# How Transitions into Marriage and Parenthood Shape Individual Gender Role Attitudes: Evidence from Egypt

Kajari Saha, Shraddha Yadav and Koustuv Saha

October 2024

**Abstract**

Despite progress towards a more gender equal society, substantial gender-based disparities persist in the division of paid and unpaid work, often unpinned by deeply rooted attitudes surrounding gender appropriate roles in work and family life. Therefore, understanding how gender role attitudes form is crucial for addressing persistent gender-based disparities in the labor market and beyond. Using longitudinal data from Egypt, this study examines how key life-events such as marriage and parenthood shape the gender role attitudes of men and women. We find that marriage leads to a significant shift towards more conservative attitudes among women, with no comparable shift observed after parenthood. For men, no statistically significant change is observed after transition to either marriage or parenthood. Notably, the observed shift towards more conservative attitudes among women is driven primarily by women who were relatively more progressive before marriage. Additionally, we find that the absolute distance between the gender role attitude index of women and their husbands declines post marriage, suggesting that women may adjust their views to align more closely with a new, gendered marital identity.

# 1 Introduction

Despite decades of progress toward gender equality, substantial disparities between men and women persist in both labor market outcomes and the division of paid and unpaid work. Women continue to experience lower labor force participation rates, occupational segregation, and wage gaps while bearing a disproportionate burden of household and caregiving responsibilities (ILO, 2023). These patterns are particularly pronounced in developing economies, where such gender-based disparities have remained largely unchanged despite broader economic progress (Jayachandran, 2015). Importantly, these inequalities are often underpinned by deeply rooted cultural norms and gender role attitudes (GRAs), with societies that adhere to more traditional GRAs displaying wider gender gaps (Fortin, 2015). This relationship suggests that economic development alone is not sufficient to eliminate existing gender based disparities (Alesina, Giuliano and Nunn, 2013; Jayachandran, 2020). Understanding how gender role attitudes form and evolve therefore becomes crucial for addressing persistent gender-based inequalities in the labor market and beyond.

While economic research has documented the evolution of gender role attitudes across societies and over time (Alesina, Giuliano and Nunn, 2013), less attention has been paid to how specific life events like marriage or parenthood might influence the gender role attitudes of men and women, especially in developing country contexts where existing gender based disparities are stark.

In this paper, we examine the impact of marriage and childbirth on the gender role attitudes of both men and women in Egypt, a country characterized by an almost universal marriage rate, very low female labor force participation rates[1] and traditional

[1] As of 2017, Egypt's female labor force participation rate stood at just 24%

gender role attitudes[2]. In Egypt, research demonstrates that women face a "marriage penalty" in labor markets, similar to the "child penalty" observed in developed countries (Assaad, Krafft and Selwaness, 2022). We investigate whether marriage has similar effects on men's and women's gender role attitudes — a crucial determinant of gender gaps in labor market outcomes. We expect marriage to influence gender role attitudes, given that male-breadwinner model is a well established feature of Egyptian society and where women's domestic work hours worked increases substantially post-marriage Assaad, Krafft and Selwaness (2022), potentially reinforcing traditional views about gender-appropriate roles and work-family responsibilities. The reinforcement of traditional gender role attitudes through marriage may perpetuate the gender-based inequalities documented in developing country contexts (Assaad, Krafft and Selwaness, 2022; Bussolo, Rexer and Triyana, 2024; Kleven, Landais and Leite-Mariante, 2024).

The empirical analysis for this study uses data from the Egypt Labor Market Panel Survey (ELMPS) rounds of 1998, 2006, 2012, 2018 and 2023. The ELMPS is a nationally representative longitudinal survey that captures comprehensive socio-economic and demographic information, including labor market outcomes and gender role attitudes. Information on GRAs is available for all women above 15 years of age in the sample for the 2006, 2018 and 2023 rounds, while information on men's GRAs is available only in 2018 and 2023 round. Gender role attitudes are assessed using 10 Likert-type statements on gender roles, which respondents are asked to rate on a five-point scale, ranging from "strongly agree" to "strongly disagree". We take a simple average of all the responses across these 10 statements and construct an aggregate gender role attitude index, which is our main dependent variable of index. As a robustness check, we also use a stan-

[2]As per world value survey around 89% Egyptians agreed with the statement that "men should have more right to a job than women" and around 74% agreed that "men make better business executives than women do" marking one of the highest level of agreement among the 92 countries included in the survey. These numbers can be accessed from the World Values Survey's online data analysis website: Click here.

dardized inverse-covariance weighted average of these responses, following the method proposed by Anderson (2008).

Employing a two-way fixed effects model to control for baseline differences in individual gender role attitudes, we find that marriage significantly shifts women's gender role attitudes in a more conservative direction (the aggregate GRA index declines by 0.15 standard deviations), with no comparable shift observed after parenthood. For men, no statistically significant change is observed after transition to either marriage or parenthood. Interestingly, the move toward more conservative views for women is largely driven by attitudes regarding women's participation in the workforce. To ensure that the changes in gender role attitudes are not driven by marriage-induced shifts in labor market status, we conduct a subsample analysis restricted to women who did not change their employment status before and after marriage. This robustness check yields consistent results, confirming that marriage directly influences women's gender role attitudes independent of labor market transitions.

These results provide suggestive evidence that a shift towards more conservative gender role attitudes may be a key mechanism contributing to the well-documented decline in women's labor force participation following marriage. In section 5, using peer norms as an instrument for own norms, we show how a woman's gender role attitudes *after marriage* — as well as those of her husband, mother, and mother-in-law—play a significant role in shaping her labor supply decisions. This further strengthens the argument that the post-marriage shift in gender role attitudes is a credible mechanism underlying the labor market penalties women face after marriage.

Finally, we investigate potential mechanisms and find suggestive evidence that cognitive dissonance may help explain the observed shift towards more conservative attitudes

among women after marriage — a pattern primarily driven by the sub-sample of women who were classified as relatively more progressive (with a pre-marital GRA index above the median). Furthermore, we find that the absolute distance between the gender role attitude index of women and their husbands declines post marriage, suggesting that women may adjust their views to align more closely with a new, gendered marital identity.

Our study contributes to at least three strands of literature. First, a substantial body of research has documented the labor market penalties women face following marriage and parenthood. While much of this work focuses on the employment setbacks associated with the transition to parenthood in developed countries — commonly referred to as the motherhood or child penalty (Kleven, Landais and Søgaard, 2019; Kleven, 2022) — evidence from developing countries shows that women often experience such setbacks even earlier, notably upon marriage. Recent work by Assaad, Krafft and Selwaness (2022), for example, argues that marriage fosters sex-based specialization, with women increasingly focused on domestic responsibilities and men on market work. We add to this literature by examining whether the transition into marriage reshapes gender role attitudes, a key factor determinant of women's labor force participation. In doing so, our analysis addresses a critical gap in understanding the mechanisms through which marriage reinforces gender-based labor market inequalities.

This study also contributes to the small but growing literature on changes in gender role attitudes over time. The study most closely related to ours is Grinza et al. (2022), which examines how parenthood shapes the evolution of gender role attitudes for both men and women in the UK. We extend this literature by investigating not only the impact of parenthood but also the effect of marriage on changes in gender role attitudes for men and women, in a vastly different context — Egypt, a developing economy charac-

terized by very different family support policies and social norms surrounding marriage.

Finally, our study contributes to the recent literature examining how cultural norms surrounding gender roles influence the magnitude of the motherhood penalty. Research has found that women with more traditional views at baseline experience significantly higher child penalties in the UK (Boinet et al., 2024), as well as in Germany (Jessen, 2022). Some recent studies indicate that childhood exposure to gendered parenting roles shapes future child penalties (Boelmann, Raute and Schonberg, 2021; Kleven, Landais and Leite-Mariante, 2024). Using administrative data from Israel, Gould and Lichtinger (2024) show how family preferences and norms absorbed during childhood can affect the extent of motherhood penalty faced by women in the future. We contribute to this literature by examining the role of gender role attitudes in shaping the magnitude of the marriage penalty, which, in developing countries like Egypt, often takes precedence over the child penalty.

The rest of the paper is structured as follows. Section 2 presents the data and descriptive evidence. Section 3 describes the empirical methodology. Section 4 present our main results. Section 5 looks at the relationship between gender role attitudes and labor market outcomes and Section 6 concludes.

## 2 Data and Descriptive Evidence

We use data from the Egypt Labor Market Panel Survey (ELMPS), a longitudinal survey carried out by the Economic Research Forum (ERF) in cooperation with the Egyptian Central Agency for Public Mobilization and Statistics (CAPMAS) for the years 1998, 2006, 2012, 2018 and 2023. This dataset is unique in that it spans more than two decades allowing us to follow subjects through a major part of their lifespans. To address con-

cerns about attrition we include panel weights which take this into account (Assaad and Krafft, 2024).

Information on gender role attitudes are probed for all women in 2006, 2018 and 2023, while information on men's perception of gender roles are available only in 2018 and 2023. Gender role attitudes (GRA) are assessed through 10 Likert-type statements, which respondents are asked to rate on a five-point scale, ranging from "strongly agree" to "strongly disagree". An example of one of these statements is: "A woman's role is not limited to the household; she should also be allowed to work." Where necessary, we recode responses so that a low (high) value reflects more conservative (progressive) gender role attitudes. We construct a score variable to indicate GRA by averaging the scores on the ten statements. This variable ranges from 1, which represents very conservative attitudes, to 5, which indicates very progressive views. As a robustness check, instead of using a simple average of responses across the 10 statements, we construct a standardized weighted index using the *swindex* command in Stata. This approach applies the generalized least-squares method for index construction, as proposed by Anderson (2008).

The descriptive evidence presented in Tables 1 and 2 offers several interesting insights. As shown in Table 1, we observe a decline in the gender role attitudes (GRA) index immediately following marriage among women, while no significant change is evident among newly married men. For example, among women married between 2006 and 2018 (Table 1, second row), the mean GRA index drops from 4.08 to 3.91. Similarly, among those married between 2018 and 2023, the index declines slightly from 4.05 to 4.02.

Additionally, we document substantial differences in GRA across various socio - de-

mographic groups, as reported in Table 2. Older individuals consistently exhibit lower average GRA scores — reflecting more conservative attitudes — across both genders and survey years. Higher levels of education and urban residence are associated with more liberal views. Furthermore, on average, men hold more conservative gender role attitudes (lower GRA index) than women. To account for these descriptive patterns, our econometric analysis controls for individual fixed effects and changes in socio-demographic characteristics, allowing for a more rigorous assessment of how gender role attitudes evolve following marriage, as well as parenthood for both men and women.

# 3 Empirical Model

We use the following two-way fixed effects regression, separately for each gender:

$$Y_{it}^{g} = \delta_i + \lambda_t + \beta_0 \,\text{Married}_{it} + \beta_1 \,\text{Child}_{it} + \beta_2 W_{it} + \epsilon_{it} \qquad (1)$$

The dependent variable, $Y_{it}^{g}$, denotes the Gender Role Attitude (GRA) index of individual i at time t. $\text{Married}_{it}$ and $\text{Child}_{it}$ are the independent variables of interest: a binary indicator variable denoting whether an individual i has entered his/her first marriage or parenthood by time t, and 0 otherwise. We include individual fixed effects, $\delta_i$, to control for time invariant factors influencing the outcome variable and possibly affecting the likelihood of marriage or parenthood. Time fixed effects, denoted by $\lambda_t$, control for the time-varying factors that influence our outcome of interest and which are constant across all individuals in a given period in time. Finally, $\epsilon_{it}$ is the idiosyncratic error term.

As noted in (Kleven, 2022), due to the correlation of marriage and childbirth timing in the event space, it is necessary to control for both marriage and childbirth in the same equation when exploring the penalties women face following these life events.

In developing country contexts, childbirths occur in close succession to marriage. Using data from ELMPS, we find that for Egypt, around 91% of individuals have children within 2 years of marriage. In order to separate the marriage penalty from the child penalty, we add indicators for both exposure to marriage and childbirth in each year for each individual. Even though the two events occur in close succession, there is enough variation in their relative timing to separately identify the two effects.

### 3.1 Threats to Identification

Interpreting the estimated coefficients of $\beta_0$ and $\beta_1$ as causal requires us to make the assumption that there are no observable or unobservable time-varying factors occurring in between the survey rounds that can lead to a revision of gender role attitudes and at the same time change the probability of getting married or having a first child. To minimize this bias, we control for relevant time-varying characteristics, including dummies for age, education, area of residence (rural/urban), and a continuous variable denoting household wealth (these are contained in $W_{it}$). Growing older may make attitudes more conservative, as well as positively influence the decision of getting married or having children. An increase in education levels may make the individual more progressive, and also affect the probability of getting married or having children. In our context (see Table 2), individuals living in rural areas and those with below-median household wealth are found to hold more conservative gender role attitudes, which may also influence their likelihood of marrying or having children.

## 4 Main Results

Table 3 presents the main results corresponding to Eq. (1), with estimations conducted separately by gender. The results show the impact of transitioning into marriage and parenthood on men's and women's gender role attitudes, as measured by our aggre-

gate GRA index. A negative coefficient on $\text{Married}_{it}$ suggests that individuals adopt more traditional gender role attitudes following marriage, whereas a positive coefficient indicates a shift toward more progressive views. Standard errors are clustered at the individual level to account for within-person correlation over time.

The results indicate that women experience a statistically significant shift toward more traditional gender role attitudes upon entering into marriage. However, controlling for marital status, we observe no additional effect of childbirth on women's gender role attitudes. Specifically, marriage is associated with a decline of 0.0849 points (approximately 0.15 standard deviations) in women's aggregate gender role attitude index. By contrast, there is no evidence that men significantly revise their gender role attitudes after either marriage or transition to fatherhood. These results are robust to using an alternate GRA index - namely, the standardized weighted index introduced by Anderson (2008) - results for which are presented in Appendix Table A.3.

Figures 1 and 2 illustrate the effects of marriage and childbirth on the gender role attitudes (GRA) of women and men, as measured by the individual components or statements comprising the aggregate GRA index. Among women, the observed shift toward more traditional attitudes following marriage is primarily driven by changing views on women's participation in the labor force (Panel (a), Figure 1). In particular, we observe negative coefficients associated with the following statements: (1) "Working women cannot be good mothers," (2) "A full-time job harms a woman's marriage," and (3) "Boys and girls should receive the same schooling," with the strongest effect observed for statement (2). Among men, although no overall effect of marriage on GRA is detected, results presented in Panel (a) of Figure 2 reveal a positive effect of marriage on attitudes related to the statement "A girl's education is for her career."

These results raise an important question: Is the observed traditionalization of gender role attitudes among women driven primarily by those who exit the labor force after marriage? Using our data, we observe a sharp decline in women's labor force participation following marriage, as shown in Appendix Table A.1. This table reports estimates from Equation (1), where the outcome variable is a binary indicator for whether the respondent participated in the labor force over the past three months. The results reveal that, after marriage, women's likelihood of labor force participation decreases by 11.2 percentage points. Controlling for the transition into marriage, childbirth is associated with an additional 7.96 percentage point decline in labor force participation. The predominance of the marriage penalty over the child penalty is consistent with prior research in developing-country settings, where marriage penalties frequently play a larger role than child penalties in shaping women's labor market trajectories (Kleven, Landais and Leite-Mariante, 2024).

To test whether our main results are driven solely by the women who drop out of the labor force, we restrict the sample to women whose employment status remains unchanged after marriage (Appendix Table A.2). Interestingly, we continue to observe a significant and negative effect of marriage on the gender role attitudes of women — in fact, the estimated coefficient is now even larger. Once again, this shift is predominantly driven by attitudes towards women's work.

Taken together, these findings suggest that shifts in gender role attitudes may contribute to the observed labor market penalties women experience following marriage. In other words, the shift toward more traditional gender role attitudes may serve as an underlying mechanism that helps explain the impact of marriage on women's declining labor force participation. In the following section, using peer norms as an instrument for own norms, we show how a woman's gender role attitudes *after marriage* — as well

as those of her husband, mother, and mother-in-law—play a significant role in shaping her labor supply decisions.

Finally, the impact of childbirth on the evolution of gender role attitudes also presents some interesting findings. Panels (b) of Figures 1 and 2 display the effects of childbirth —controlling for the transition into marriage — on the individual components or statements comprising the aggregate GRA index. For women, childbirth appears to influence attitudes concerning the treatment of boys and girls, indicating a positive shift toward more liberal views. In contrast, for men, childbirth is associated with a negative effect on the statement "Boys and girls should be treated equally," suggesting a shift toward more conservative attitudes.

### 4.1 Mechanisms

Building on the framework of Grinza et al. (2022), we identify two potential and complementary mechanisms underlying the observed changes in gender role attitudes (GRA) following the transition to marriage or parenthood: (1) **Cognitive dissonance**: When a person's belief contradicts their behavior, cognitive dissonance emerges, and individuals adapt their beliefs to their behaviors or vice versa; (2) **Changes in gender identity**: Identity is defined as belonging to a specific social category (Akerlof and Kranton, 2000). Following marriage, attitudes might change to adhere more closely to a new gendered married/parental identity.

We provide suggestive evidence consistent with the cognitive dissonance mechanism. Specifically, we find that the traditionalization of attitudes after marriage is primarily driven by women who were relatively more progressive prior to marriage. Table 4 presents estimates from Equation (1), run separately for men and women, with the sample stratified by whether an individual's pre-marriage GRA index was above or below

the median. Those with a pre-marriage GRA index above the median are classified as relatively progressive (columns 1 and 3), while those below the median are classified as relatively conservative (columns 2 and 4). Although this pattern could be partially mechanical (since more progressive women also have higher baseline GRA index values), it nevertheless points toward the potential role of cognitive dissonance in shaping gender role attitudes following marriage.

In addition to this, we find that the absolute distance between a woman's GRA index and that of her husband decreases following marriage. Therefore, women's gender role attitudes tend to converge to their spouses after marriage. This finding could be indicative of either cognitive dissonance or changes in gender identity.

# 5 Gender Role Attitudes and Married Women's Labor Supply

In this section, we use the following linear regression model to gauge the impact of gender identity norms on married women's labor supply using only the 2018 survey round. The goal of this analysis is to provide evidence that women's gender role attitudes *after marriage* — as well as the gender role attitudes of her immediate family members — play a meaningful role in shaping her labor supply decisions.

$$Y_i = \alpha + \delta Norms_i + X_i^{'}\beta + \lambda_r + \epsilon_i$$

$Y_i$ denotes the focal woman's labor force participation. $Norms_i$ refers to either the woman's norm index or that of her spouse, parents and in-laws. $X_i$ is a vector of covariates, which includes age, education, household wealth, mother and father's education. $\lambda_r$ indicates region of residence (governorate) fixed effects.

To rule out problems such as reverse causality and omitted variable bias we employ a IV-2SLS strategy to identify our main coefficient of interest $\lambda$. We make use of the following instruments the average norm index of an individual's peers (where an individual's peers are defined by same-sex individuals belonging to the same age, education and region of residence category – excluding the focal individual).

Preliminary results using the IV demonstrate strong influence of a woman's mother's norms on her labor force participation post marriage. Her own norms, as well as that of her husband's seem to play a role as well, although the magnitude is smaller.

The social transmission of norms ensures that the instrument has relevance. The instrument should be robust to reverse causality if the peer group is large enough to prevent direct interaction with the focal woman. However, there could still be concerns regarding the exclusion restriction - for example, an individual's peer's norms may affect her labor force participation after marriage through changes in her peer's employment statuses. In column (3) of Table 6, we control for peer's employment rate and the results for the impact of own norms on labor force participation remain significant.

These results offer suggestive evidence that a woman's gender role attitudes after marriage — as well as those of her immediate family members — play a significant role in shaping her labor supply decisions. Therefore, this further strengthens the argument that the post-marriage shift in GRA is a credible mechanism underlying the labor market penalties women face after marriage.

# 6 Conclusion

Motivated by the substantial literature documenting the labor market penalties women face after marriage in developing countries, this study examines how marriage and parenthood shape the evolution of individual gender role attitudes in the context of Egypt. Our results suggest that women experience a statistically significant shift toward more traditional gender role attitudes following marriage, whereas no comparable shift is observed after childbirth. No statistically significant change is observed among men after transitioning into marriage or becoming fathers.

Interestingly, this move toward more conservative views is largely driven by attitudes regarding women's participation in the workforce, particularly the belief that a full-time job harms the quality of a marriage. This raises an important question: is the observed shift in attitudes a reflection of the fact that some women exit the labor force after marriage, or could the traditionalization of attitudes itself help explain why women withdraw from the labor force? Our findings suggest the latter. Even among the sub-sample of women whose employment status remains unchanged after marriage, we observe a significant and negative effect of marriage on gender role attitudes, again primarily centered on views about women working. This provides suggestive evidence that the shift toward more conservative gender role attitudes may function as a key mechanism contributing to the well-documented decline in women's labor force participation following marriage.

Our results also offer suggestive evidence that cognitive dissonance may help explain the observed shift toward more conservative attitudes among women after marriage — a pattern driven specifically by the sub-sample of women who were relatively more progressive prior to marriage. Additionally, we observe a decline in the absolute distance between a woman's gender role attitudes and those of her husband following marriage,

pointing to the combined influence of both cognitive dissonance and changes in gender identity.

The findings of this study carry important policy implications. Effective policy interventions should go beyond expanding job opportunities for women and address the structural constraints that they face within their households and family networks. Early life interventions that target deeply entrenched beliefs about the incompatibility of women's work and marriage could play a significant role. Additionally, providing targeted support to newly married women, including flexible work arrangements, may help sustain their labor force participation post marriage.

## References

**Alesina, Alberto, Paola Giuliano, and Nathan Nunn.** 2013. "On the origins of gender roles: Women and the plough." *The quarterly journal of economics*, 128(2): 469–530.

**Anderson, Michael L.** 2008. "Multiple inference and gender differences in the effects of early intervention: A reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects." *Journal of the American statistical Association*, 103(484): 1481–1495.

**Assaad, Ragui, and Caroline Krafft.** 2024. "Introducing the Egypt Labor Market Panel Survey 2023."

**Assaad, Ragui, Caroline Krafft, and Irene Selwaness.** 2022. "The impact of marriage on women's employment in the Middle East and North Africa." *Feminist Economics*, 28(2): 247–279.

**Boelmann, Barbara, Anna Raute, and Uta Schonberg.** 2021. "Wind of change? Cultural determinants of maternal labor supply."

**Boinet, Césarine, Jonathan Norris, Agnese Romiti, Zhan Shi, and Paul Telemo.** 2024. "Beliefs on Children's Human Capital Formation and Mothers at Work."

**Bussolo, Maurizio, Jonah Rexer, and Margaret Triyana.** 2024. *Education, Social Norms, and the Marriage Penalty.* World Bank.

**Fortin, Nicole M.** 2015. "Gender role attitudes and women's labor market participation: Opting-out, aids, and the persistent appeal of housewifery." *Annals of Economics and Statistics*, , (117/118): 379–401.

**Gould, Eric D, and Guy Lichtinger.** 2024. "Child Penalties, Child Outcomes, and Family Culture." IZA Discussion Papers.

**Grinza, Elena, Francesco Devicienti, Mariacristina Rossi, and Davide Vannoni.** 2022. "How entry into parenthood shapes gender role attitudes: New evidence from the UK." *Feminist Economics*, 28(4): 194–220.

**ILO.** 2023. "The impact of care responsibilities on women's labour force participation." ILO statistical brief.

**Jayachandran, Seema.** 2015. "The roots of gender inequality in developing countries." *Annual review of economics*, 7(1): 63–88.

**Jayachandran, Seema.** 2020. "Social norms as a barrier to women's employment in developing countries." National Bureau of Economic Research.

**Jessen, Jonas.** 2022. "Culture, children and couple gender inequality." *European Economic Review*, 150: 104310.

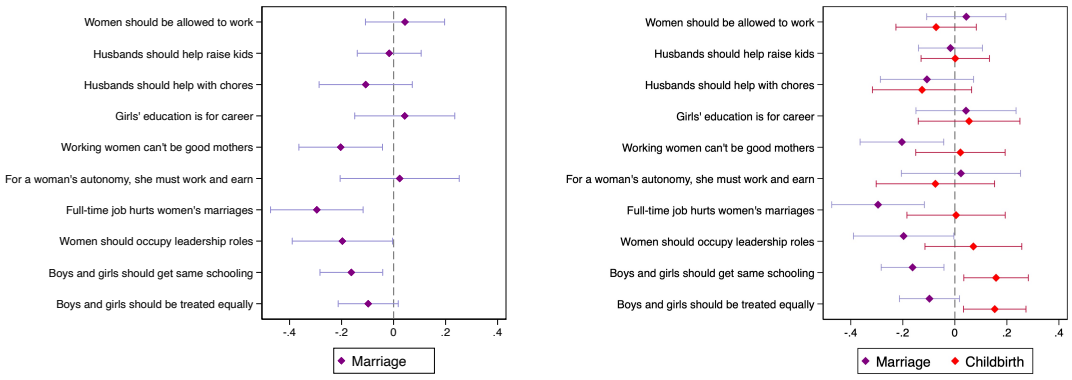
**Kleven, Henrik.** 2022. "The geography of child penalties and gender norms: Evidence from the United States." National Bureau of Economic Research.

**Kleven, Henrik, Camille Landais, and Gabriel Leite-Mariante.** 2024. "The child penalty atlas." *Review of Economic Studies*, rdae104.

**Kleven, Henrik, Camille Landais, and Jakob Egholt Søgaard.** 2019. "Children and gender inequality: Evidence from Denmark." *American Economic Journal: Applied Economics*, 11(4): 181–209.

# 7 Tables and Figures

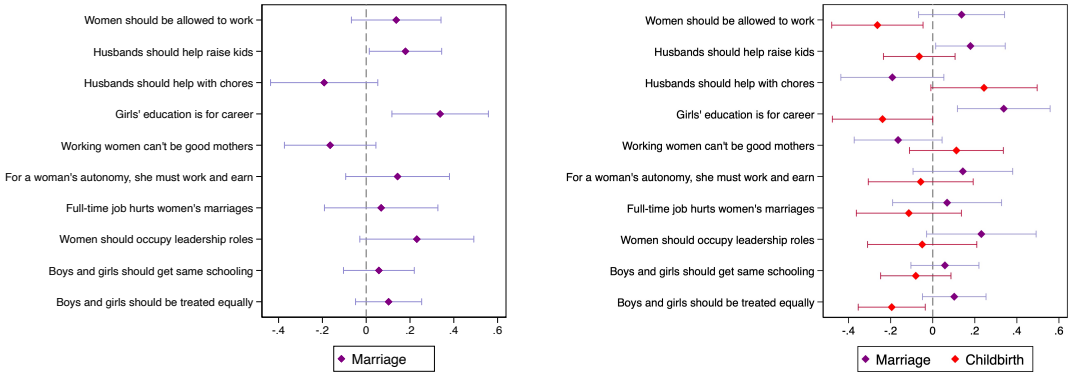
Figure 1: Different Components of the Norm Index: Women




(a) Impact of Marriage

(b) Impact of Marriage and Childbirth

Figure 2: Different Components of the Norm Index: Men




(a) Impact of Marriage

(b) Impact of Marriage and Childbirth

*Note:* This figures above presents estimates of the effects of marriage (Panel (a)) and childbirth (Panel(b)) on the different components of the GRA index for both men and women using ELMPS (Egypt Labor Market Panel Survey) data from 2006, 2018 and 2023. The sample includes individuals aged 15–65 and who got married between 2006 and 2023. Controls include age dummies, wealth status, area of residence, dummies for individual and parental education level. In addition to individual and year fixed effects, the model includes district-year fixed effects to account for district-specific unobservables that vary over time and affect the evolution of norms. Standard errors are clustered at the individual level.

Table 1: Gender Role Attitudes (GRA) index by gender, entry into marriage and survey wave

| | | Women | | | | | | Men | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2006 | | 2018 | | 2023 | | 2018 | | 2023 | |
| | N | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Unmarried | 3208 | 4.05 | 0.54 | 4.07 | 0.49 | 4.07 | 0.50 | 3.68 | 0.53 | 3.71 | 0.59 |
| Married b/w 2006–2018 | 3803 | 4.08 | 0.53 | 3.91 | 0.50 | 3.99 | 0.49 | 3.55 | 0.60 | 3.64 | 0.60 |
| Married b/w 2018–2023 | 1158 | 4.15 | 0.47 | 4.05 | 0.52 | 4.02 | 0.48 | 3.65 | 0.59 | 3.68 | 0.62 |

*Note:* The table denotes the mean and standard deviation of the norm index for men and women across ELMPS survey rounds 2006, 2018 and 2023. Each row corresponds to individuals with different marital statuses across the three rounds. "Unmarried" refers to individuals unmarried in all rounds. "Married b/w 2006 and 2018" refers to individuals who were unmarried in 2006 but got married by 2018. "Married b/w 2018 and 2023" refers to individuals who were unmarried in 2018 and got married by 2023. "N" denotes the number of unique individuals who are either Unmarried, Married b/w 2006 and 2018 or Married b/w 2018 and 2023.

Table 2: Gender Role Attitudes (GRA) index by gender, survey wave and individual characteristics

| | **Women** | | | **Men** | |
|---|---|---|---|---|---|
| | 2006 | 2018 | 2023 | 2018 | 2023 |
| **Age Group:** | | | | | |
| Over 30 | 4.04 | 3.97 | 4.00 | 3.59 | 3.66 |
| Under 30 | 4.08 | 3.98 | 4.04 | 3.64 | 3.71 |
| **Wealth Group:** | | | | | |
| Above Median | 4.13 | 4.09 | 4.09 | 3.72 | 3.76 |
| Below Median | 4.01 | 3.87 | 3.95 | 3.55 | 3.62 |
| **Education Categories:** | | | | | |
| Illiterate | 3.80 | 3.62 | 3.76 | 3.37 | 3.49 |
| Reads and Writes | 3.92 | 3.83 | 3.81 | 3.48 | 3.49 |
| Less than Intermediate | 4.06 | 3.94 | 3.93 | 3.62 | 3.56 |
| Intermediate | 4.16 | 4.02 | 4.05 | 3.63 | 3.69 |
| Above Intermediate | 4.45 | 4.07 | 4.10 | 3.63 | 3.80 |
| University | 4.34 | 4.18 | 4.13 | 3.80 | 3.84 |
| Post-Graduate | 4.55 | 4.35 | 4.31 | 4.00 | 3.92 |
| **Area of Residence:** | | | | | |
| Urban | 4.16 | 4.08 | 4.07 | 3.70 | 3.75 |
| Rural | 4.02 | 3.91 | 3.99 | 3.57 | 3.63 |
| N | 4136 | 4136 | 4136 | 5543 | 5543 |

*Notes:* The table denotes the mean of the GRA index for men and women across ELMPS survey rounds 2006, 2018 and 2023 and across different socio-demographic characteristics such as categories for age, education, area of residence (urban/rural). "N" denotes the number of observations.

Table 3: Impact of entry into marriage and parenthood on GRA, by gender

| | **Women** | | **Men** | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Married | -0.0849*** | -0.101** | -0.0377 | -0.0424 |
| | (0.0321) | (0.0392) | (0.0420) | (0.0531) |
| Child | | 0.0287 | | 0.00864 |
| | | (0.0404) | | (0.0573) |
| Individual fixed effects | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes |
| District-year fixed effects | Yes | Yes | Yes | Yes |
| Control Variables | Yes | Yes | Yes | Yes |
| Observations | 7927 | 7927 | 9264 | 9264 |
| Mean of dependent variable | 3.836 | 3.836 | 3.475 | 3.475 |
| Number of individuals | 3360 | 3360 | 4632 | 4632 |

*Note:* This table presents DID estimates of the effects of marriage and childbirth on the gender role attitudes of both men and women using ELMPS (Egypt Labor Market Panel Survey) data from 2006, 2018 and 2023. The sample includes individuals aged 15–65 and who got married between 2006 and 2023. Controls include age dummies, wealth status, area of residence, dummies for individual and parental education level. In addition to individual and year fixed effects, the model includes district-year fixed effects to account for district-specific unobservables that vary over time and affect the evolution of norms. Standard errors are clustered at the individual level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Impact of entry into marriage and parenthood on GRA: Heterogeneity by pre-marital GRA

| | **Women** | | **Men** | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Married | -0.0926** | -0.0602 | 0.000454 | 0.00381 |
| | (0.0446) | (0.0547) | (0.0539) | (0.0609) |
| Child | 0.0293 | 0.0892* | 0.0818 | -0.0532 |
| | (0.0466) | (0.0534) | (0.0636) | (0.0678) |
| Individual fixed effects | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes |
| District-year fixed effects | Yes | Yes | Yes | Yes |
| Control Variables | Yes | Yes | Yes | Yes |
| Observations | 4781 | 3143 | 5030 | 4218 |
| Mean of dependent variable | 3.980 | 3.617 | 3.691 | 3.219 |
| Number of individuals | 2002 | 1357 | 2515 | 2109 |

*Note:* This table presents DID estimates of the effects of marriage and childbirth on the GRA index for both men and women using ELMPS (Egypt Labor Market Panel Survey) data from 2006, 2018 and 2023. Columns 1 and 3 present results for individuals with a pre-marital GRA index above the median, classified as relatively progressive, while Columns 2 and 4 show results for those with a pre-marital GRA index below the median, classified as relatively more regressive. The sample includes individuals aged 15–65 and who got married between 2006 and 2023. Controls include age dummies, wealth status, area of residence, dummies for individual and parental education level. In addition to individual and year fixed effects, the model includes district-year fixed effects to account for district-specific unobservables that vary over time and affect the evolution of norms. Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Impact of Marriage and Parenthood on Spousal Gender Role Attitude Gap

| | Outcome: Distance from Spouse's Norms | |
|---|---|---|
| | **Women** | **Men** |
| Married | -0.0921** | 0.00399 |
| | (0.0422) | (0.0478) |
| Child | -0.0267 | 0.0281 |
| | (0.0391) | (0.0452) |
| Individual fixed effects | Yes | Yes |
| Year fixed effects | Yes | Yes |
| District-year fixed effects | Yes | Yes |
| Control Variables | Yes | Yes |
| Observations | 5306 | 4964 |
| Mean of dependent variable | 0.533 | 0.560 |
| Number of individuals | 2184 | 2482 |

*Note:* This table presents DID estimates of the effects of marriage and childbirth on the **absolute distance between an individual's GRA index and their spouse's** using ELMPS data from 2006, 2018, and 2023. Note that the spouse's post-marriage norms are used as a fixed reference, since we cannot match women to their husbands before marriage as they were part of different households. The sample includes individuals aged 15–65 and who got married between 2006 and 2023. Controls include age dummies, wealth status, area of residence, dummies for individual and parental education level. In addition to individual and year fixed effects, the model includes district-year fixed effects to account for district-specific unobservables that vary over time and affect the evolution of norms. Standard errors are clustered at the individual level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Effect of gender role attitudes on married women's labor force participation

| | OLS | IV-2SLS | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Norm Index | 0.132*** | 0.124*** | 0.135*** |
| | (0.0129) | (0.0435) | (0.0438) |
| Mean of dependent variable | 0.214 | 0.214 | 0.214 |
| Kleibergen-Paap rk LM | | 147.2 | 148.9 |
| Cut-off for 10% bias | | 54.11 | 54.21 |
| Observations | 11351 | 11346 | 11346 |

*Note:* This table presents OLS and IV-2SLS estimates of the effects of gender role attitudes on married women's labor supply using ELMPS (Egypt Labor Market Panel Survey) data from 2018. Column (1) denotes estimates from a OLS regression of GRA index on an indicator for labor force participation. Column (2) denotes results from a IV-2SLS regression where the GRA index of an individual's peers (defined as individuals in the same age-sex-education and region of residence category) is used to instrument the GRA index of the married woman. Column (3) presents IV-2SLS results, after controlling for the employment rate of the woman's peers. Controls include age dummies, wealth status, dummies for individual and parental education level, and region of residence fixed effects. Robust standard errors clustered at the PSU level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Effect of parent's norms on married women's labor supply

| | Outcome: Respondent's Labor Force Participation Rate | | | |
|---|---|---|---|---|
| | OLS | IV-2SLS | OLS | IV-2SLS |
| Mother's Norm Index | 0.0637*** | 0.157*** | | |
| | (0.0194) | (0.0502) | | |
| Father's Norm Index | | | 0.0317* | 0.0393 |
| | | | (0.0164) | (0.0535) |
| Mean of dependent variable | 0.198 | 0.197 | 0.186 | 0.186 |
| Kleibergen-Paap rk LM | | 168.3 | | 101.9 |
| Cut-off for 10% bias | | 54.39 | | 61.87 |
| Observations | 2563 | 2543 | 1761 | 1751 |

*Note:* This table presents OLS and IV-2SLS estimates of the effects of mother and father's gender role attitudes on married women's labor supply using ELMPS (Egypt Labor Market Panel Survey) data from 2018. The GRA index of an individual's peers (defined as individuals in the same age-sex-education and region of residence category) is used to instrument their own GRA index. Controls include age dummies, wealth status, dummies for individual and parental education level, and region of residence fixed effects. Robust standard errors clustered at the PSU level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Effect of husband and parent-in-law's norms on married women's labor supply

| | Outcome: Respondent's Labor Force Participation Rate | | | | | |
|---|---|---|---|---|---|---|
| | OLS | IV-2SLS | OLS | IV-2SLS | OLS | IV-2SLS |
| Husband's Norm Index | 0.118*** | 0.0805** | | | | |
| | (0.0103) | (0.0341) | | | | |
| Mother-In-Law's Norm Index | | | 0.0360** | 0.170* | | |
| | | | (0.0171) | (0.0976) | | |
| Father-In-Law's Norm Index | | | | | 0.0460** | -0.0336 |
| | | | | | (0.0184) | (0.143) |
| Mean of dependent variable | 0.214 | 0.214 | 0.197 | 0.197 | 0.178 | 0.179 |
| Kleibergen-Paap rk LM | | 206.9 | | 53.54 | | 14.18 |
| Cut-off for 10% bias | | 79.02 | | 21.32 | | 12.63 |
| Observations | 11236 | 11211 | 3388 | 3379 | 2003 | 1994 |

*Note:* This table presents OLS and IV-2SLS estimates of the effects of mother-in-law and father-in-law gender role attitudes on married women's labor supply using ELMPS (Egypt Labor Market Panel Survey) data from 2018. The GRA index of an individual's peers (defined as individuals in the same age-sex-education and region of residence category) is used to instrument their own GRA index. Controls include age dummies, wealth status, dummies for individual and parental education level, and region of residence fixed effects. Robust standard errors clustered at the PSU level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

# A Appendix

Table A.1: Impact of marriage and childbirth on labor force participation

| | **Women** | | **Men** | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Married | -0.174*** | -0.112*** | 0.0575*** | 0.0548** |
| | (0.0287) | (0.0402) | (0.0140) | (0.0231) |
| Child | | -0.0796** | | 0.00354 |
| | | (0.0339) | | (0.0213) |
| Individual fixed effects | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes |
| District-year fixed effects | Yes | Yes | Yes | Yes |
| Control Variables | Yes | Yes | Yes | Yes |
| Observations | 7303 | 7303 | 10262 | 10262 |
| Mean of dependent variable | 0.257 | 0.257 | 0.885 | 0.885 |
| Number of individuals | 1725 | 1725 | 2342 | 2342 |

*Note:* This table presents DID estimates of the effects of marriage and childbirth on labor force participation for both women and men using ELMPS (Egypt Labor Market Panel Survey) data from 1998, 2006, 2012, 2018 and 2023. The sample includes individuals aged 15–65 and who got married between 1999 and 2023. The treatment indicator (married/child) is 1 if the individual is married or has a child in time t, 0 otherwise. Controls include age dummies, wealth status, area of residence and dummies for individual and parental education level. The model includes individual, year and governorate-year fixed effects, with standard errors clustered at the individual level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.2: Impact of marriage and childbirth on GRA: Subsample with no change in labor market status

| | **Women** | | **Men** | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Married | -0.157** | -0.159** | -0.00601 | -0.0123 |
| | (0.0669) | (0.0728) | (0.0669) | (0.0747) |
| Child | | 0.00396 | | 0.0117 |
| | | (0.0619) | | (0.0687) |
| Individual fixed effects | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes |
| District-year fixed effects | Yes | Yes | Yes | Yes |
| Control Variables | Yes | Yes | Yes | Yes |
| Observations | 3294 | 3294 | 2900 | 2900 |
| Mean of dependent variable | 3.783 | 3.783 | 3.442 | 3.442 |
| Number of individuals | 1372 | 1372 | 1450 | 1450 |

*Note:* This table reports DID estimates of the effects of marriage and childbirth on the GRA index for men and women, using ELMPS data from 2006, 2018, and 2023, **restricted to the sub-sample of individuals whose labor market status remained unchanged after marriage**. The sample includes individuals aged 15–65 and who got married between 2006 and 2023. Controls include age dummies, wealth status, area of residence, dummies for individual and parental education level. In addition to individual and year fixed effects, the model includes district-year fixed effects to account for district-specific unobservables that vary over time and affect the evolution of norms. Standard errors are clustered at the individual level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.3: Impact of marriage and childbirth on GRA: Using Swindex

| | **Women** | | **Men** | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Married | -0.184*** | -0.225*** | -0.0563 | -0.0508 |
| | (0.0594) | (0.0711) | (0.0695) | (0.0897) |
| Child | | 0.0735 | | -0.00992 |
| | | (0.0748) | | (0.0985) |
| Individual fixed effects | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes |
| District-year fixed effects | Yes | Yes | Yes | Yes |
| Control Variables | Yes | Yes | Yes | Yes |
| Observations | 7927 | 7927 | 9264 | 9264 |
| Mean of dependent variable | 3.836 | 3.836 | 3.475 | 3.475 |
| Number of individuals | 3360 | 3360 | 4632 | 4632 |

*Note:* This table presents DID estimates of the effects of marriage and childbirth on an alternate measure of the GRA index for both men and women using ELMPS (Egypt Labor Market Panel Survey) data from 2006, 2018 and 2023. **Specifically, the GRA index is constructed using standardized weighted index (swindex in STATA)**. The sample includes individuals aged 15–65 and who got married between 2006 and 2023. Controls include age dummies, wealth status, area of residence, dummies for individual and parental education level. In addition to individual and year fixed effects, the model includes district-year fixed effects to account for district-specific unobservables that vary over time and affect the evolution of norms. Standard errors are clustered at the individual level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.