. This exercise uses Sakernas data because it has the largest sample size and the most complete variables. Our primary interest is testing whether labor and family outcomes of college graduate women differ by birth cohorts. Since Sakernas surveys different individuals each year, our dataset is essentially pooled cross-sections. We write our estimation model in Equation 1.

$$Y_i = \beta_i + \tau_i BIRTH_i + \delta_i AGE_i + \theta_i RURAL_i + \pi_i YEAR_i + \sigma_i PROV_i + \varepsilon_i \quad (1)$$

Y_i is the outcome variable that represents labor market and family formation preference. $BIRTH_i$ is our main variable of interest, the birth cohort. We group the birth years into bins and treat each bin as a dummy because the effect of the birth cohort on the outcome is unlikely to be linear. For robustness check, we conduct separate estimations using the 5-year bins and also the 10-year bins birth cohort. This makes τ our coefficient of interest. AGE_i is a set of age group dummies. $RURAL_i$ is a dummy for living in a rural area, $YEAR_i$ is the year-fixed effect, and $PROV_i$ is province-fixed effect. ε_i is a regular idiosyncratic error.

We estimate Equation 1 using the linear probability model (OLS) as our main specification. Yet, we also estimate the equation with limited dependent variable models for sensitivity analysis. In this instance, we will use probit, logit, and multinomial logit. All of the estimators employ Huber-White's robust sandwich SE estimator. In the OLS, probit, and logit estimations, we conduct separate estimations for three outcomes: 1) unmarried and in the labor force, 2) married and in the labor force, and 3) married and not in the labor force.[9] Each outcome is a binary variable indicating the joint labor market and family situation that the

[9] We do not perform regression on unmarried and not in labor force conditions. As we've seen in the descriptive statistics, this preference combination is highly uncommon among college graduate women.

observation is currently in. As for the multinomial logit, Y_i is a categorical variable that takes on four values representing the four states of labor market and family outcome combination. In OLS, we will compare the relative probability of being in a certain labor market and family state against the oldest cohort. In the limited dependent variable models, we will report the predicted probabilities for each cohort for ease of interpretation.

We also implement the same framework for similar outcomes for the robustness test and for the exploration of one of the potential drivers. Instead of labor force participation, we substitute the labor market outcome with being employed for the sensitivity test of the main result. In Section 4.1, we substitute labor force participation with being in a time-demanding-high-skilled occupation to investigate it as one of the potential drivers of the main result.

3. The changing labor market and marriage preference

3.1. Descriptive statistics

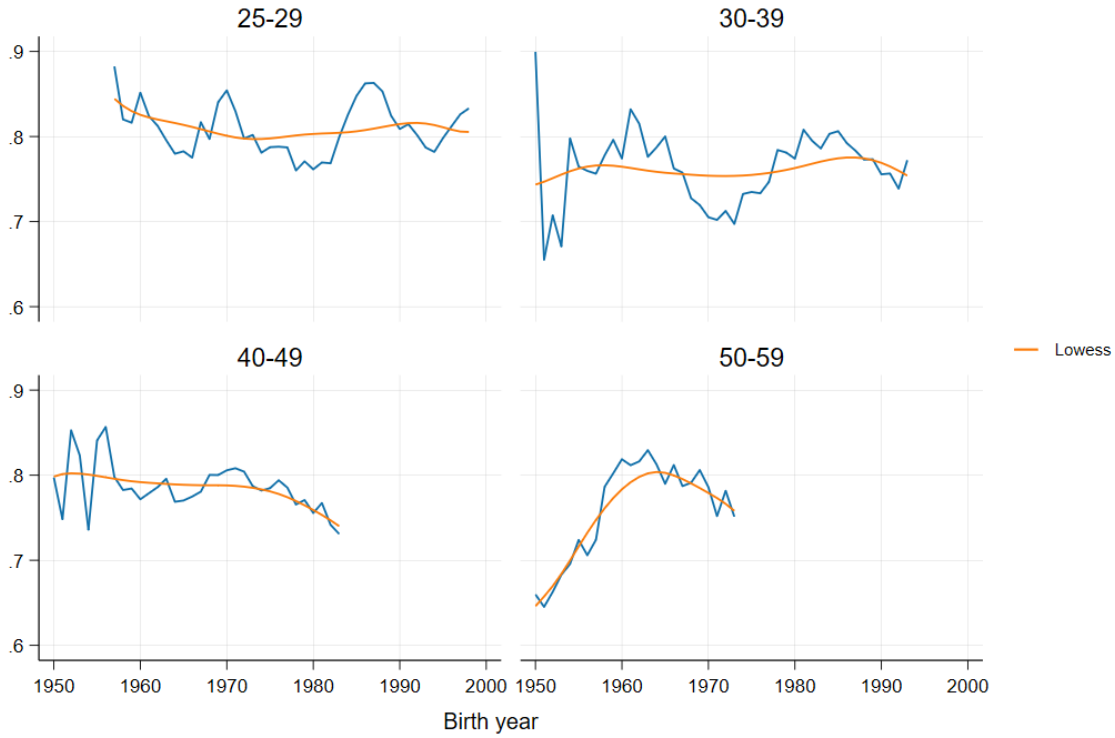
We begin our analysis by examining the descriptive statistics. We will review the trend of labor force participation and married rate across birth cohorts and age groups.

Figure 2 depicts that during the late 20s and 30s age group, labor force participation of college-graduate women does not change significantly across the birth cohorts, as it tends to revolve around 70-80%. Across birth cohorts, labor market exit occurs as college graduate women move from their late 20s to their 30s. This is indicated by the overall lower orange line in the 30s age group panel than the same line in the late 20s age group panel.

However, the rate of labour market exit in the 30-year-old age group has fluctuated between birth cohorts. Within a certain age group, compared to the other cohorts, a downward trend of labor force participation indicates a higher labor market exit, and an upward trend indicates otherwise. As such, the 1960s birth cohort has a higher rate of labor market exit in their 30s, while the 1970s offset this change. In the 1980s birth cohort, the labor market exit rate rises again but only slightly. The 1990s birth cohort, based on the available data so far, seems to experience a falling rate of labor market exit in their 30s.

Labor force participation across birth cohorts of college graduate women fluctuates much less in the 40s age group. The most interesting observation in this age group is the labor market reentry among the mid-1960s to mid-1970s birth cohorts. Unlike other birth cohorts, labor force participation of these cohorts is higher in their 40s than in their 30s.

Figure 2: Labor force participation of college graduate women by birth cohort and age group



Source: Author's calculation using Sakernas

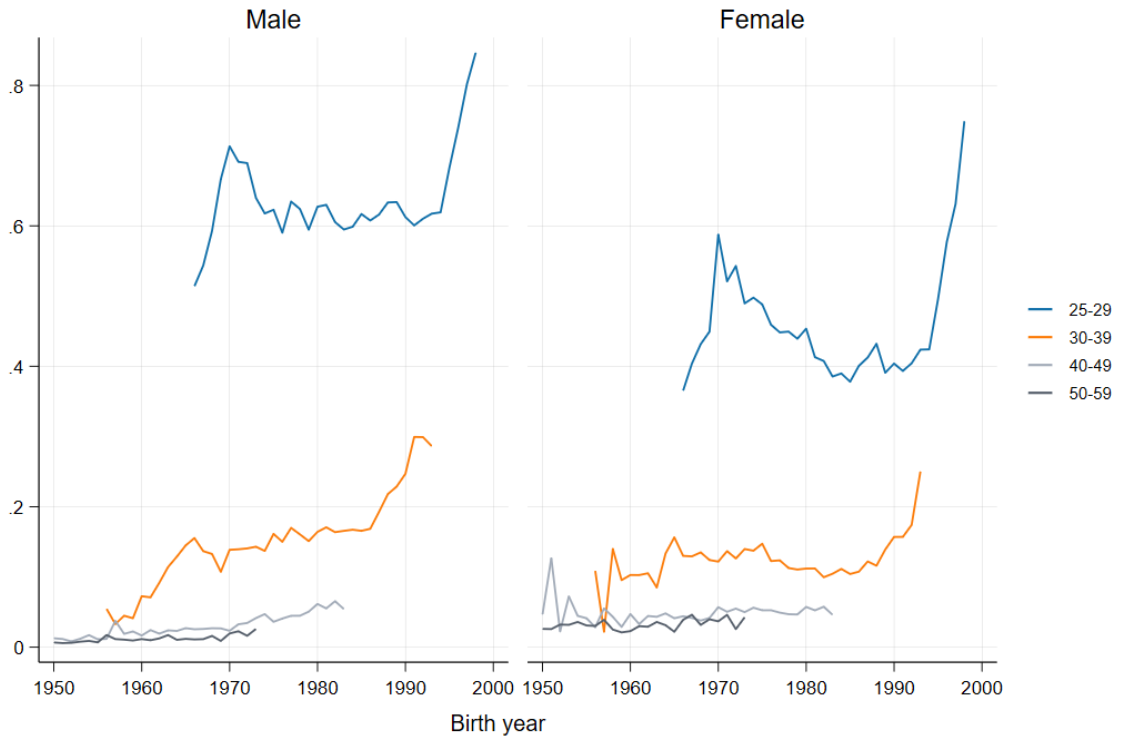
Meanwhile, labor force participation of the 1950s birth cohort in the 50s age group exhibits an upward trend. Yet, the trend plateaued by the 1960s birth cohort and even began declining.

We now turn to our primary family formation outcome: marriage. Figure 3 shows how marriage preference changes between birth cohorts. In analyzing this figure, it is important to pay attention to the distance between the lines. People are more likely to be married as they age; hence, the lines for the older age group are lower. Therefore, the distance between the lines represents the rate of marriage delay from one age group to the next. Widening distance means more people delaying their marriage.

It is visible that the rate of marriage delay in the late 20s was rising among college graduate women from the 1960s birth cohort. From the 1970s to the mid-1980s birth cohort, the rate of marriage delay in the late 20s fell, which indicates a higher percentage of the women in these cohorts are already married by this age. The trend reversed again from the

1990s birth cohort onwards, reaching an all-time high rate of unmarried college graduate women in the youngest cohort.

Figure 3: Fraction of college graduates unmarried by age group and birth cohort



Source: Author's calculation using Sakernas

After a relatively flat line from the 1960s to the 1980s birth cohorts, the rate of unmarried college graduate women in their 30s rises in the 1990s birth cohort. This fascinating pattern implies that college graduate women of the youngest cohort might delay their marriage even longer beyond their 30s.[10]

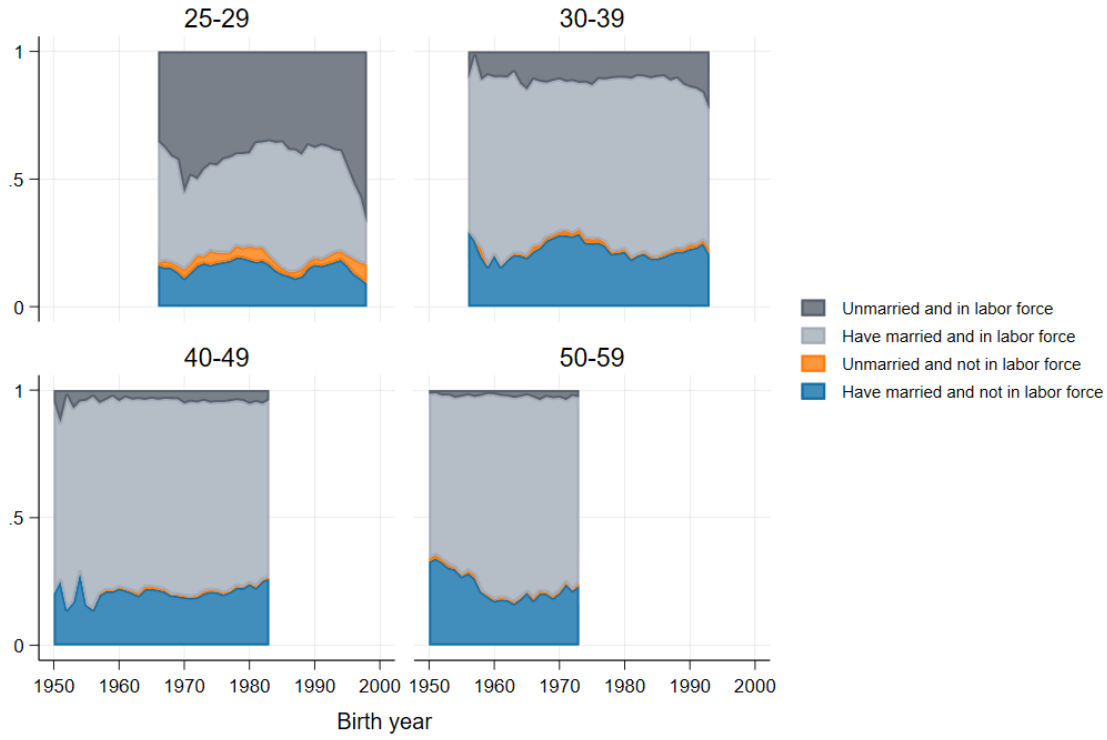
Once we hit the 40s and 50s age group, there is no visible difference between the birth cohorts or even between the two age groups. This suggests that most of the dynamics occur in the younger age group. Once they enter the older age group, people generally settle into families, and any new dynamics become increasingly unlikely.

However, it is interesting to observe that while the fraction of college-graduate men unmarried in their late 20s is higher than that of their women counterparts, the fraction of unmarried college-graduate women ended up being marginally higher than that of men in the

[10] In a few years, we'll have the data to observe the rate of unmarried among the 1990s birth cohort in their 40s. However, the recent trends are not so encouraging. See Wisana and Setyonaluri (2024)

older age group (40s and 50s). This might suggest that men are more likely to marry than women throughout their lifetime. To ease the visual inspection, we provide an alternative display of the same statistics in Figure B1 in Appendix B.

Figure 4: Evolution of marriage and labor market preference among college-graduate women by age group and birth cohort



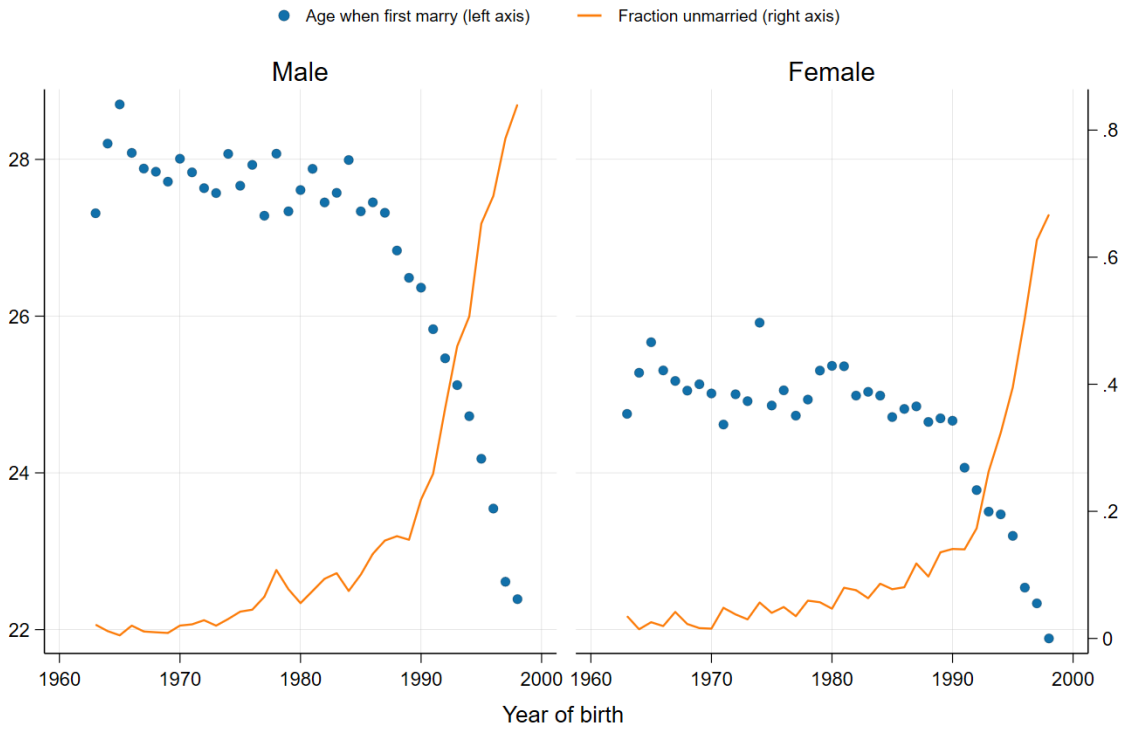
Source: Author's calculation using Sakernas

To capture the combined labor market and family preference, we plot the fraction of college graduates who are unmarried and in the labor force in each birth cohort and age group in Figure B2 in Appendix B. The figure closely tracks the shape of the unmarried rate in Figure 3. This suggests that most unmarried college graduates are in the labor force. The figures we've examined so far seem to suggest that the younger cohorts are more inclined towards work than family.

We turn to Figure 4 to better capture the labor market and marriage preference. The figure shows the four possible preference combinations for the labor market and marriage. The grey areas indicate those in the labor force. It then allows us to disaggregate the marital status of those in the labor force.

Figure 4 provides several key takeaways. First, most unmarried people are indeed in the labor force. The sum of the dark grey and orange areas gives the unmarried rate. In any age group, the size of the orange areas, which represent those unmarried and not in the labor force, is negligible. Second, again, the dark grey area, which represents those unmarried and in the labor force, resembles the inverted shape of the unmarried rate in Figure 3. Third, most dynamics revolve around the composition of those in the labor force (grey areas). In any age group, the size of the non-grey areas tends not to change significantly across the birth cohorts. However, within the grey areas, there are noticeable changes in the composition of dark (unmarried) and light (have married) areas across the birth cohorts. Most notably, in any age group, the dark grey areas become more prominent in the younger cohorts. This supports the observation of a higher inclination towards work among the younger cohorts.

Figure 5: Marital preference of college graduates in 2023 by birth cohort



Source: Author's calculation using Susenas

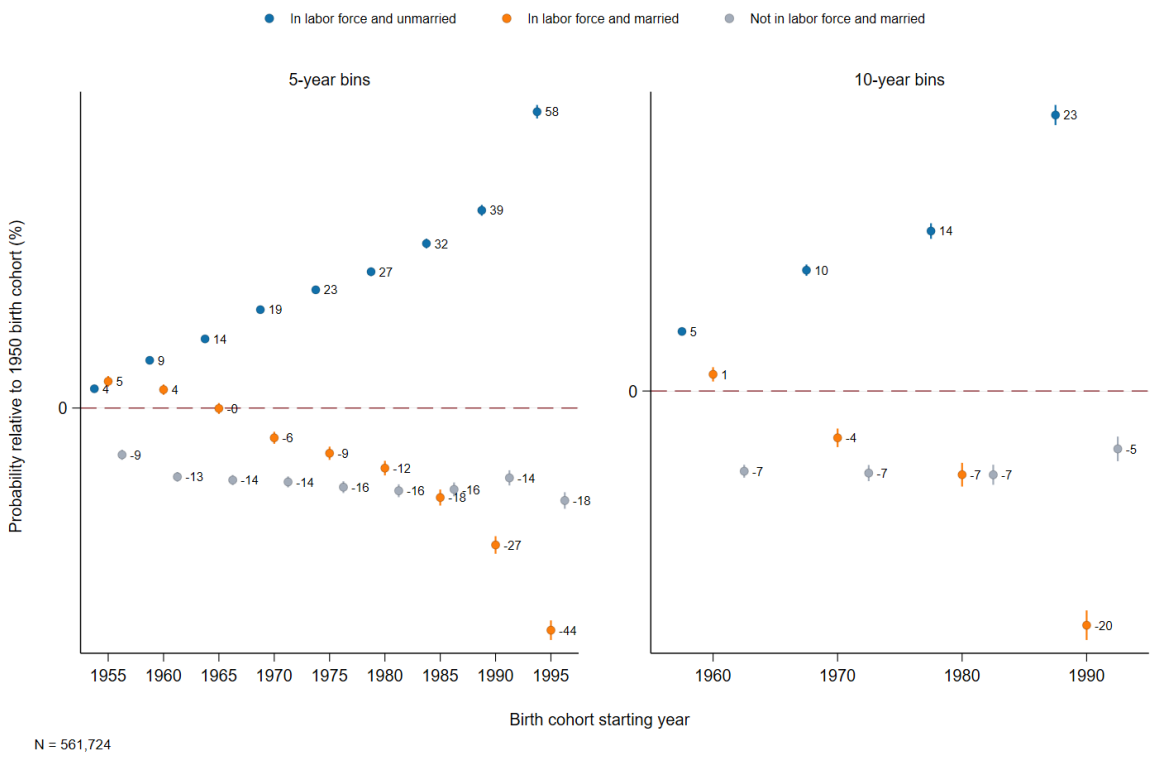
The rising rate of unmarried among the younger cohorts is an interesting phenomenon, especially against the backdrop of the declining age of first marriage. Figure 5 plots the age during the first marriage in the left Y-axis overlaid with the rate of unmarried in the right Y-axis by birth cohort. As we've seen, the younger cohorts have a higher unmarried rate. Yet,

those who decide to marry tend to marry earlier. This speaks to the growing polarization of the labor market and family formation outcomes of the younger cohorts.

3.2. Regressions

We perform several regressions to verify this pattern. To start, let us observe the estimation result of Equation 1 using the linear probability model (OLS). In Figure 6, we plot the coefficient of our main variable of interest, the birth cohort, and the 95% confidence interval.[11]

Figure 6: OLS coefficient of birth cohort effect on labor market participation and marriage preferences



Source: Author's calculation using Sakernas

The regression results confirm the pattern we've seen in the descriptive statistics. However we divide the birth cohorts, we find that the probability of participating in the labor force while being unmarried is higher in the younger cohorts relative to the base cohort of comparison (blue dots). There is no birth cohort with a lower probability than the base cohort.

[11] We exclude the coefficient related to not being in the labor force and unmarried in the regression results. As we've seen in the descriptive statistics, this preference combination is highly uncommon among college graduate women.

The rise in probability is monotonic, as each younger cohort has a higher probability compared to the base cohort than the previous one. In the 5-year bins of birth cohort, the youngest cohort is 58 percentage points more likely to be in the labor force and unmarried than the base cohort. This effect is smaller in the 10-year bins, only 23 percent, but remains substantial nonetheless. All of the coefficients are statistically significant at the 1% level.

The coefficient for the married and in the labor force outcome (orange dots) almost resembles a mirror image of the unmarried and in the labor force outcome. Except for the 1960s cohorts, as each successive cohort become more likely to be unmarried and in the labor force, they also become less likely to be married and in the labor force compared to the base cohort. The youngest birth cohort is 44 and 20 percentage points less likely to be married and in the labor force than the base cohort in the 5-year and 10-year bins of birth cohorts, respectively. Almost all of the coefficients are statistically significant at the 1% level.

We also find a result that is consistent with the findings of Cameron et al. (2019) who found that younger cohorts of women are more likely to participate in the labor market. We now confirm the same pattern using joint outcomes and a different dataset. In the 5-year and 10-year bins of birth cohorts, we find that the younger cohorts are less likely to be married and not in the labor force (grey dots) than the base cohort. The pattern we've observed seems to suggest that college-graduate women are making huge strides in the labor market. Yet, it seems to have come at the cost of a delayed family formation.

We regress the same set of outcomes for robustness check using limited dependent variable models (probit, logit, and multinomial logit). We report the results in Figures C1, C2, and C3 in Appendix C. All of the figures display a similar pattern to the OLS result. Furthermore, the advantage of these models is that they enable us to compare the predicted probabilities of the three labor market and family outcomes directly across and within each birth cohort. The probability of being married and participating in the labor force in all the models starts very high in the older cohorts. Likewise, the probability of being unmarried and participating in the labor force is very low in the older cohorts. As this probability rises, the probability of being in the labor force and married falls. In the 5 year-bins, the probability of being unmarried and in the labor force has overtaken the probability of being married and in the labor force by the 1995-1999 birth cohort.

We apply the same estimation framework for further robustness checks on a similar outcome. Instead of labor force participation, we substitute the labor market outcome with

whether the observation is employed. This variable construction places a higher threshold on labor market outcome and thus makes it more restrictive. We report the results in Figures C4, C5, C6, and C7 in Appendix C. We generally find the same pattern with our main results. The regression results seem to suggest that the younger cohorts of college graduate women are less able or less willing to attain both family and labor market goals at the early stage of their professional lives.

4. Potential drivers

In this section, we offer some potential hypotheses that might explain the results. We have identified two plausible factors driving the phenomenon: college-graduate women of the younger cohorts have a higher orientation towards careers, and rising conservatism might have disrupted the marriage market.

4.1. Breaking the glass ceiling in career building

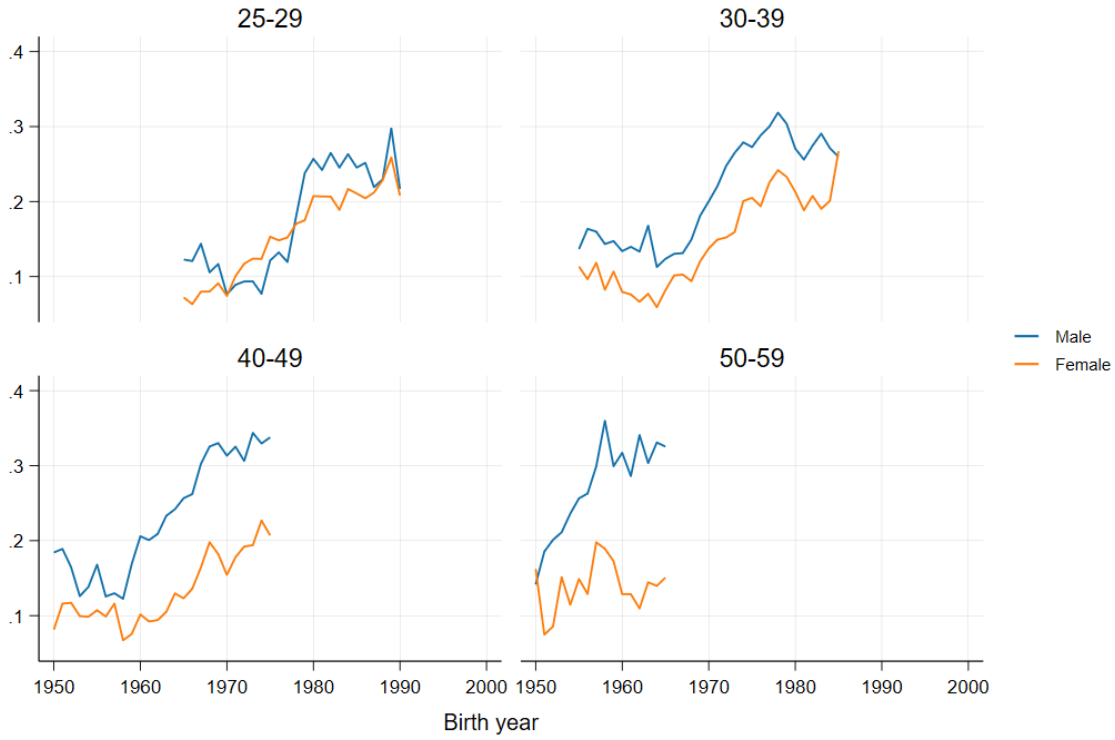
Following Goldin (2021), we investigate how time-demanding, high-skilled occupations have changed the labor market and family formation preference of college graduate women. While Goldin (2021) specifically focuses on "greedy work" – i.e., occupations with irregular and extreme work hours, such as lawyers — our study is less restrictive in terms of definition. First, we follow ILO's classification of high-skilled occupations (ILO, n.d.). Using this classification, we plot the distribution of work hours in each occupation from 1995-2015[12] in Figure D1 in Appendix D. We determine that high-skilled occupations in the field of education and religion (teachers, preachers) are not time-demanding given the substantial share of workers working less than 35 hours per week and a small share of workers working more than 45 hours per week. We include the rest of the occupations as time-demanding, high-skilled work.

We start by analyzing how present college graduate women are in these occupations. Figure 7 shows that the younger cohorts of college-graduate women are closing the gap against men in time-demanding, high-skilled occupations in any age group. In the late 20s and 30s age group, the share of college graduate women in time-demanding, high-skilled occupations is almost no different from that of men. In Figure D2A in Appendix D, we show that college graduate women increasingly enter high-skilled, time-demanding occupations in fields where men traditionally dominate. These jobs naturally command higher wages. In

[12] These are the Sakernas years when at least a two-digit occupation code is available. We need at least a two-digit occupation code to make skill-based categorization.

Figure D2B, we show that younger cohorts of college-graduate women working in time-demanding, high-skilled jobs are consequently narrowing the income gap with men.

Figure 7: Fraction of college graduates in high-skilled, time-demanding occupations by birth cohort and age group



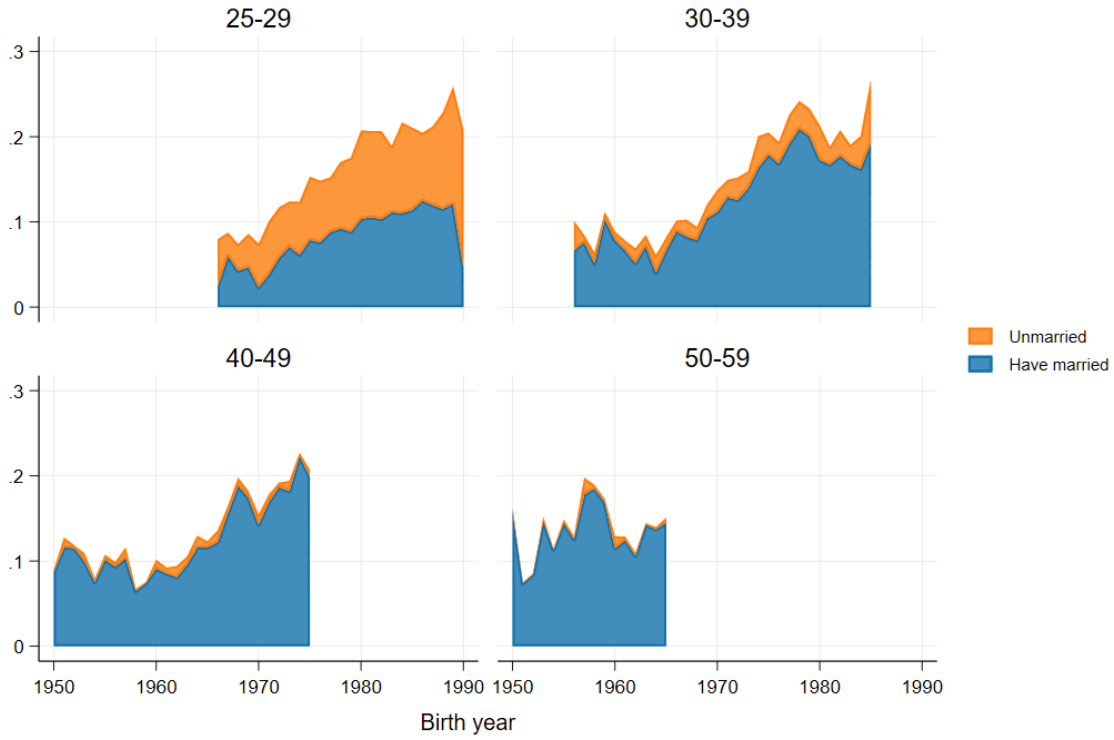
Source: Author's calculation using Sakernas

The trend that college graduate women are increasingly entering time-demanding, high-skilled occupations at such a young age coincides with the falling marriage and childbearing age. Turning to IFLS data, we show in Figure D3 in Appendix D that the age of starting a time-demanding high-skilled occupation has fallen alongside the age of starting a family.

This correlation seems to suggest that college-graduate women can increasingly attain family and professional goals. However, if we dig deeper, unmarried college-graduate women are actually a substantial factor driving this labor market breakthrough. Figure 8 shows that their contribution to penetrating high-skilled, time-demanding occupations becomes increasingly pronounced in the younger cohorts, especially in the late 20s age group. The trend that young unmarried college graduate women increasingly occupy time-demanding high-skilled occupations, especially those traditionally dominated by men, while those who

start a family choose to start it earlier provides another support to the idea of the growing polarization of family and labor market outcomes among younger college graduate women.

Figure 8: Marital status of college graduate women working in time-demanding high-skilled occupations by birth cohort and age group

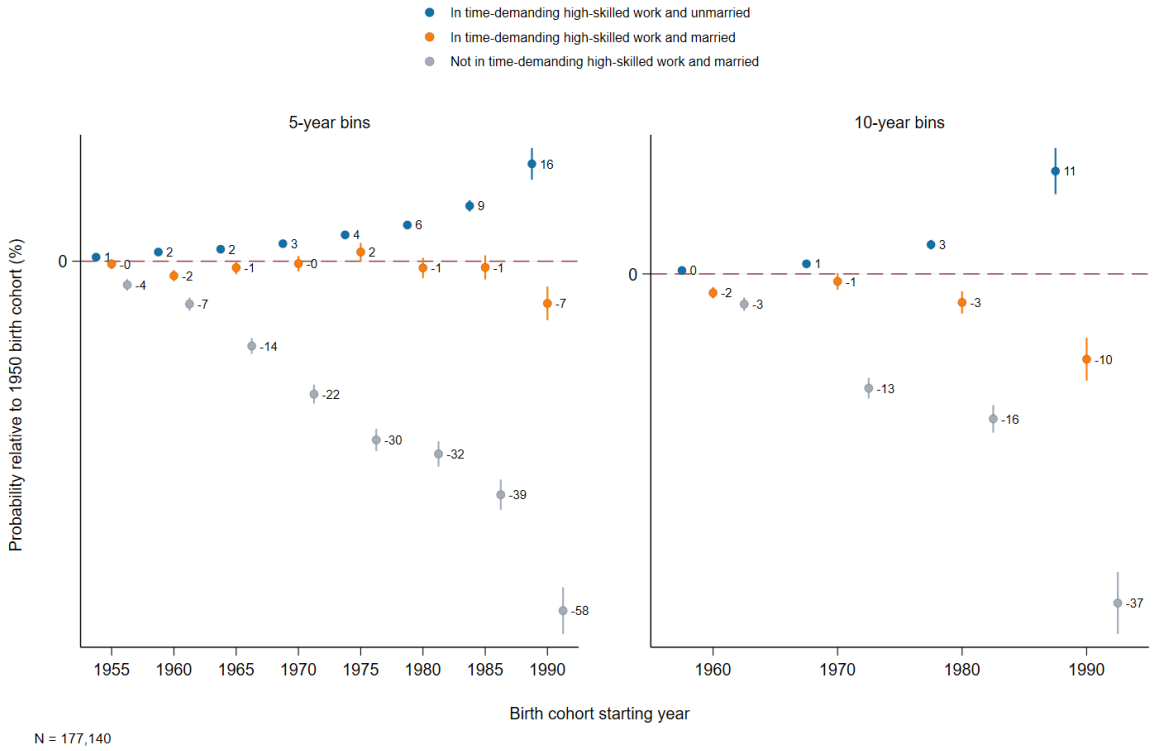


Source: Author's calculation using Sakernas

To verify this pattern, we again conduct several correlational regressions using the framework of Equation 1. Instead of labor force participation or employment status, we substitute the labor market outcome with whether the observation works in a time-demanding, high-skilled occupation. We report the OLS result in Figure 9.

The blue dots show that the probability of working in a time-demanding, high-skilled job while unmarried is higher in the younger cohorts. Likewise, the orange dots show that the probability of working in a time-demanding, high-skilled job while married tends to be lower in the younger cohorts, although not as pronounced as in the main outcome. The grey dots indicate that the probability of not working in a time-demanding, high-skilled job while married falls in the younger cohorts. This is consistent with the notion that the younger cohorts are increasingly working in those jobs. The results for limited dependent variable models in Figures D4, D5, and D6 in Appendix D tell the same story.

Figure 9: OLS result of birth cohort effect on time-demanding high-skilled work and marriage preferences



Source: Author's calculation using Sakernas

As a robustness check, we also investigate if the unmarried college graduate women of the younger generations just work longer hours, regardless of the job's skill level. We find this is the case in Figures D7 and D8 in Appendix D. Both figures show that the share of unmarried college graduate women working 35-45 hours per week (full-time employment/FTE) and more than 45 hours per week (overtime) in their late 20s and 30s is rising in the younger cohorts.

To firm up these findings, we conduct several more regressions using the framework of Model 1. This time, we focus on just two binary outcomes for each working hour category of interest. They are the probability of working in FTE or overtime while unmarried and the probability of working in FTE or overtime while married. In Appendix D, we report the OLS, probit, and logit results in Figures D9, D10, and D11 for the FTE results and Figures D12, D13, and D14 for the overtime results. All the regression results show that younger cohorts are more likely to work in FTE or overtime while unmarried. The probability of working in FTE while married is relatively constant across the cohorts, while the probability of working overtime while married tends to decline in the younger cohorts.

4.2. Rising conservatism

A large body of literature has discussed the plausible causes behind why the pursuit of professional goals and family formation are still at odds in Indonesia despite major economic progress. Studies have offered various explanations, ranging from inflexible working arrangements, limited childcare options, and traditional social norms (Cameron, 2023). These reasons usually lead women to abandon their professional goals and focus solely on family. Yet, what we have observed so far in this study, especially in the younger cohorts, seems to be the reverse. The younger cohorts of college graduate women delay family formation to ascend the career ladder.

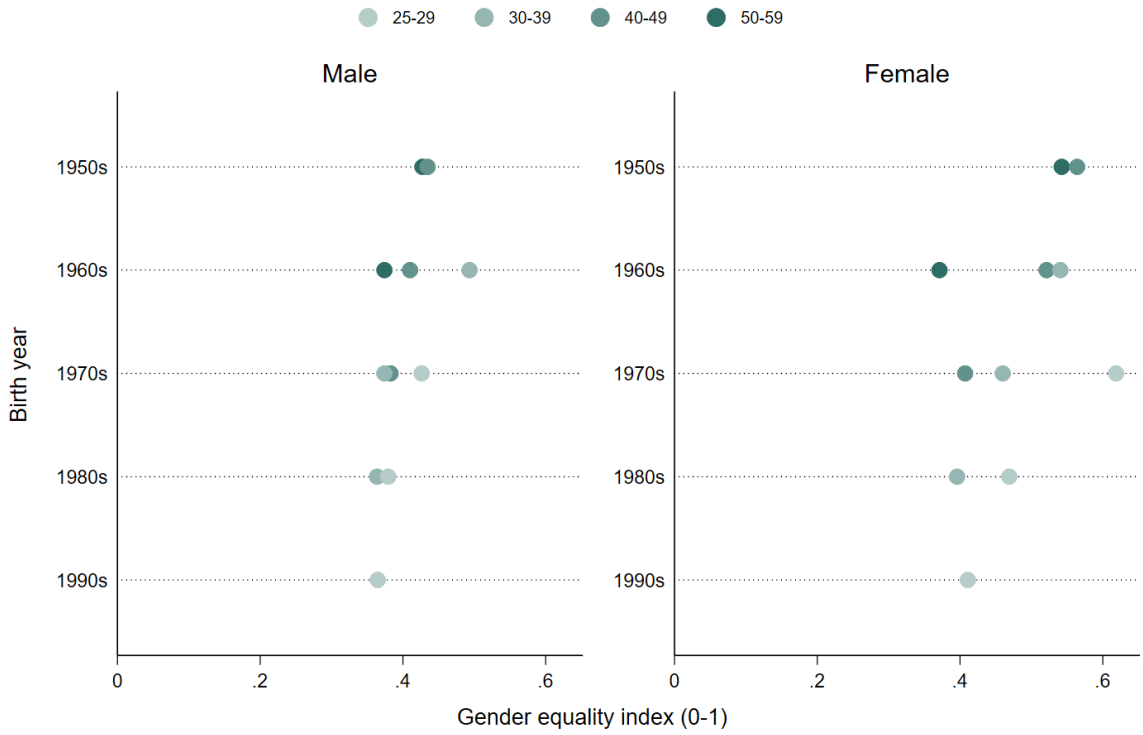
It is, therefore, necessary to formulate a new conjecture that might explain this new trend. In line with reports of falling marriage rates in Indonesia (Wisana and Setyonaluri, 2024), there might be disruptions contributing to the failure of the marriage market. We posit that this disruption is the rising conservatism of gender norms among youth. We now turn to WVS data to explore this idea, which can help us understand prevailing societal values and beliefs.

We begin by reviewing the overall shift in gender views and beliefs among the general population in Figure 10. Note that the age group starts with lighter dots, which progressively become darker as the units get older. The figure shows that the gender equality index[13] tends to fall in the younger cohort, as shown by the left-ward movements in the plots as the cohort gets younger. This trend is most apparent in the male sample. Each successive cohort also tends to start out more conservative in their youth. Men born in the 1990s are slightly more conservative in terms of gender views during their late 20s than the men born in the 1950s during their 50s. This is shown by the lighter dot in the 1990s birth cohort being slightly more to the left than the darker dot in the 1950s birth cohort.

A similar trend is also visible among the women. However, there is more variability in the evolution of gender norms among women. In addition, the dots for women in any birth cohort or age group tend to be slightly more to the right (higher gender equality score) than men.

[13] The gender equality index was constructed based on three questions related to gendered views and beliefs about jobs, political participation, and education. It ranges from 0 to 1. A higher value represents greater equality. Please see Welzel (2013) for detailed notes.

Figure 10: Gender equality index among the general population by birth cohort and age group



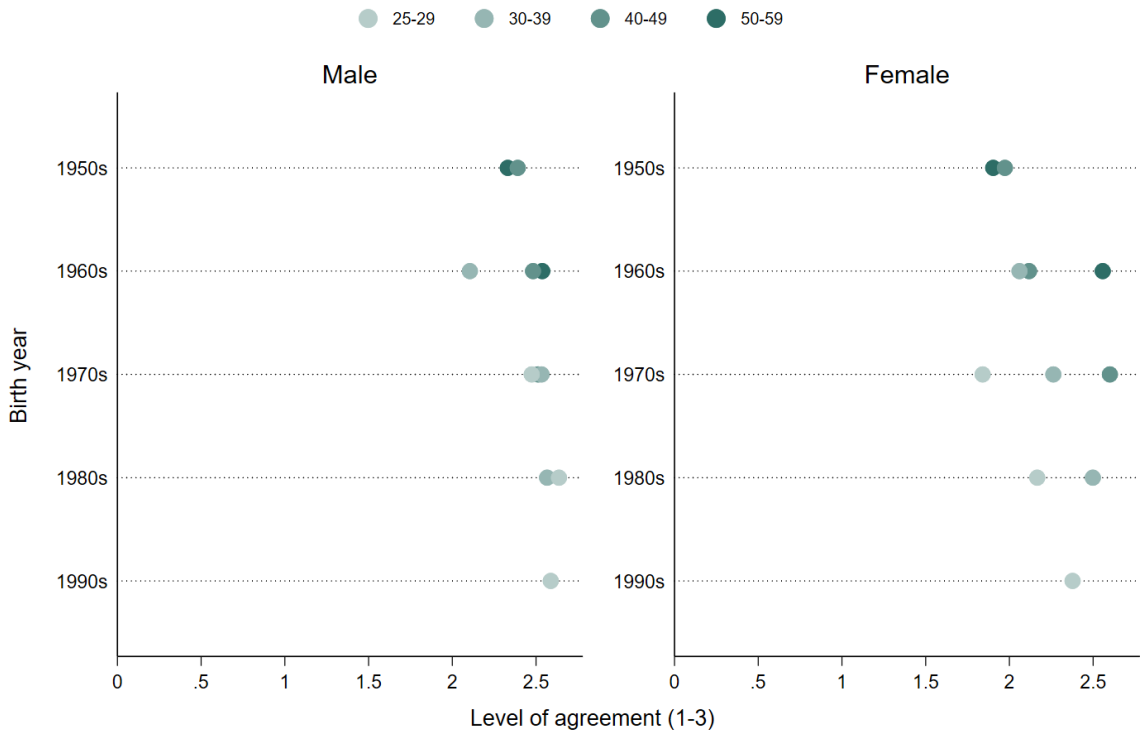
Source: Author's calculation using World Values Survey

For robustness, we plot the same graph but restrict the data to only college graduates in Figure E1 in Appendix E. We still find a similar rising conservatism pattern even among college graduates. However, the direction of the gender score evolution as each cohort age is less predictable than the general population sample. Each cohort tends to gradually become more conservative as they age (as shown by the presence of darker plots that are more to the left than the lighter ones) in the general population. In the college graduate sample, some cohorts (the 1970s-1980s men and 1950s-1970s women) tend to become more progressive in gender norms as they age.

We present another statistic to illustrate this point. The gender equality index consists of question items related to political participation, which might be less relevant to our discussions here. In Figure 11, we focus on one of the components that specifically examine beliefs about economic rights. The figure shows that the younger cohorts have a higher inclination to agree that men should have more rights to a job than women when jobs are scarce. The dots tend to exhibit right-ward shifts as we move down to the youngest birth cohort. This again shows that each successive cohort tends to start out in life with more

conservative baseline views than the previous ones. In Figure E2 in Appendix E, we again show that the same pattern largely holds in the college graduate sample. In both samples, the women again exhibit more variability in gender views than men.

Figure 11: Response to the statement "When jobs are scarce, men should have more rights to a job than women" among the general population by birth cohort and age group



Source: Author's calculation using World Values Survey

Nevertheless, there is also some nuance in the evolution of gender views; namely, women do not always become more conservative on all issues. In Figures E3 and E4 in Appendix E, we display opinions on two gender topics that are only available in WVS Wave 7. In E3, we show that the younger cohorts of the general male population have a higher degree of agreement that young children will suffer if their mothers are working and a woman earning a higher income than her husband will lead to a problem. This contrasts with the women, whose degree of agreement tends to be lower in the younger cohort. We find a similar pattern with male college graduates in E4, although the youngest cohort seems more receptive to women having a higher income than their husbands. The pattern among female college graduates again showcases some interesting variability. Some of the younger cohorts

have more conservative views on these topics. Yet, the youngest cohort tends toward progressiveness.

Like the previous sections, we also conduct regressions to verify this pattern. However, we employ a slightly modified estimation strategy here. We present the estimation model in Equation 2. We use the two gender belief variables we've discussed, the gender equality index, and a dummy equal to one if the respondent agrees to "When jobs are scarce, men should have more rights to a job than women" as the outcomes of this estimation. We run OLS separately for the general population and college graduate sample. We regress on the male and female in each sample set separately to obtain the cohort effect among the subgroups.

$$Y_i = \beta_i + \tau_i BIRTH_i + \delta_i AGE_i + \theta_i EDU_i + \pi_i YEAR_i + \varepsilon_i \quad (2)$$

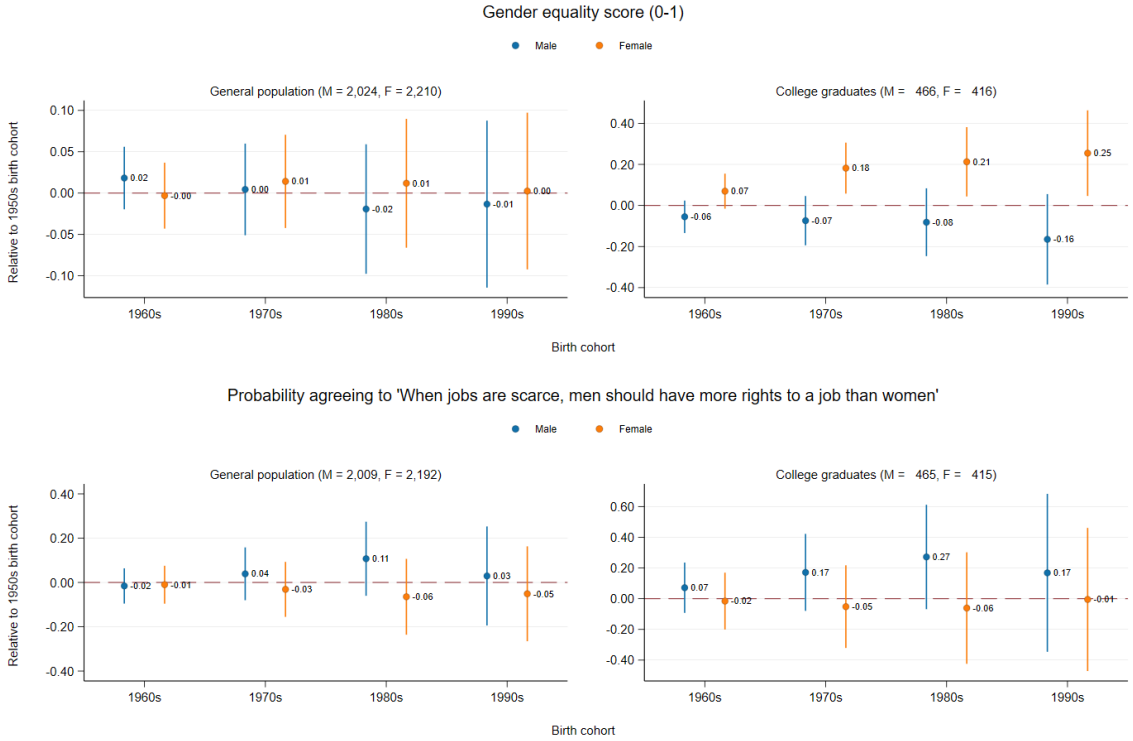
The model from Equation 2 and Equation 1 differ only in two ways. First, we replace RURAL with EDU, a vector of dummies for four educational levels: no education/lower than primary, primary, secondary, and tertiary.[14] We do this because the rural/urban indicator is not available in the WVS data, and education is an important predictor of gender beliefs. Second, we do not have province fixed-effect because geographical indicators are not always available in every WVS wave.

Figure 12 summarizes the estimation results. In the blue dots on the top left panel, we find that the gender equality score is lower among younger cohorts of the general male population compared to the base cohort. As for the general female population in orange dots of the same panel, we find that the gender equality score is slightly higher in the younger cohorts. The coefficients reflect the descriptive results, although, unfortunately, none are statistically significant.

We can also observe the same pattern of falling gender equality scores in the younger cohorts of male college graduates (blue dots, top right panel). The magnitude of the fall is even larger than in the general male population. Yet again, none of these coefficients are statistically significant. Interestingly, the gender equality score exhibits statistically significant improvement among younger cohorts of college graduate women, the focus subject of this paper.

[14] EDU term will automatically drop in the college graduate estimation.

Figure 12: OLS result of birth cohort effect on gender views and beliefs



In the second outcome on the bottom panel, we generally find the same diverging pattern among men and women. The younger cohorts of both the general and college-graduate male population are more likely to agree that men should have more rights to a job than women when jobs are scarce. Meanwhile, mirroring the descriptive result, the female counterpart seems to be less likely to agree with this notion. However, we cannot reject the null that the difference is statistically significant.

5. Discussions

Our findings speak to the broader literature on marriage dynamics. Our Sakernas analysis seems to complement Bertrand et al. (2015) and Folke and Rickne (2020), which have empirically shown that, to everyone's dismay, women may forgo career promotion opportunities that would eclipse their husband's career stage or earnings to maintain marriage harmony.

Our WVS regression analysis reveals results that are largely in line with the descriptive story, which is that there is a rising conservatism of gender views among younger cohorts of men. This finding enriches the analysis brought by Setyonaluri et al. (2021), which found that urban young men are receptive to women working as long as they put their household duties

first and foremost. While the finer details are different, this finding also bears a resemblance to the global trend of ideological divergence between young men and women. Studies have found that young men are becoming more conservative while young women are becoming more progressive (Burn-Murdoch, 2024).

We offer two possible channels in which rising conservatism might affect family formation decisions. We base our hypothesis on the assumption that women, especially college graduate women, are aware of the prevailing societal values and beliefs. Findings from Cameron et al. (2024) support this assumption, as people can correctly guess men's level of support for married women working outside the house. Knowing the direction of societal values and beliefs, more college-graduate women might delay tying the knot until later in life to allow them to progress in their careers first.[15] This is because they are aware that they must reallocate substantial time for domestic responsibilities once they start a family. If this is true, we should see that many younger cohorts will start a family in their 40s. This means the unmarried rate in the 40s age group should be relatively constant from the older to the younger cohorts. We should be able to observe this in five to ten years from now.

The second channel involves a bleaker future. Given rising conservatism among men in general and even among their male peers (see Figure E1), increasingly career-successful college graduate women might find it increasingly arduous to find a suitable marriage match. This marriage market failure might induce them to invest all focus on advancing in their professions. If this is true, equilibrium in the marriage market might take longer to converge. We will see the rate of unmarried among younger generations of college graduates in their 40s and even possibly 50s rising in a few years.[16]

6. Conclusions

This paper set out to investigate the evolving relationship between career aspirations and family formation among college-educated women in Indonesia, spanning birth cohorts from the 1950s to the 1990s. Our analysis reveals a growing polarization in the labor market and family outcomes among younger cohorts of female college graduates. Younger women

[15] This is a phase that Goldin (2021) described as "Career then family", where college graduate women delay marriage until later in life to progress in their career. This phase was the common trajectory of labor market and family formation outcomes among college graduate women who were born in the mid-1940s and 1950s in the US.

[16] Goldin (2021) termed this situation the "Career or Family" phase, and it was the common trajectory of labor market and family formation outcomes among college graduate women born in the late 19th century in the US.

increasingly face a dichotomy: either delaying marriage and focusing on career advancement or exiting the labor force upon marriage.

We find that younger generations of college-educated women have made substantial entry into high-skilled, time-demanding professions traditionally dominated by men. This development reflects an increasing prioritization of professional aspirations among unmarried women. On the other hand, those who choose family formation often do so earlier, suggesting a divergence of career and family paths.

We explored two potential drivers that underpin this trend. First, the growing presence of women in high-skilled, time-demanding jobs suggests that many are pursuing professional success at the cost of deferring or forgoing family life. Second, rising conservatism in gender attitudes, particularly among younger men, may be contributing to a disruption in the marriage market. This shift towards more traditional views on gender roles creates an environment in which successful, career-oriented women struggle to find partners who support their dual aspirations for work and family.

The implications of these findings are multifaceted. While increased female representation in high-skilled occupations signifies progress towards gender equality in the labor market, the associated delay or decline in family formation raises concerns about demographic trends and the well-being of women who may feel compelled to choose between career and family. Additionally, the resurgence of conservative gender norms could further complicate efforts to foster an environment conducive to work-family balance.

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Appendices

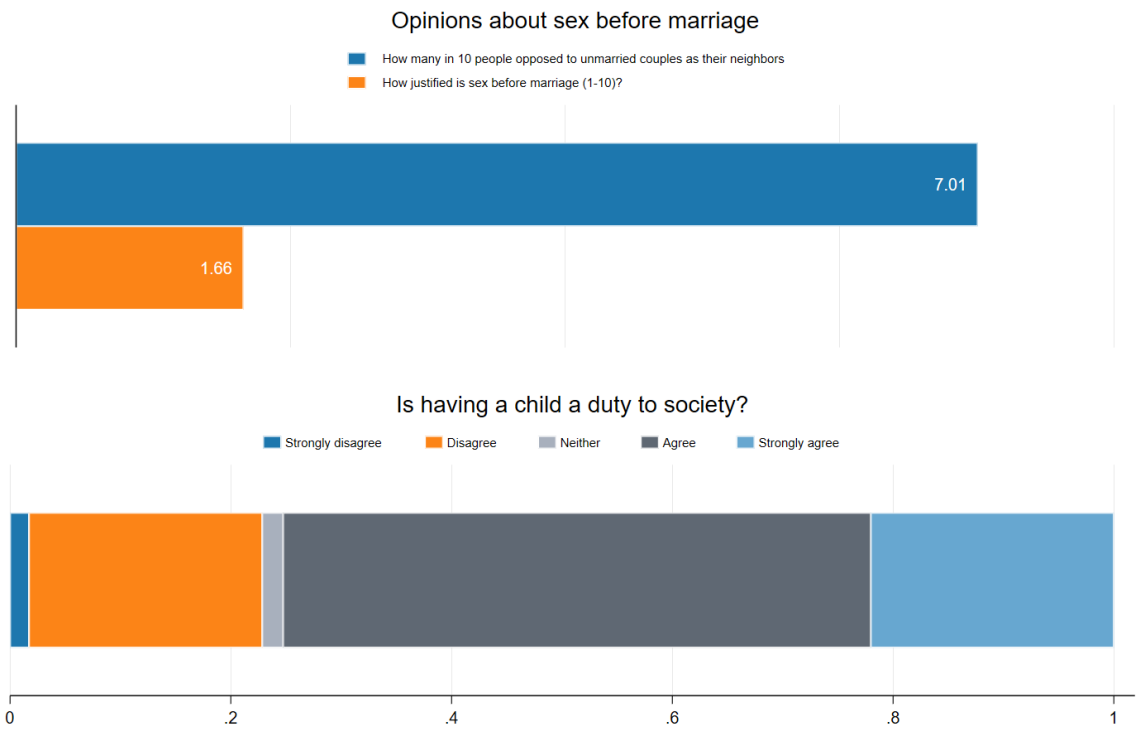
Appendix A: Additional tables and figures for Section 2

Table A1: Total sample size across data sources

Data source	Sample size	% Female	Series
Sakernas	570,778	52.15%	1986-2023
Susenas	41,570	54.42%	2023
IFLS	2,718	53.27%	Wave 1 (1993), Wave 2 (1997), Wave 3 (2000), Wave 4 (2007), Wave 5 (2014)
WVS	4,146	52.36%	Wave 4 (2001), Wave 5 (2006), Wave 7 (2018)

The WVS sample consists of the general population (all observation units regardless of educational attainment), while the sample from the other data sources only comprises college graduates.

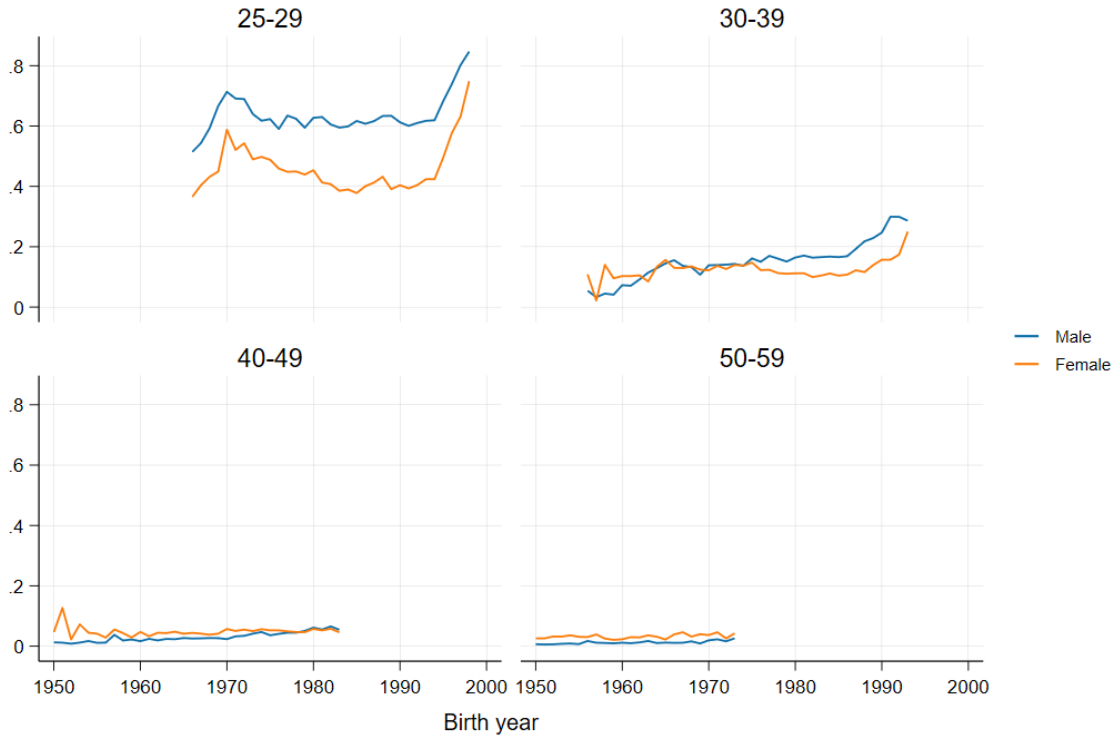
Figure A1: Key opinions about marriage and childbearing



Source: Author's calculation using World Values Survey

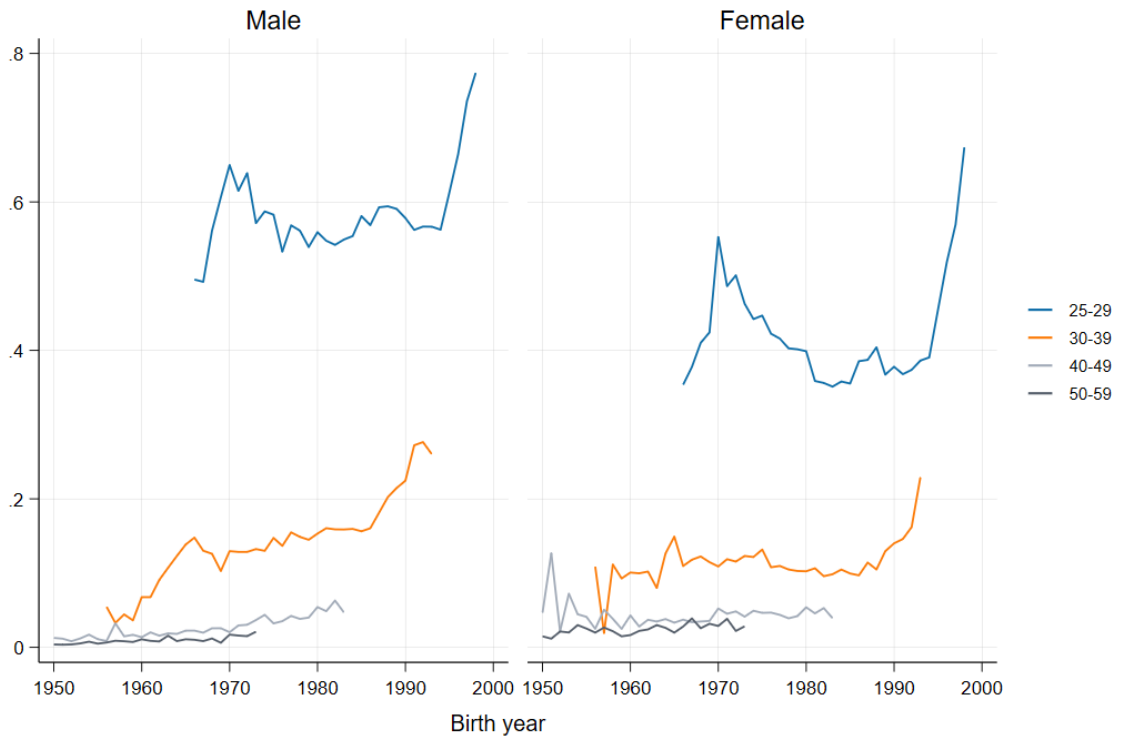
Appendix B: Additional tables and figures for Section 3.1

Figure B2: Fraction of college graduates unmarried by age group and birth cohort



Source: Author's calculation using Sakernas

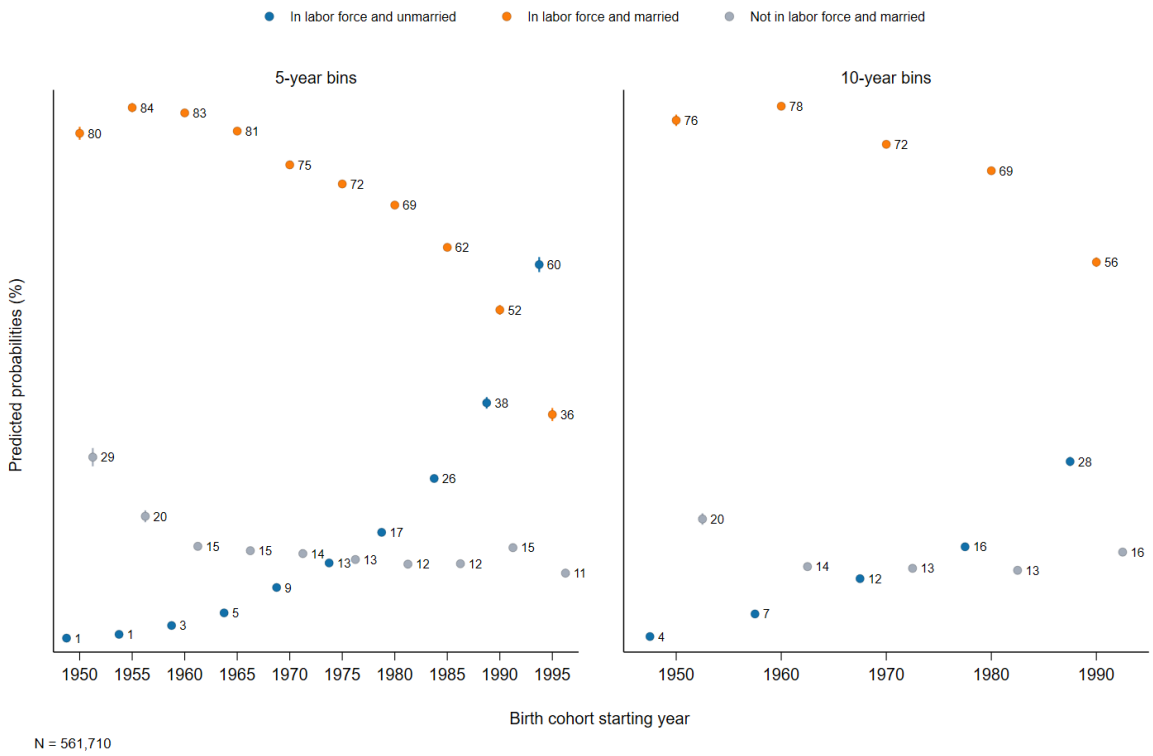
Figure B3: Fraction of college graduates unmarried and in the labor force by birth cohort and age group



Source: Author's calculation using Sakernas

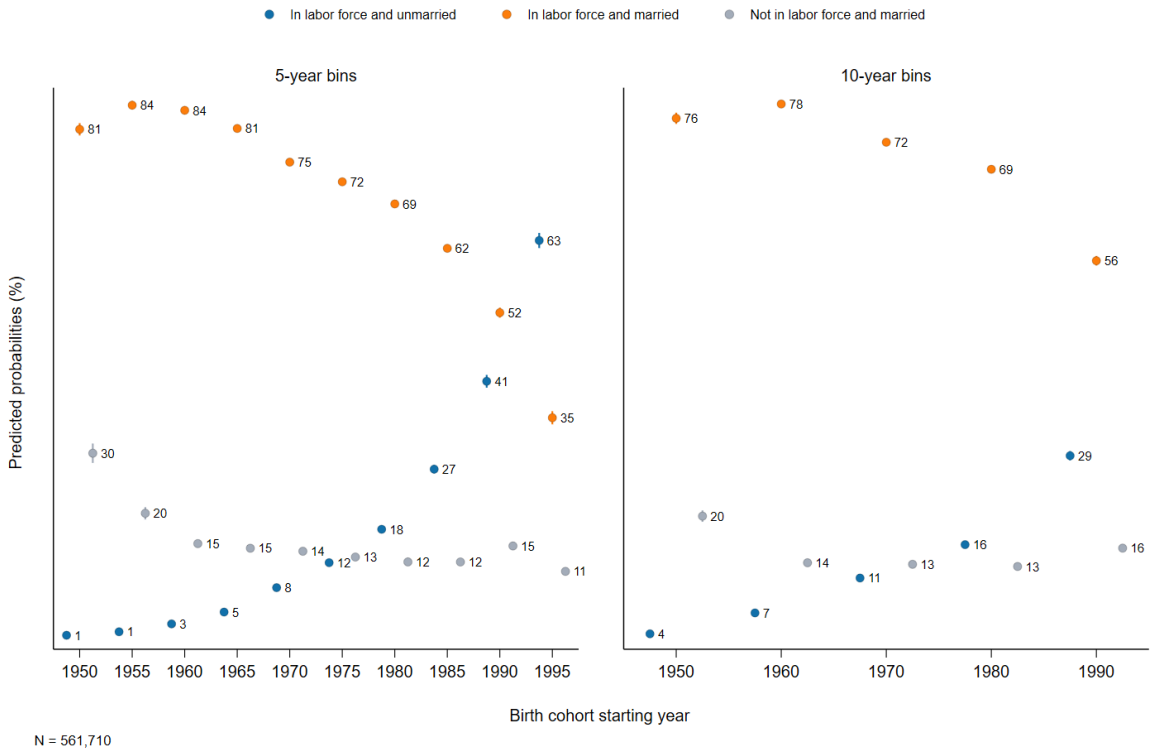
Appendix C: Additional tables and figures for Section 3.2

Figure C1: Probit result of birth cohort effect on labor market participation and marriage preference



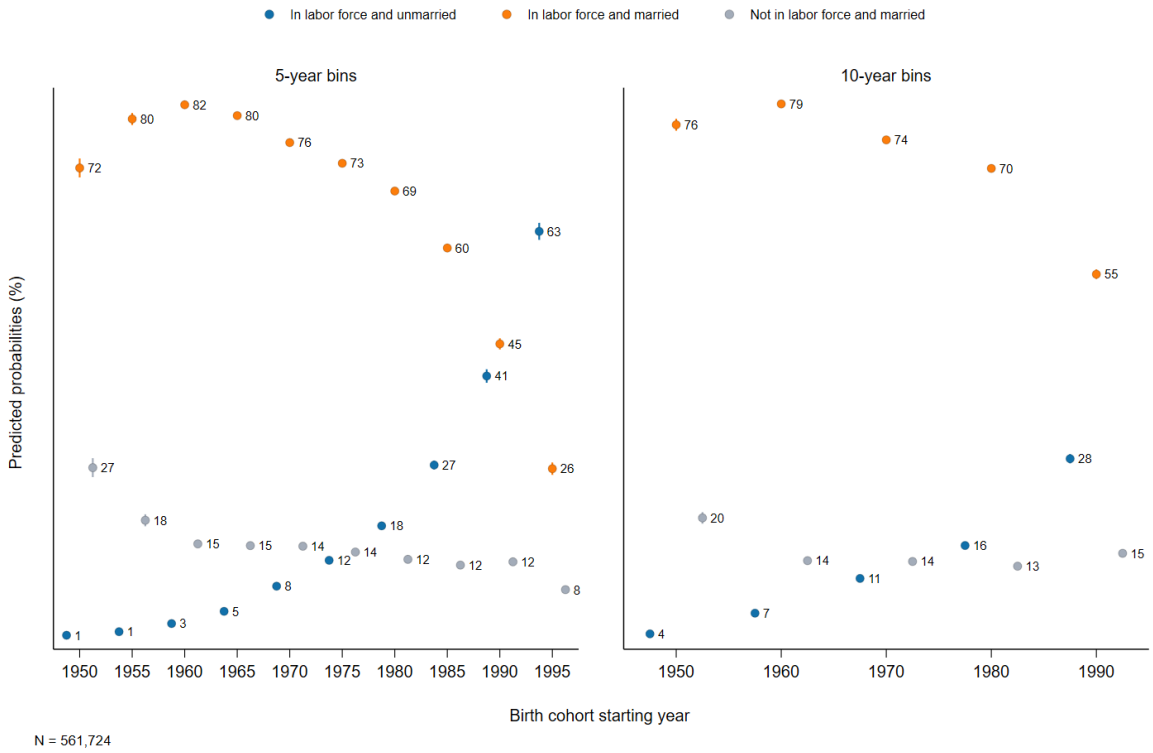
Source: Author's calculation using Sakernas

Figure C2: Logit result of birth cohort effect on labor market participation and marriage preferences



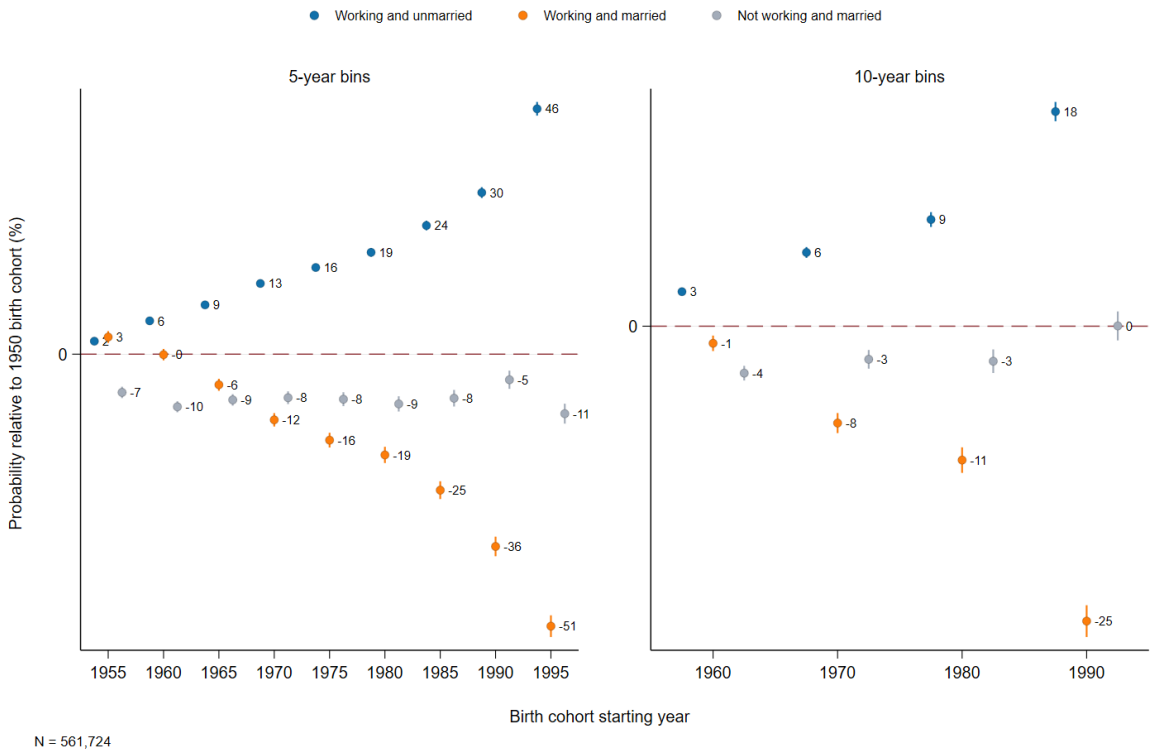
Source: Author's calculation using Sakernas

Figure C3: Multinomial logit result of birth cohort effect on labor market participation and marriage preferences



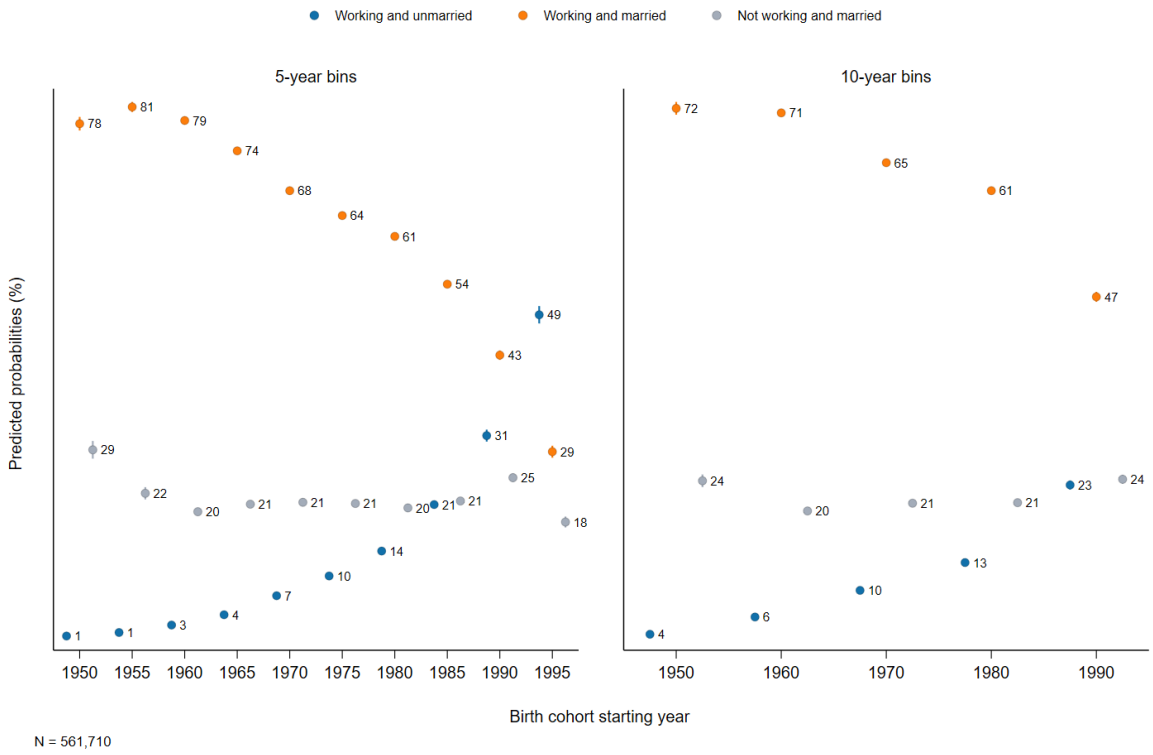
Source: Author's calculation using Sakernas

Figure C4: OLS result of birth cohort effect on working and marriage preferences



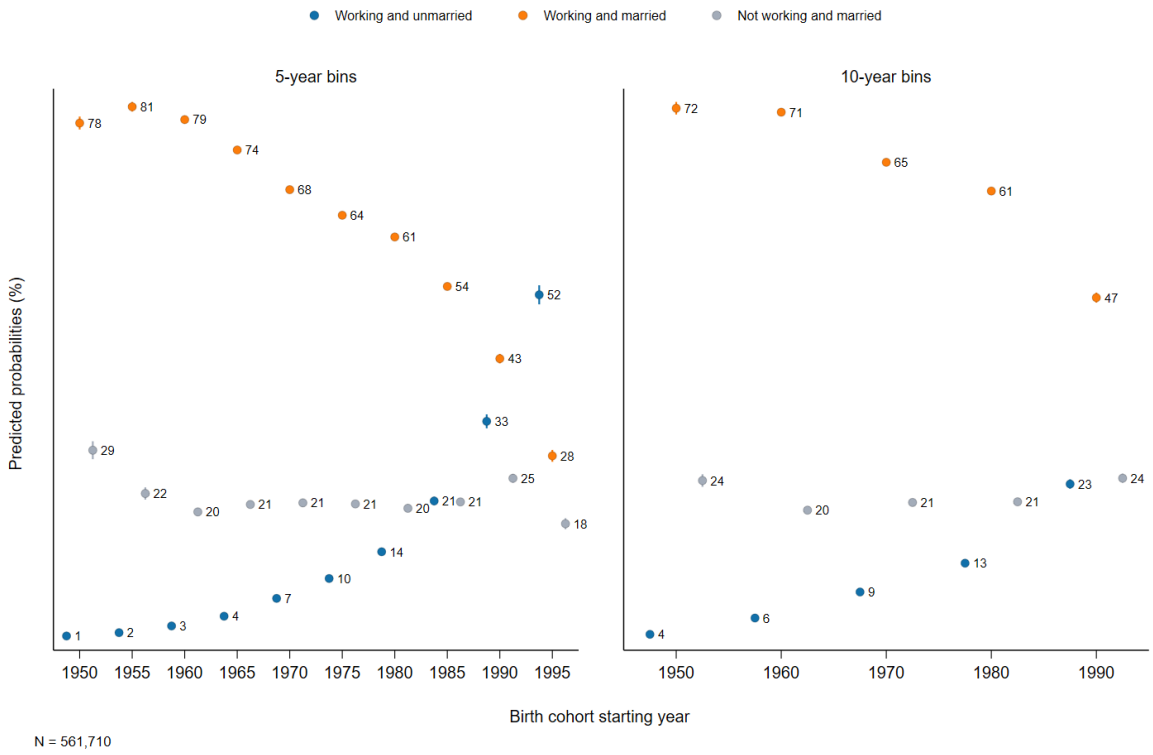
Source: Author's calculation using Sakernas

Figure C5: Probit result of birth cohort effect on working and marriage preferences



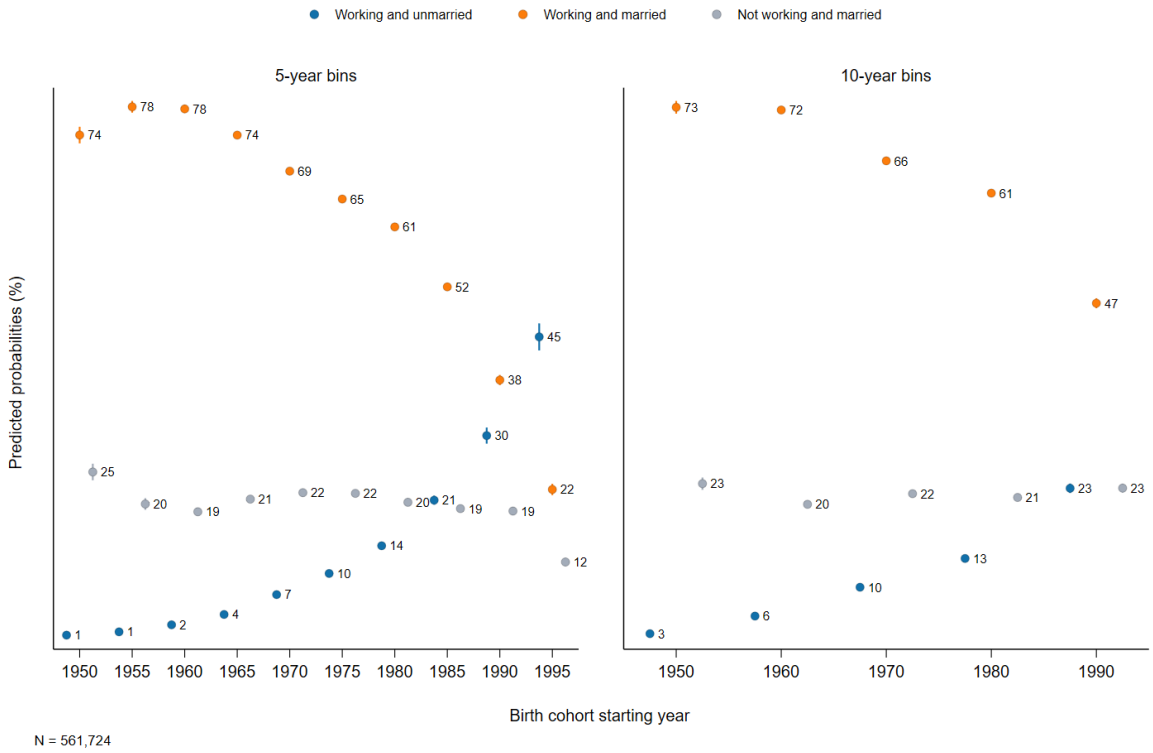
Source: Author's calculation using Sakernas

Figure C6: Logit result of birth cohort effect on working and marriage preferences



Source: Author's calculation using Sakernas

Figure C7: Multinomial logit result of birth cohort effect on working and marriage preferences



Source: Author's calculation using Sakernas

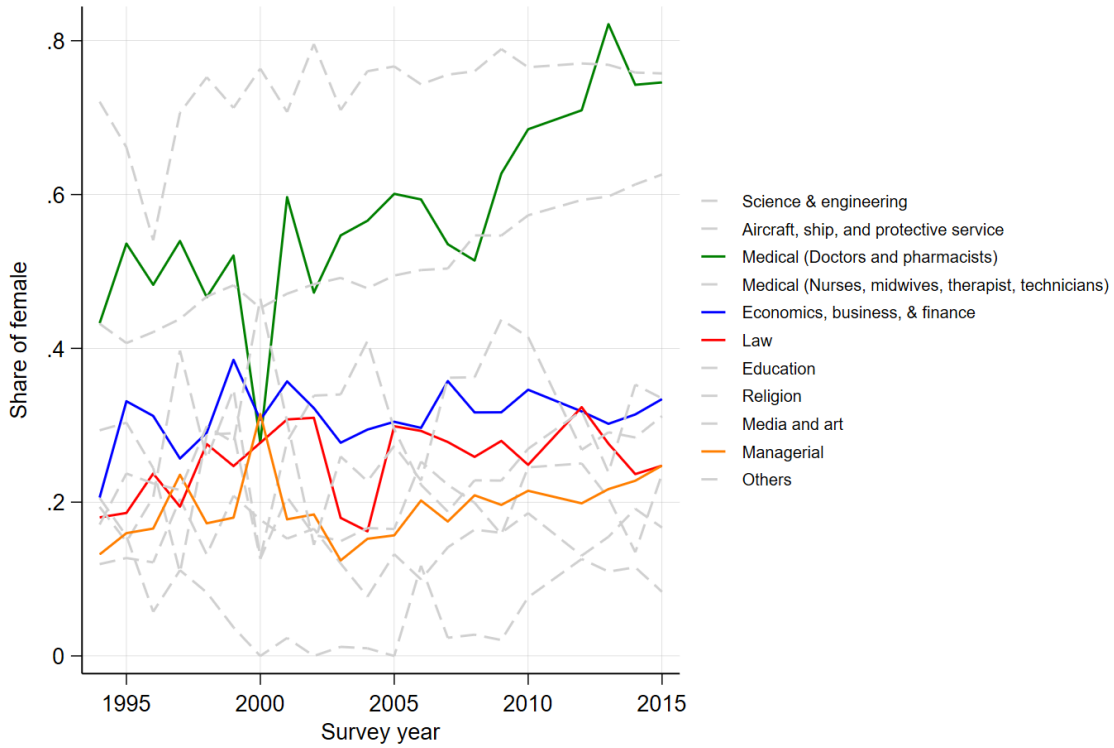
Appendix D: Additional tables and figures for Section 4.1

Figure D1: Work hour distribution of high-skilled occupations



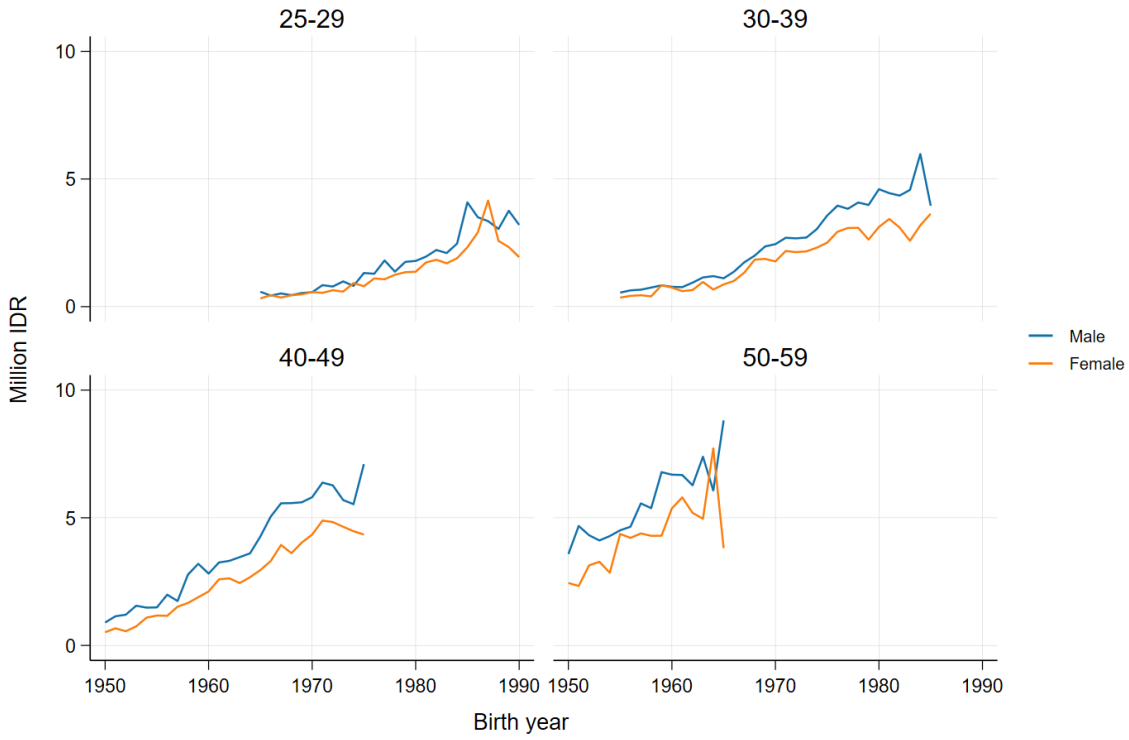
Source: Author's calculation using Sakernas

Figure D2A: Share of female college graduates in high-skilled occupations by field



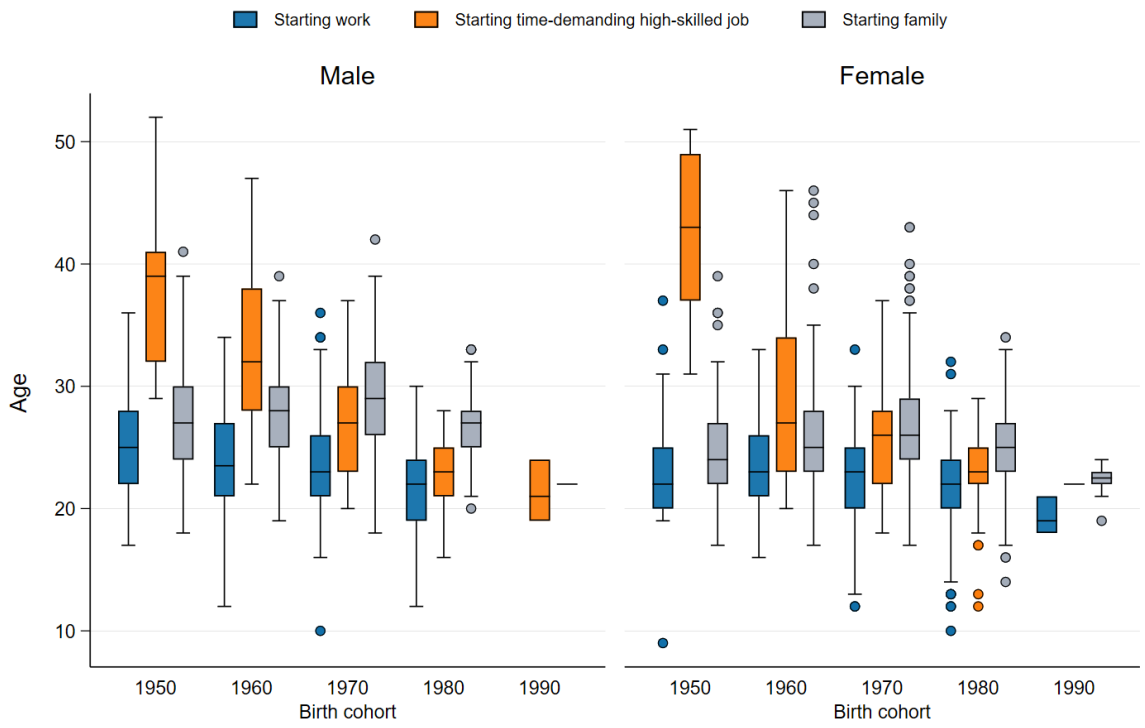
Source: Author's calculation using Sakernas

Figure D2B: Real earnings of college-educated time-demanding high-skilled workers by birth cohort and age group



Source: Author's calculation using Sakernas

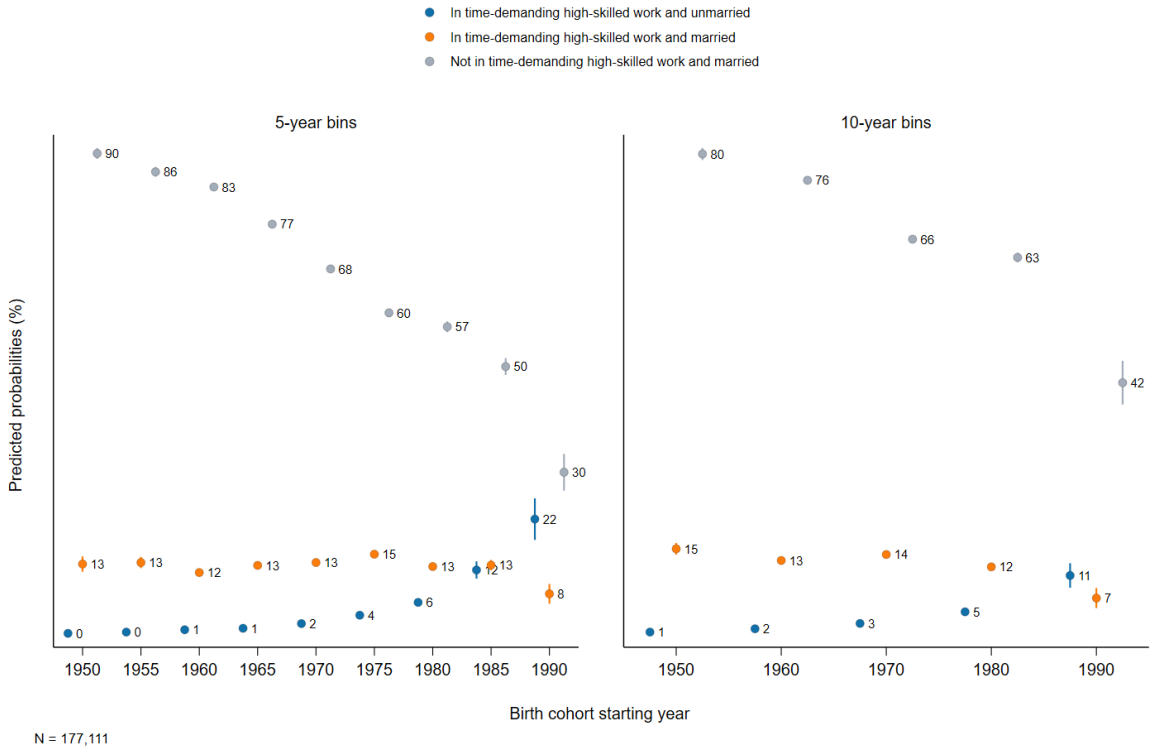
Figure D3: Starting age of work, time-demanding-high-skilled job, and family among college graduates by birth cohort in 2014[17]



Source: Author's calculation using IFLS

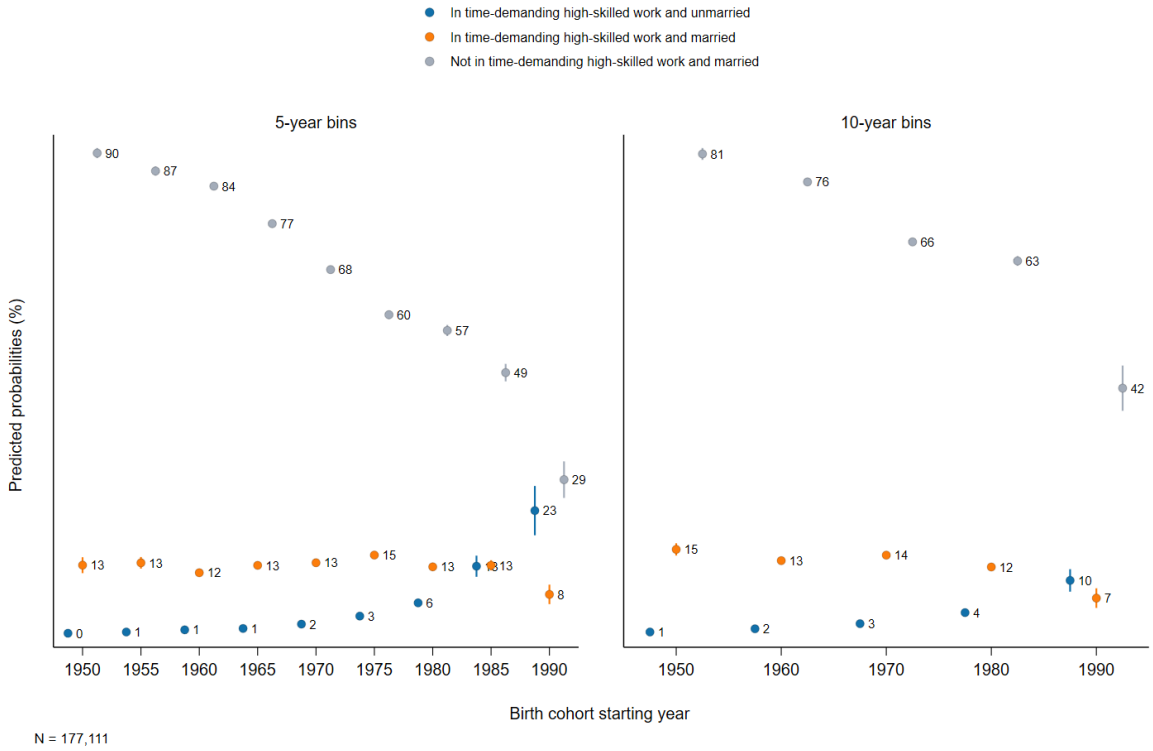
[17] Given that IFLS asks childbearing questions to any woman older than 15 years old, we use whichever the earlier between the age of first marriage and the age when first delivering live birth as the age of starting family.

Figure D4: Probit result of birth cohort effect on time-demanding high-skilled work and marriage preferences



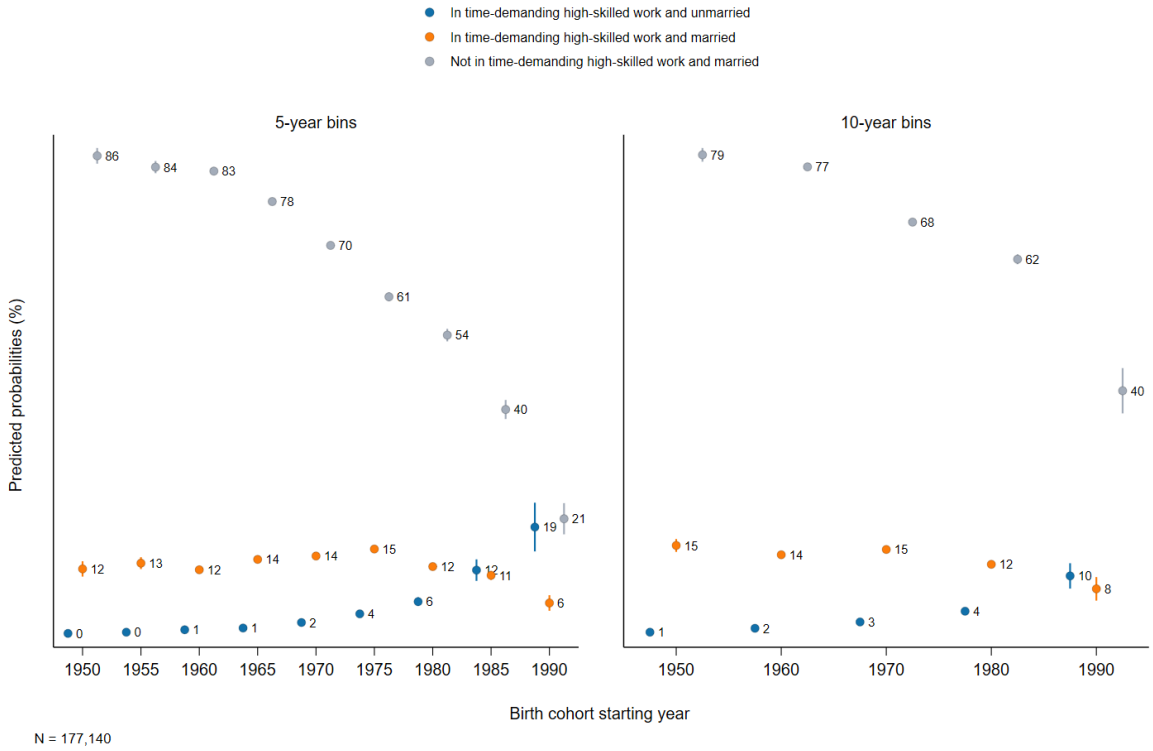
Source: Author's calculation using Sakernas

Figure D5: Logit result of birth cohort effect on time-demanding high-skilled work and marriage preferences



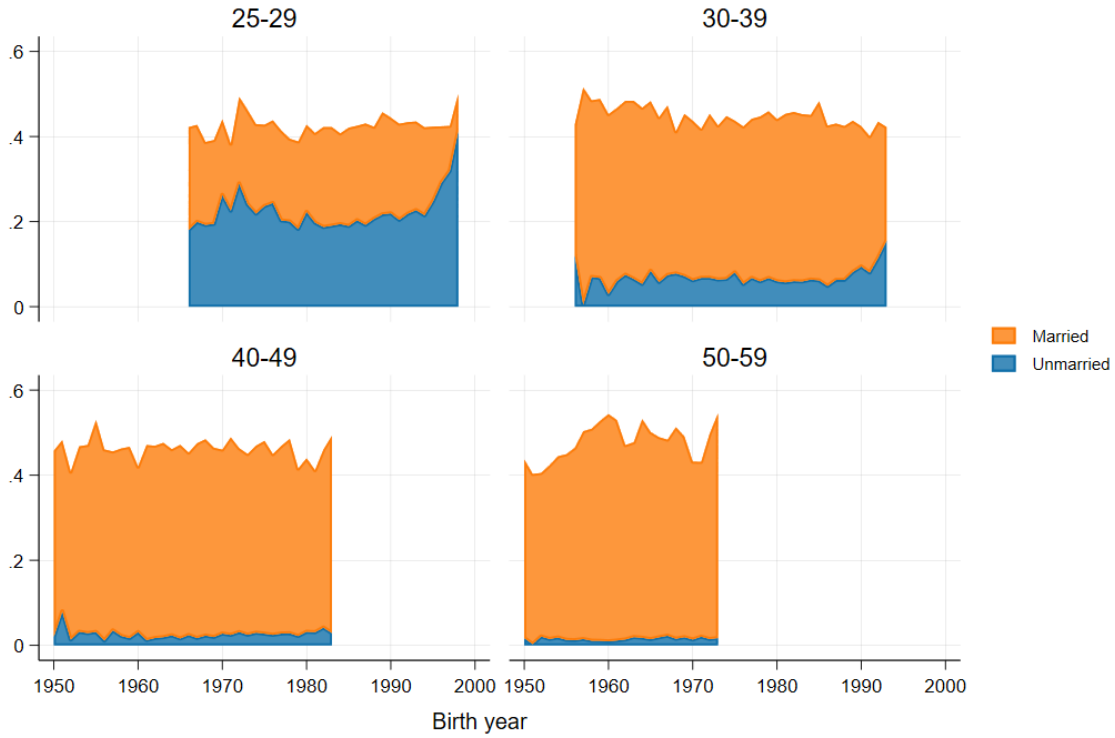
Source: Author's calculation using Sakernas

Figure D6: Multinomial logit result of birth cohort effect on time-demanding high-skilled work and marriage preferences



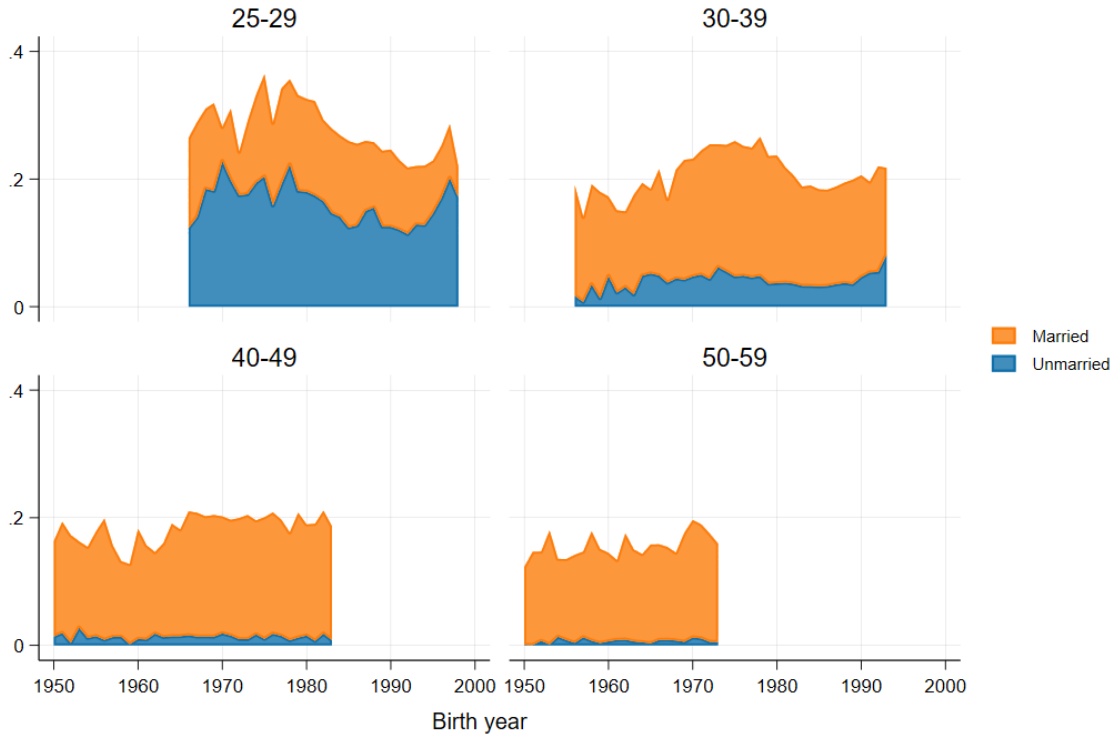
Source: Author's calculation using Sakernas

Figure D7: Marital status of college graduate women working 35-45 hours per week by birth cohort and age group



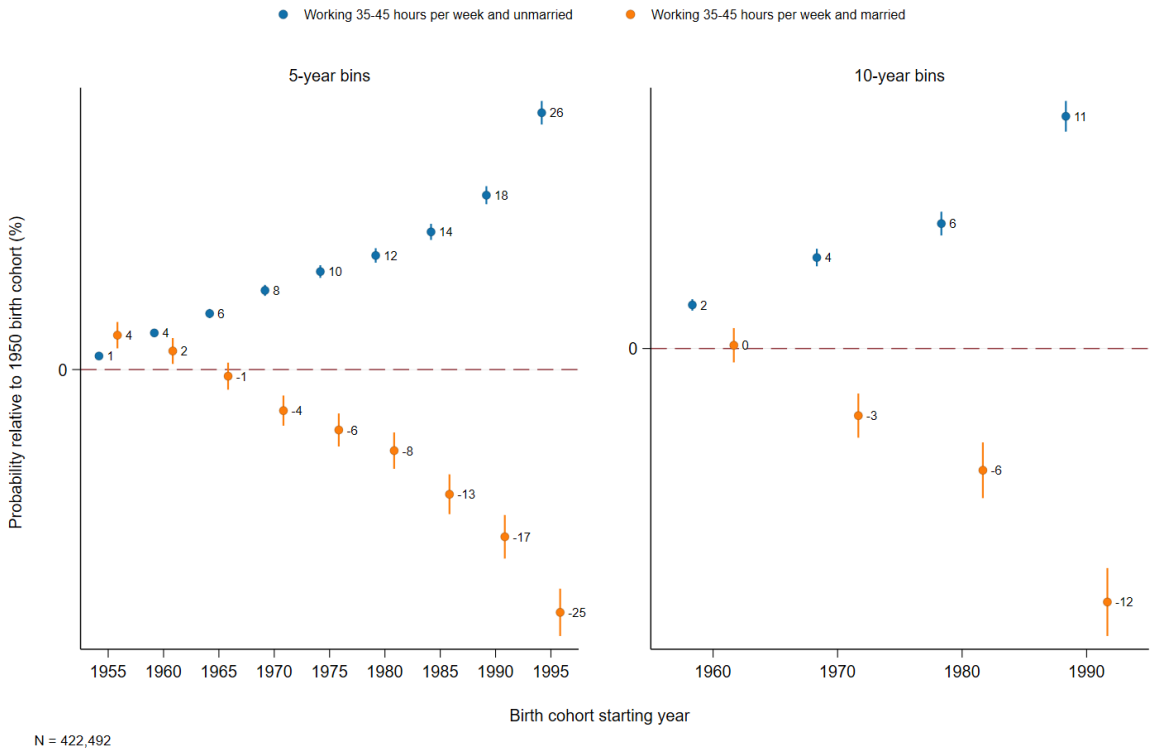
Source: Author's calculation using Sakernas

Figure D8: Marital status of college graduate women working >45 hours per week by birth cohort and age group



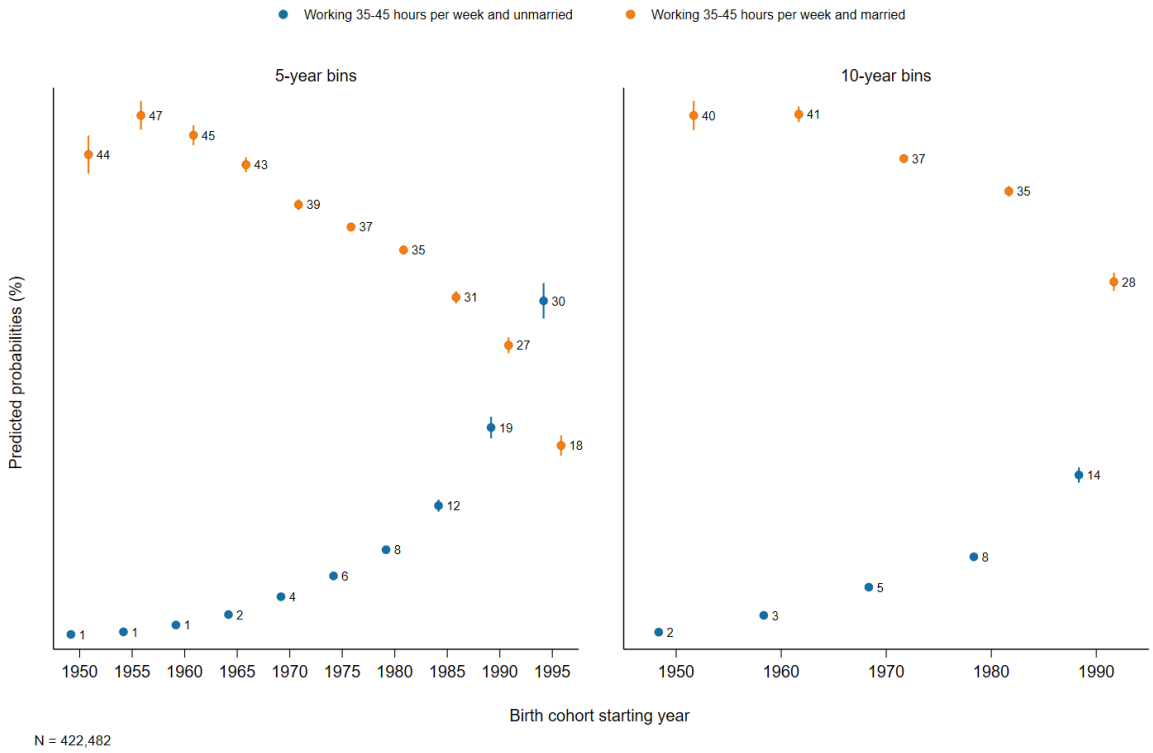
Source: Author's calculation using Sakernas

Figure D9: OLS result of birth cohort effect on working 35-45 hours per week and marriage preferences



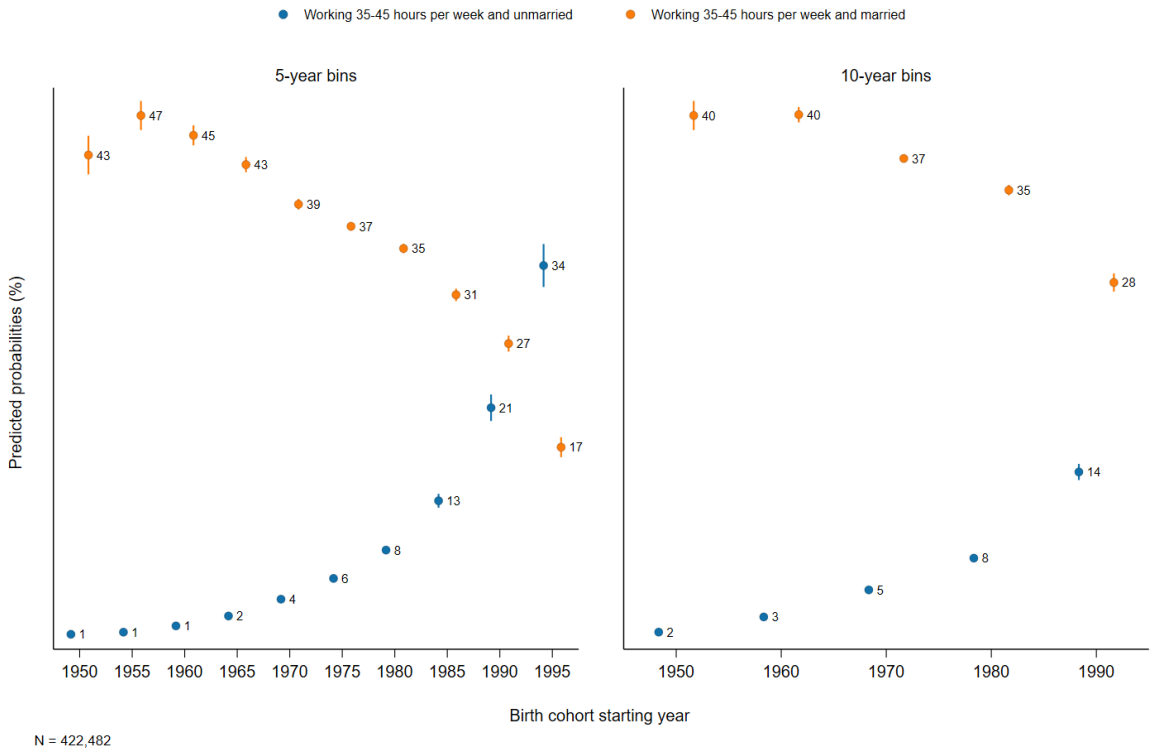
Source: Author's calculation using Sakernas

Figure D10: Probit result of birth cohort effect on working 35-45 hours per week and marriage preferences



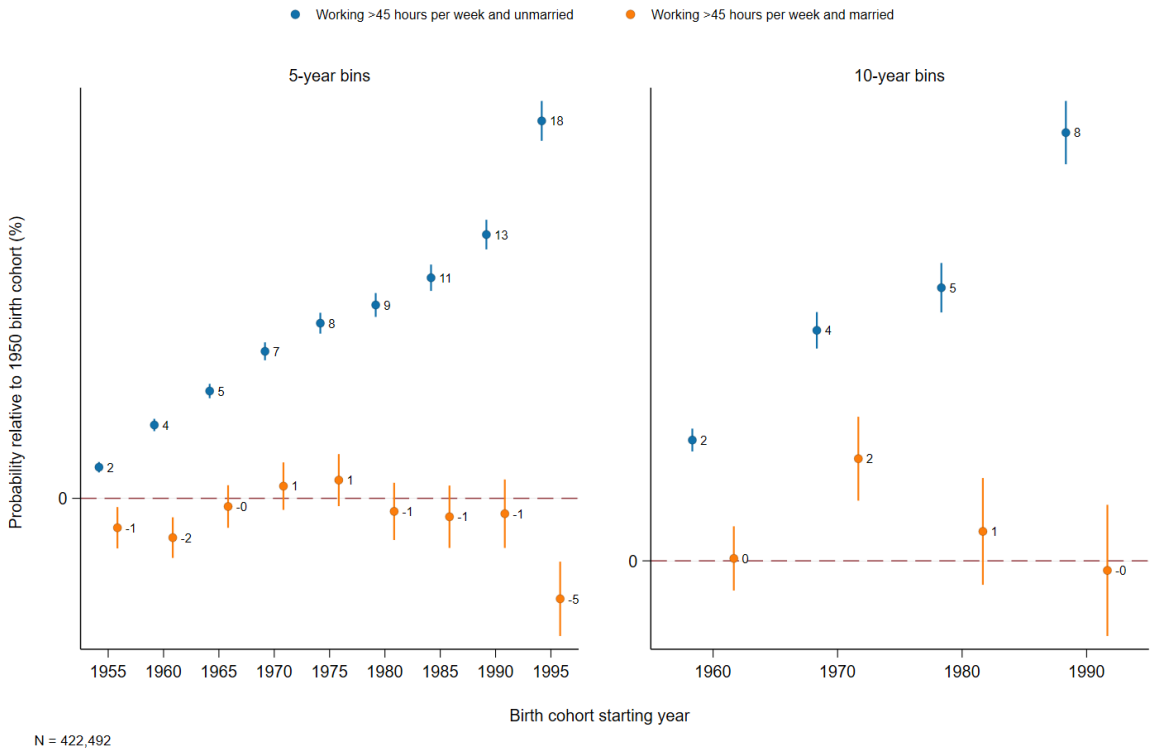
Source: Author's calculation using Sakernas

Figure D11: Logit result of birth cohort effect on working 35-45 hours per week and marriage preferences



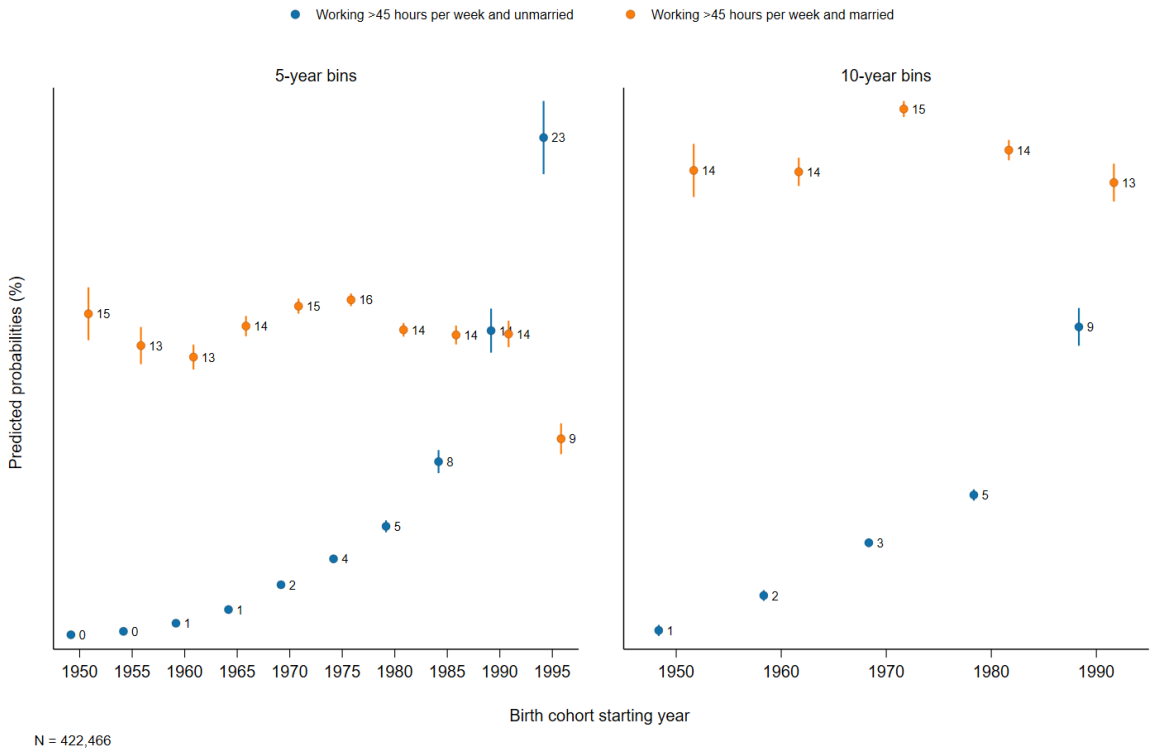
Source: Author's calculation using Sakernas

Figure D12: OLS result of birth cohort effect on working >45 hours per week and marriage preferences



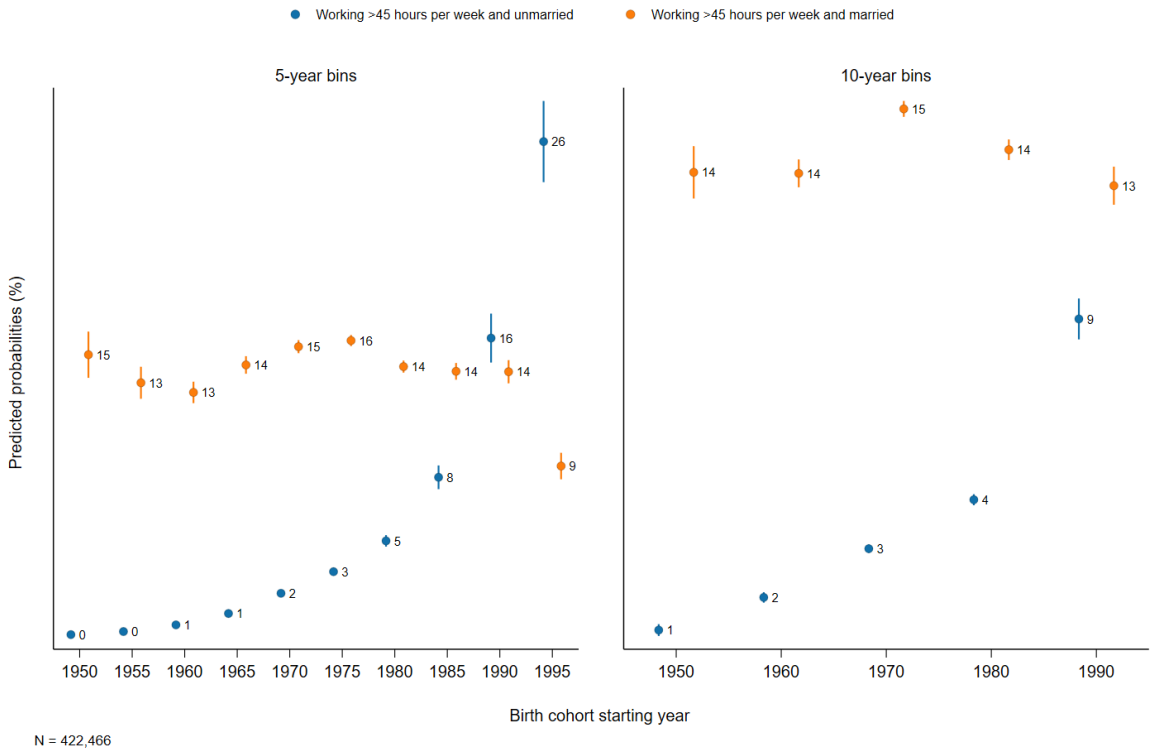
Source: Author's calculation using Sakernas

Figure D13: Probit result of birth cohort effect on working >45 hours per week and marriage preferences



Source: Author's calculation using Sakernas

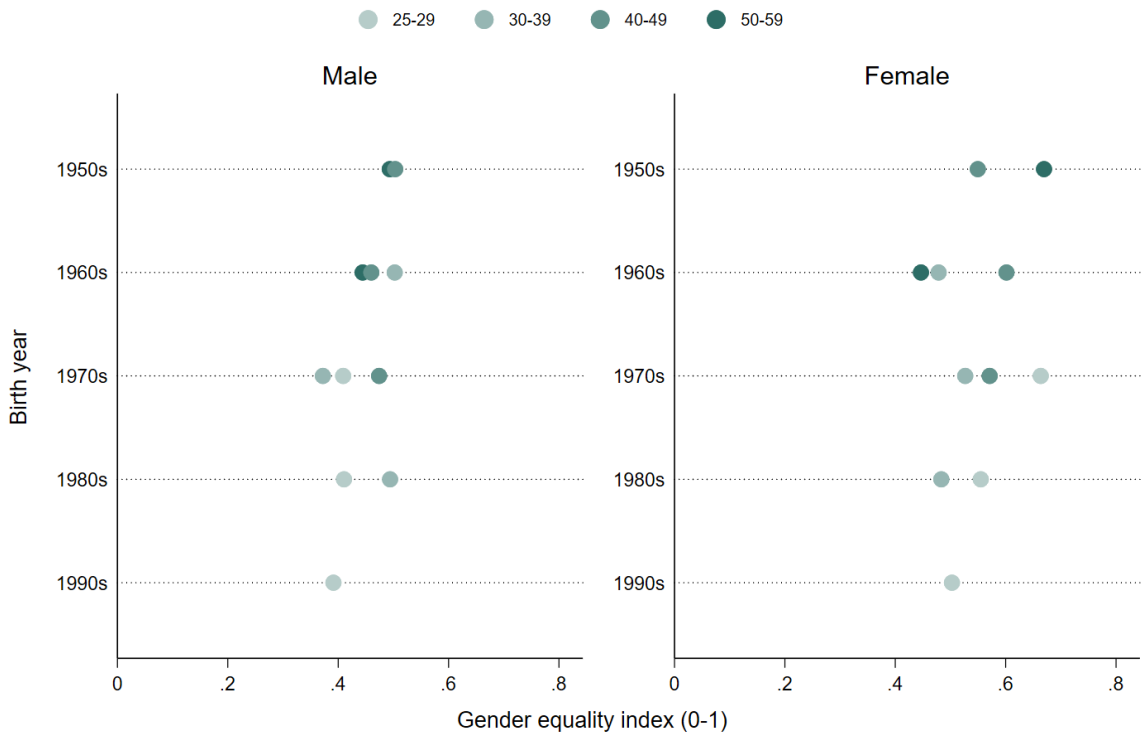
Figure D14: Logit result of birth cohort effect on working >45 hours per week and marriage preferences



Source: Author's calculation using Sakernas

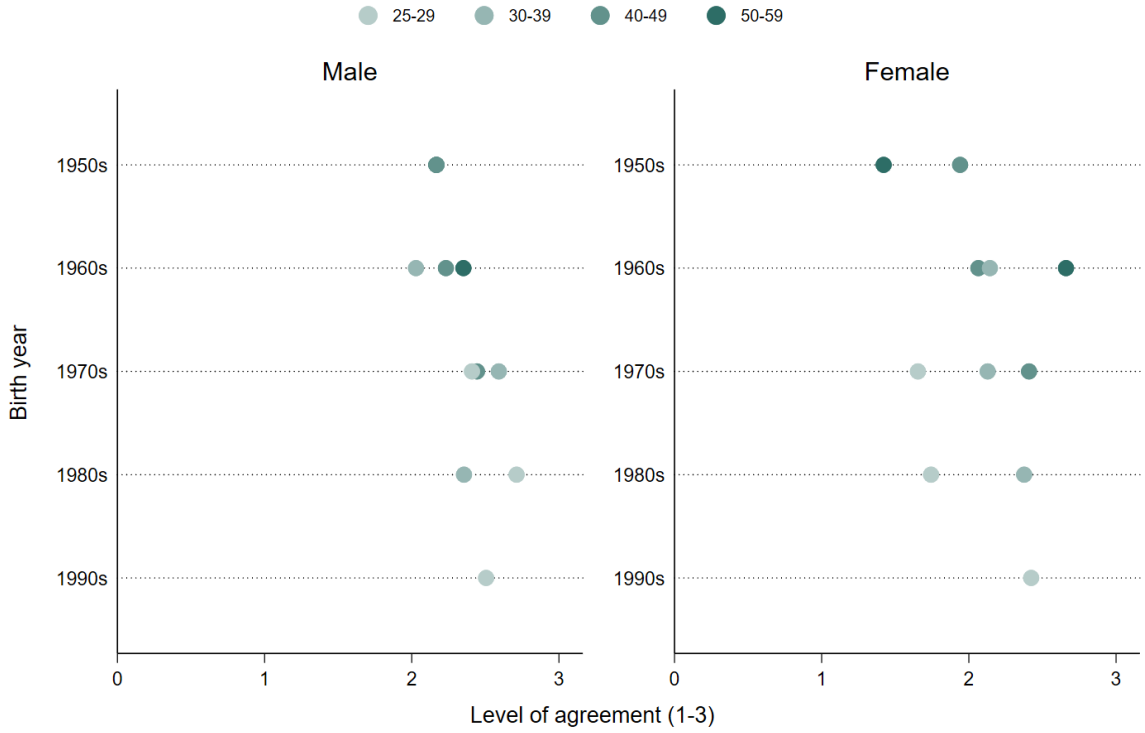
Appendix E: Additional tables and figures for Section 4.2

Figure E1: Gender equality index among college graduates by birth cohort and age group



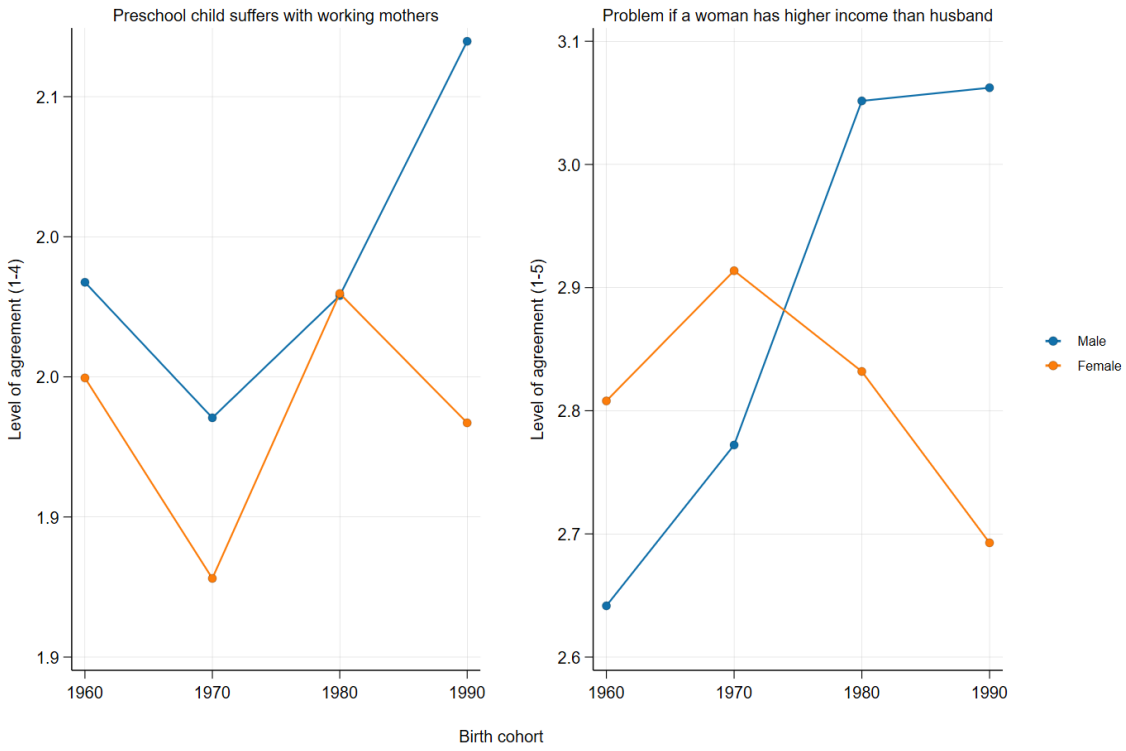
Source: Author's calculation using World Values Survey

Figure E2: Response to the statement “When jobs are scarce, men should have more rights to a job than women” among college graduates by birth cohort and age group



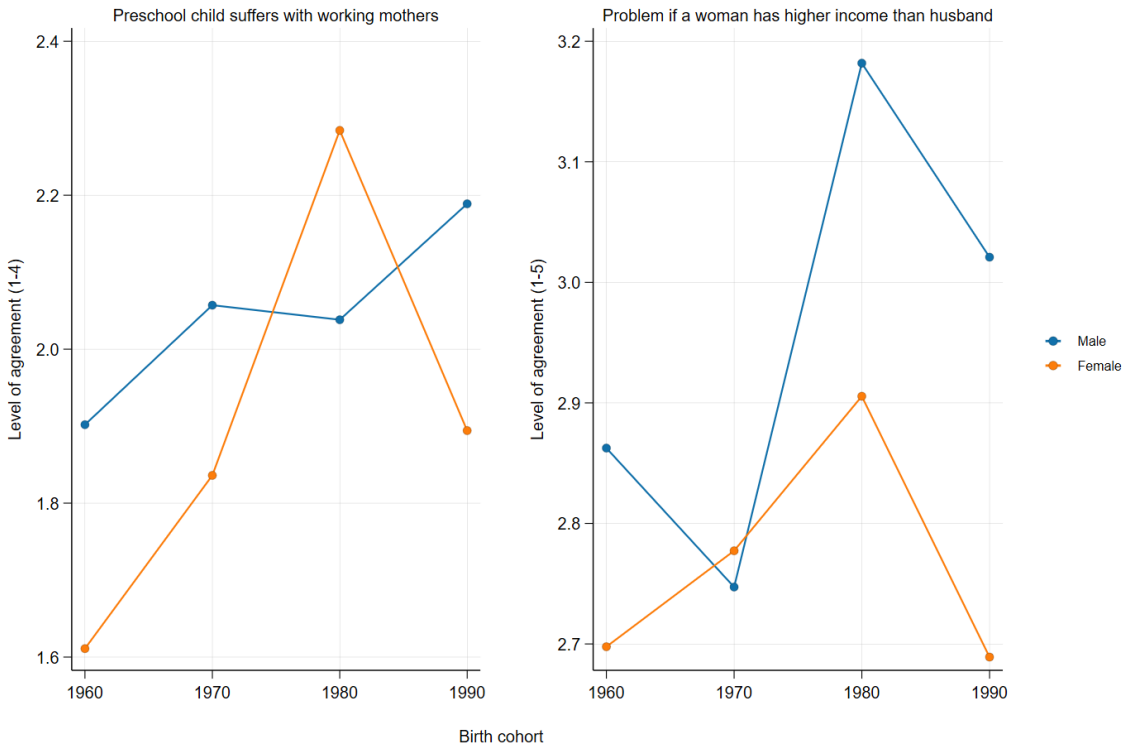
Source: Author’s calculation using World Values Survey

Figure E3: Key opinions on gender topics among the general population in 2018



Source: Author's calculation using World Values Survey

Figure E4: Key opinions on gender topics among college graduates in 2018



Source: Author's calculation using World Values Survey