



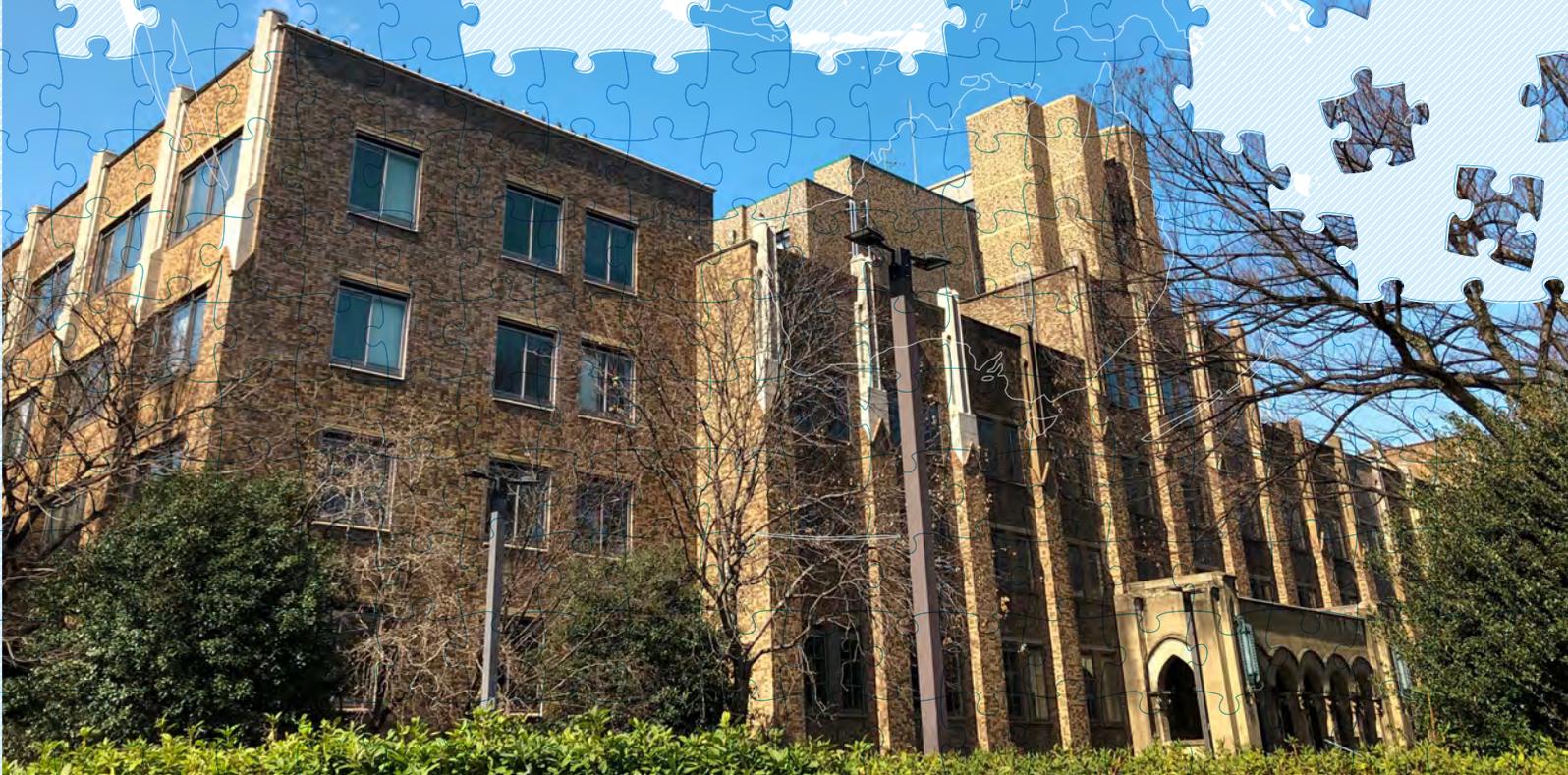
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Growing up with involved fathers: Adolescent paternal involvement, parental employment type, and adult gender ideology in Japan



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Growing up with involved fathers: Adolescent paternal involvement, parental employment type, and adult gender ideology in Japan

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Abstract

Recent research on paternal involvement in housework (role modeling effect) and childcare (father–child interaction effect) has primarily focused on early and middle childhood, assessing only short-term impacts on children’s and adolescents’ gender attitudes. However, less is known about whether and how fathers’ domestic participation during adolescence—a formative period for identity development and worldview formation—shapes gender ideology in adulthood. Adolescents’ exposure to paternal domestic roles occurs within diverse family contexts shaped by parental employment configurations, which structure household labor and decision-making and may moderate the effects of paternal involvement. Utilizing longitudinal data from the Japanese Life Course Panel Study (JLPS), this study investigates how paternal domestic involvement at age 15 influences adult gender ideology across male-breadwinner and dual-earner households. The analyses reveal that paternal involvement in housework at age 15 is consistently associated with more egalitarian gender attitudes in adulthood. Moreover, paternal childrearing in egalitarian dual-earner families fosters progressive gender ideology, whereas in male-breadwinner families it tends to reinforce traditional beliefs. These associations are notably stronger among father–son dyads than father–daughter dyads. Overall, these findings underscore the enduring significance of fathers’ domestic roles during adolescence and highlight the importance of considering parental employment context when examining paternal domestic participation as a situated practice contingent on specific family settings.

Keywords Adolescence, gender ideology, paternal involvement, parental employment, Japan

1. Introduction

The intergenerational transmission of gender ideology has long been a central concern in sociological research. While previous studies have established the influential role of maternal characteristics—such as mothers’ gender role attitudes, labor force participation, and educational attainment—in shaping children’s gender attitudes (e.g., Cunningham, 2001a, 2001b; Gupta, 2006; McGinn et al., 2018; Moen et al., 1997), recent decades have witnessed a growing recognition of fathers’ contributions to gender socialization. The increased paternal participation in parenting and housework (Milkie et al., 2025; Pailhé et al., 2021; Sayer et al., 2004) and the rise of the “new fathering” ideal emphasizing fathers’ nurturing roles within domestic life (Schoppe-Sullivan & Fagan, 2020) have prompted scholars to consider how fathers’ domestic involvement shapes children’s gender ideology, particularly through time spent on housework (role modeling effect) and time spent on childcare/rearing (parenting or father-child interaction effect) (Cano & Hofmeister, 2023; Herbaut et al., 2025).

However, existing research has largely focused on the short-term effects of paternal domestic involvement during early childhood on children’s or adolescents’ gender attitudes (e.g., Cano & Hofmeister, 2023). From a life-course perspective, less is known about whether and how fathers’ domestic participation during adolescence—a critical formative period for identity and worldview development—exerts an enduring impact on adult children’s gender ideology. Adolescents, with greater cognitive maturity and exposure to external influences (Steinberg & Morries, 2001), are especially equipped to observe, interpret, and internalize parental behaviors, making father involvement during this stage especially more profound and long-lasting. Yet, the distinct impacts of fathers’ housework versus childcare involvement during adolescence, and their long-term consequences for gender ideology, remain underexplored.

Furthermore, adolescents' exposure to fathers' domestic roles occurs within varied family contexts shaped by parental employment configurations, which structure the division of paid and unpaid work and household decision-making (Blossfeld & Drobnič, 2004; Craig & Mullan, 2011). According to the situational perspective on fatherhood (Marsiglio et al., 2005; Schoppe-Sullivan & Fagan, 2020), the effects of paternal involvement—whether through housework or childcare—may manifest differently depending on parental employment arrangements. In egalitarian dual-earner families, fathers' active participation may reinforce egalitarian role modeling and father-adolescent interactions, promoting long-lasting progressive gender attitudes. Conversely, in traditional breadwinner–homemaker families, paternal involvement—though less common—may stand out as a challenge to conventional gender norms, potentially exerting a stronger impact on children's gender ideology. However, father-child interactions in traditional families may reinforce, rather than mitigate, conventional gender attitudes, due to persistent patriarchal authority and gendered expectations. Thus, the moderating role of parental employment configuration remains theoretically ambiguous and empirically understudied.

This study makes novel contributions by addressing these gaps through an investigation situated in Japan, a developed economy where gender-essentialist norms and persistent inequalities in both the workplace and home remain pronounced (Brinton et al., 2018; Brinton & Lee, 2016). Japan's entrenched male-breadwinner model and low levels of paternal domestic involvement provide a unique context for examining whether and how even modest paternal participation during adolescence could influence the gender ideology of the next generation. At the same time, recent shifts in fatherhood ideals and practices (Ishii-Kuntz, 2015) and the gradual rise of dual-income households offer an opportunity to assess how changes in paternal roles are reflected in adult children's gender attitudes.

By examining the long-term effects of fathers' domestic involvement during adolescence—distinguishing between housework and childrearing involvement—and considering variations across parental employment types, this study provides new empirical evidence on the mechanisms and conditions under which paternal behaviors shape adult children's gender ideology. In doing so, it advances our understanding of intergenerational gender socialization within a gender-inegalitarian society and highlights the enduring significance of fathers' domestic roles during adolescence—a pivotal life stage of development.

2. Background

2.1. The Intergenerational Transmission of Gender: The Role of Fathers

Research on the intergenerational transmission of gender ideology seeks to understand how parents' characteristics, beliefs, and behaviors shape their offspring's gender role attitudes and practices over the life course. Extensive studies have demonstrated that mothers' employment, educational attainment, and egalitarian gender attitudes are key factors in fostering progressive gender ideology in their offspring (Davis & Greenstein, 2009; McGinn et al., 2018; Moen et al., 1997).

In recent years, the role of fathers in shaping gender ideology and behaviors has received growing scholarly attention. This shift reflects recognition of fathers' evolving behavioral patterns and increasing contribution to the domestic sphere. While the “stalled gender revolution” literature notes that men's participation in household labor still lags behind women's entry into the workforce (England, 2010), evidence shows that fathers—especially those with higher education—are becoming more involved in childcare and housework across many industrialized societies (Pailhé et al., 2021). In the U.S., studies have documented a narrowing gender gap in domestic work, with men's time spent on housework and childcare steadily rising over recent decades (Milkie et al., 2025; Sayer et al., 2004). Similarly, time-use analyses reveal that fathers in

less gender-egalitarian societies, such as Southern Europe, are increasingly participating in core housework and childcare tasks, contributing to a gradual gender convergence in unpaid labor (Altintas & Sullivan, 2017; Cano, 2019).

Alongside these demographic changes, research and cultural narratives about the “new father” emphasize warmth, intimacy, and active engagement in father-child relationships. This perspective highlights the essential role of paternal involvement in children’s development and well-being (Schoppe-Sullivan & Fagan, 2020). The image of the “new father” embodies an active, nurturing approach to childcare, emotional engagement, and parental responsibility, representing an alternative masculinity norm that fosters the development of egalitarian gender ideology (Offer & Kaplan, 2021).

Against this backdrop, a growing body of research has shown that fathers’ active involvement in the domestic sphere during early life is critical for fostering more egalitarian gender attitudes and behaviors in children later in life (Cano & Hofmeister, 2023; Cordero-Coma & Esping-Andersen, 2018; Cunningham, 2001a, 2001b; Evertsson, 2006; Herbaut et al., 2025; Perales et al., 2021). Recent studies identify two primary channels through which paternal domestic participation shapes children’s gender beliefs: involvement in housework and involvement in childcare (Cano & Hofmeister, 2023; Herbaut et al., 2025). First, gender socialization theory (Bem, 1981) posits that gender schemas are developed and reinforced within the family. Fathers’ participation in housework provides a role modeling effect, allowing children to observe, emulate, and internalize egalitarian gender attitudes and practices. This role modeling effect is also viewed as an imitation channel (Herbaut et al., 2025), including a social learning process as children learn and imitate attitudes and behaviors of significant others—such as fathers—in the family (Bandura, 1977). From the “doing gender” perspective (West & Zimmerman,

1987), fathers' engagement in traditionally feminine tasks can challenge and "undo" conventional gender stereotypes through repeated social interactions. The second pathway involves parenting or father-child interactions through fathers' involvement in childcare routines and responsibilities, known as the initiation channel (Cano & Hofmeister, 2023; Herbaut et al., 2025). This mechanism highlights the influence of fathers' parenting practices and styles on children's developmental and gender-relevant outcomes. Notably, because the father's role is less clearly defined than the mother's, paternal behaviors and relationships with children are especially sensitive to the surrounding contexts (Marsiglio et al., 2005).

2.2 Paternal Involvement in Formative Years: Theoretical Considerations

2.2.1 The Significance of Adolescence

Although recent studies have begun to distinguish between fathers' involvement in housework and childcare, most focus on early and middle childhood and assess only short-term effects on children's and adolescents' gender attitudes and behaviors. For example, using longitudinal data from Australia, Cano and Hofmeister (2023) found that fathers' time spent on housework and childcare at ages 6 and 12 was associated with more gender-egalitarian attitudes in children by ages 14 or 15, with housework involvement (such as cleaning, home maintenance, shopping or cooking) exerting a particularly strong influence on adolescents' gender-role attitudes. Similarly, Herbaut et al. (2025) reported that paternal involvement in housework and childcare during early childhood shaped gender-typed activities in sons' play at age 2 in France, though this effect was not observed for daughters.

From a life course perspective, adolescence represents a pivotal stage for identity formation and the development of enduring worldviews, including beliefs about gender roles (Steinberg & Morries, 2001). Although adolescence is a period when young people increasingly encounter

influences from peers, schools, and broader social environment, family remains a central context for gender socialization, and parental behaviors continue to exert a formative influence during these years (McHale et al., 2003). As adolescents acquire greater cognitive maturity and social awareness, they become more capable of critically observing and interpreting the division of labor and parental roles within their concrete household environment. Fathers' participation in household life during adolescence is therefore likely to have profound and lasting impacts through role modeling and interaction, shaping gender ideology well into adulthood. However, existing research has yet to simultaneously examine paternal participation in both housework and childrearing responsibilities during this crucial developmental period, nor has it explored how these distinct forms of involvement may differentially influence gender beliefs among adult children.

2.2.2 Variation by Parental Employment Type

A situational perspective conceptualizes fathers' behaviors as situated within specific family contexts (Marsiglio et al., 2005; Schoppe-Sullivan & Fagan, 2020), suggesting that adolescents' exposure to their fathers' domestic roles is further shaped by concrete family environment. Varied parental employment configurations create distinct family gender environments that structure household division of labor and decision-making (Blossfeld & Drobnič, 2004). Rapid shifts in parental employment arrangements over recent decades have also significantly shaped the exposure and experiences that influence adolescents' gender attitudes and the intergenerational transmission of gender ideology. In many Western countries, rising female labor force participation has led to a substantial increase in egalitarian dual-earner families and a corresponding decline in male-breadwinner households. For instance, in the U.S., the proportion of egalitarian couples—where both spouses earn about the same—rose from 11% to 29% during 1972-2022, while male-

breadwinner families decreased from 85% to 55%, though they still constitute a majority (Fry et al., 2023). This male-breadwinner model remains more prevalent in societies with traditional gender norms, such as Japan and South Korea.

Fathers' role modeling and father-child interaction channels in shaping children's gender ideology may vary across different parental employment configurations. One perspective posits that fathers' contribution to domestic life is so meaningful that its role in fostering progressive gender ideology is persistent and transcends concrete parental employment arrangements. If this is true, then we would expect *Hypothesis 1* (H1): *Paternal domestic involvement during adolescence is positively related to adult egalitarian gender ideology, regardless of parental employment configurations.*

Alternatively, the male-breadwinner family manifests the traditional "separate spheres" sex model that supports a rigid division of labor between men and women (Janssens, 1997). Regardless of wives' employment intensity, husbands' status as the sole or primary earner in the family enacts a set of traditional, gendered scripts and practices in the household. Men who are breadwinners often do not make meaningful and frequent contributions to housework chores and childcare responsibilities as their partners do. In contrast, dual-earner parents offer a more egalitarian division of labor and decision-making within the family for their adolescent children to repeatedly observe, emulate, and internalize their fathers' progressive views and behaviors supporting gender equity. Hence, it is possible that *Hypothesis 2a* (H2a): *Paternal domestic involvement in dual-earner families during adolescence is positively related to adult egalitarian gender ideology, an association stronger than that in male-breadwinner families.*

In contrast, some scholars argue that fathers' involvement in housework and parenting practice is viewed as "discretionary" in traditional male-breadwinner families (Crouter et al., 1987;

Hu, 2015), which may release stronger modeling and learning signals for children to imitate and internalize liberal gender beliefs and practices. Conversely, in dual-earner families supporting gender-equal arrangements in paid and unpaid work, fathers perform domestic work primarily in response to working mothers' needs and time deficit (Raley et al., 2012), not necessarily a self-driven behavior as that in male-breadwinner families. Hence, potential benefits of social learning from fathers' household behaviors in such families would be weaker in eliciting egalitarian gender ideology among children. This leads to ***Hypothesis 2b*** (H2b): *Paternal domestic involvement in male-breadwinner families during adolescence is positively related to adult egalitarian gender ideology, an association stronger than that in dual-earner families.*

The scenarios above generally anticipate positive role modeling and father-child interaction effects, albeit with varying magnitudes. Although there is less uncertainty about the positive signaling effect of fathers' active housework participation, ambivalence remains regarding how father-adolescent interactions unfold across different family employment arrangements. In male-breadwinner families, fathers' involvement with adolescent children may inadvertently reinforce adolescents' internalization of traditional gender schemas, as fathers often model and communicate, explicitly or implicitly, conventional gender expectations and the division of labor and decision-making tends to reinforce patriarchal authority. The concept of hegemonic masculinity (Connell & Messerschmidt, 2005) further explains how fathers, pressured to embody breadwinning and authority, may struggle to reconcile these norms with engaged parenting, resulting in ambivalent or contradictory gender socialization (Li et al. 2024). Qualitative longitudinal interviews in the UK illustrate these mechanisms, showing that fathers' initial efforts to "undo gender" often revert to entrenched traditional practices, thereby perpetuating patriarchal norms and authority within the family over time (Miller, 2011). Fathers' struggles to balance

masculine norms with new fatherhood ideals (Marsiglio & Roy, 2012) further limit their involvement in parenting that promotes egalitarian views in children (Cano & Hofmeister, 2023; Petts et al., 2018). These dynamics, especially pronounced in male-breadwinner families, lead to expect ***Hypothesis 3*** (H3): *Paternal involvement in parenting and childrearing during adolescence in male-breadwinner families is negatively linked to adult egalitarian gender ideology, whereas this effect is weaker or absent in dual-earner families.*

Although variation by child's gender is not the central focus, theories on parent-child attachment and same-gender filial preferences predict stronger bonds between same-gender parent-child dyads (McHale et al., 2003; Perales et al., 2018). Fathers tend to display a predilection for and spend comparatively more time with sons, whereas mothers have stronger bonds with and spend more time with daughters (Raley & Bianchi, 2006). Empirical studies show that fathers' attitudes and behaviors are stronger for sons, shaping their housework participation and gender-role attitudes into adulthood, while similar modeling effects are less evident for daughters (Cunningham, 2001a; Herbaut et al., 2025; Platt & Polavieja, 2016). Therefore, we expect ***Hypothesis 4*** (H4): *The associations between paternal domestic involvement and adult gender ideology are stronger for men than for women.*

In the above discussion, paternal domestic involvement is used in a broad sense, referring simply to fathers' participation in housekeeping and/or childrearing during adolescence, without distinguishing the frequency, intensity, or specific types of tasks. Our theoretical considerations emphasize that even the mere presence of paternal engagement in the domestic sphere serves as a key signal in the gender socialization process. While more nuanced distinctions could provide deeper insights, this general conceptualization remains theoretically meaningful for examining the relationship between paternal participation and adult gender ideology across different parental

employment arrangements. We interpret our findings within this scope and acknowledge potential limitations accordingly.

3. The Japanese Context

We test our hypotheses using data from Japan, a society often described as “gender-essentialist” due to persistent gender inequalities and deeply entrenched gender norms (Brinton & Lee, 2016). While there has been a gradual shift toward more progressive beliefs about gender, changes in public attitudes regarding the division of household labor and employment remain limited (Choe et al., 2014; Lee et al., 2010; Piotrowski et al., 2019). Recent survey data indicate that nearly 30% of Japanese married women and unmarried men and women support the traditional male-breadwinner-female-homemaker model, and 70% agree that mothers should not work when their children are young (National Institute of Population and Social Security Research 2017).

These enduring attitudes are both reflected in and reinforced by institutional and policy barriers embedded in Japan’s employment and family systems (Brinton & Lee, 2016; Raymo et al., 2015; Wang & Raymo, 2021). For example, the “lifetime employment” system and seniority-based wage structures in large firms have historically benefited men, providing job security and career advancement. In contrast, Japanese women remain disproportionately concentrated in nonstandard, part-time work, which offers limited stability, benefits, and career prospects (Wang & Raymo et al. 2021). Tax policies such as the spousal deduction further incentivize women’s withdrawal from full-time employment, while limited childcare provision and long working hours reinforce the expectation that mothers should prioritize domestic responsibilities. These structural arrangements perpetuate the male-breadwinner-female-homemaker norm and constrain the possibilities for more egalitarian divisions of labor within households (Nemoto, 2013).

In Japanese society that emphasizes women as the primary caregivers, it is unsurprising that men and fathers have long been documented to be less involved or even unavailable in housework and childcare duties (Ishii-Kuntz, 1994, 2013; Ishii-Kuntz et al., 2004). Comparative studies consistently show that Japanese men's contribution to housework and childcare ranks among the lowest in developed countries (Fuwa, 2004). Even within East Asia, recent data confirm this pattern and show that Japanese fathers spend significantly less time on domestic labor than their counterparts in other East Asian societies (Kan et al., 2022). For example, Japanese men spend approximately 39 minutes daily on domestic labor, compared to 2.5 hours among Japanese women, yielding one of the largest gender gaps in domestic work among OECD countries (Gender Equality Bureau, 2022).

The nature of fatherhood, however, is gradually evolving in Japan. While there have been some positive changes in Japanese men's domestic behaviors, particularly parenting practices, amid declining marriage and fertility rates (Ishii-Kuntz, 2013), these shifts remain modest compared to Western countries (Yeung, 2013). The emergence of "*ikumēn*" (men actively involved in childcare) signals nascent cultural recognition of alternative fathering roles (Ishii-Kuntz, 2015), particularly among dual-income households (Goldstein-Gidoni, 2019). Government policies promoting paternity leave have also incentivized fathers to share childcare responsibilities, but uptake remains low due to workplace norms that penalize men who prioritize family (Gender Equality Bureau, 2023; Holloway & Nagase, 2014). Anecdotal evidence suggests that the new fathering ideals do not always translate into meaningful changes in Japanese fathers' paternal practice, and fathers often struggle to balance work and family demands (Tan, 2023).

To some extent, the gradually evolving fatherhood in Japan reflects changes in household structure, with a shift away from the male-breadwinner model toward dual-income households.

Among married couples (wives aged 64 or younger), the percentage of traditional male-sole earner households (an employed husband and non-working wife) declined from 57.6% in 1985 to around 28.0% in 2021. In contrast, dual-income households increased from 42.4% to 72.0% during the same period (see Figure 1). However, this growth has been driven mainly by households where husbands are the primary earners and wives contribute supplemental income through part-time work (increasing threefold from 14.0% to 42.3%), reflecting Japanese women's concentration in nonstandard employment and the challenges they face in balancing work and family responsibilities (Mugiyama, 2024; Wang & Raymo, 2021). This arrangement continues to adhere to the male-breadwinner-female-homemaker gender norm, indicating the lingering dominance of traditional gender roles (Ogasawara, 2020; Tsutsui, 2016). In contrast, the proportion of gender-egalitarian dual-earner couples, where both spouses work full-time, has remained low (comprising less than one-third of married couples) and changed little over time.

[Figure 1 About Here]

Given these distinctive features, we investigate the intergenerational impacts of paternal involvement on children's gender ideology, focusing on variations across traditional male-breadwinner versus dual-earner families. Examining this process in Japan—a less gender-egalitarian society—adds valuable insights to the literature on the intergenerational transmission of gender ideology and situates our findings within broader East Asian and global trends. Although Japan's entrenched gender norms and institutional structures have historically limited paternal involvement in domestic and childcare activities, this context offers a unique vantage point for exploring how even minimal or symbolic paternal participation can influence gender socialization. While the relatively low levels of paternal engagement may constrain variation and limit generalizability to more egalitarian societies, the gradual shifts in Japanese fatherhood and family

structures offer an opportunity to assess how changes in paternal roles are reflected in the gender attitudes of the next generation. Thus, despite certain limitations, the Japanese context yields important insights into the dynamics of gender reproduction in societies where traditional norms remain strong.

4. Methods

4.1 Data and Sample

We draw on data from the Japanese Life Course Panel Surveys (JLPS) (<https://csrda.iss.u-tokyo.ac.jp/english/socialresearch/>), a nationally representative longitudinal survey conducted by the University of Tokyo from 2007 to 2023 (waves 1-17; see Ishida [2013] for details on sampling and data collection). The JLPS provides a unique opportunity to examine the long-term effects of paternal involvement on adult children's gender attitudes and behaviors, as it contains detailed retrospective information on respondents' childhood family experiences and tracks their gender-related outcomes into young and middle adulthood. The initial JLPS sample in 2007 comprised respondents aged 20-40. To maintain representativeness and address attrition, the survey incorporated replenished samples in 2011 (adults aged 20-40) and 2019 (adults aged 20-31), thereby ensuring adequate representation across different age cohorts while preserving longitudinal integrity (Ishida et al., 2020).

Our analysis focuses on respondents' gender ideology (see measurement below), utilizing data from odd-numbered waves (waves 1, 3, 5, 7, 9, 11, 13, 15 and 17, spanning 2007-2023), in which respondents were asked about their views on gender roles, work, and family (N = 7141 respondents; 32923 observations). We took a complete-case approach and excluded observations with missing values on the outcome or independent variables (ranging from 0.1% to 4.5%

missingness). The final analytical sample consists of 29004 observations from 6556 respondents (3049 men and 3507 women).

4.2 Measures

Gender ideology In each odd-numbered wave, respondents indicated their agreement with three statements reflecting gendered division of labor: (1) Men’s job is to earn money, women’s job is to take care of the home and family (“separate spheres”); (2) Children under school age suffer if their mother works outside the home (“maternal employment”); and (3) Having a job is the best way for women to be independent (“importance of work”). These items capture key components of gender ideology with established validity and reliability (Davis & Greenstein, 2009). Responses were recorded on a five-point Likert scale (1 = strongly agree to 5 = strongly disagree). To ensure consistency, we reverse-coded the third item so that higher scores indicate more egalitarian attitudes. We calculated a total score summing up three questions (range: 3-15), with higher values denoting greater egalitarianism. For ease of results interpretation, we standardized the total score with a mean of 0 and a standard deviation (SD) of 1 within our analytical sample. Analyses of individual items yielded qualitatively similar results (available upon request). Although the JLPS also collected data on housework behaviors (e.g., preparing meals, laundry, and cleaning the house), the response options were inconsistent across waves and lacked detailed time-use metrics; thus, our analysis focuses exclusively on gender ideology.

Paternal domestic involvement Upon their initial entry into the survey, respondents retrospectively reported their fathers’ domestic participation at age 15 via a global question: “When you were 15 years old (when you graduated middle school), what kind of person was your father?” Response options included: (1) “he was the kind of person who relied on my mother for both housework and childrearing,” (2) “he was the kind of person who relied on my mother for housekeeping but

participated in childrearing,” (3) “he was the kind of person who participated in housekeeping but relied on my mother for childrearing,” (4) “he was the kind of person who participated in both housework and childrearing,” and (5) “he was absent at the time.” We constructed two key binary indicators: paternal involvement in housework (coded 1 for responses 3 and 4; 0 otherwise) and paternal involvement in childrearing (coded 1 for responses 2 and 4; 0 otherwise). In supplemental analyses, we created a four-category variable for paternal domestic involvement, combining categories 1 and 5 as “absent father” with minimal contribution to domestic labor, to assess the robustness of our findings.

Parental employment type Respondents reported their parents’ detailed employment status at age 15: manager/director, full-time employee, part-time worker (including contract, temporary/seasonal, or commission worker), self-employed/entrepreneur, family worker, side work (piecework), or unemployed (including full-time housemaker). We adopt a broad definition to define male-breadwinner households as those in which fathers were the sole or primary earners working full-time jobs (including managers), and mothers were unemployed or worked part-time (including self-employed, family workers, and side work). Dual-earner households were those in which both parents worked full-time (including managers). All other households were grouped as “other.”

Other covariates We control for a range of adolescent family characteristics that may influence both fathers’ domestic behaviors and adult gender ideology, as well as respondents’ sociodemographic traits at the time of survey. Adolescent family background (at age 15) includes whether fathers and mothers held a college degree, mothers’ occupation, and family warmth. Respondents’ characteristics include sex, birth cohorts, whether having a college degree, employment status (regular, nonstandard/part-time, or unemployed), personal annual income in

the previous year (in 10,000 JPY, logged and constant at the 2020 level), weekly work hours, marital status (single, married, divorced/widowed), number of children, and number of siblings. Year fixed effects and survey sample dummies (youth, middle-aged, or refreshed youth) are included to account for period and sample variation.

4.3 Analytical Strategy

We conduct multivariate analyses separately by respondent gender. For both adult sons and daughters, we estimate Ordinary Least Squares (OLS) regressions predicting gender ideology as a function of paternal domestic involvement, parental employment types, and covariates. Our baseline additive model is:

$$Y_{it} = \beta_0 + \beta_1 PH_i + \beta_2 PC_i + \beta_3 PE_i + \gamma X + \varepsilon_{it} \quad \text{Eq.(1)}$$

where Y_{it} represents the egalitarian gender ideology score for individual i at time t ; PH_i and PC_i are binary indicators denoting paternal involvement in housework and childrearing, respectively, at age 15 for individual i ; PE_i captures the parental employment arrangement at age 15 (reference group = male-breadwinner families). X is a vector of covariates, including adolescent family characteristics, respondents' sociodemographic information at each survey wave, and dummy variables for survey wave and sample type. Coefficients β_1 and β_2 estimate the average effects of paternal housework and childrearing on adult children's gender ideology, net of all other factors.

To examine whether the effects of paternal involvement vary by parental employment arrangement, we further estimate an interactive model:

$$Y_{it} = \delta_0 + \delta_1 PH_i + \delta_2 PC_i + \delta_3 PE_i + \delta_4 PH_i \times PE_i + \delta_5 PC_i \times PE_i + \gamma X + \varepsilon_{it} \quad \text{Eq.(2)}$$

This model includes interaction terms between paternal involvement and parental employment types at age 15. The main coefficients δ_1 and δ_2 represent the effects of paternal housework and childrearing, respectively, on gender ideology among those raised in male-breadwinner families

(the reference group). The interaction coefficients δ_4 and δ_5 capture the differential effects of paternal involvement on gender ideology for individuals raised in dual-earner families compared to those from male-breadwinner families.

5. Results

5.1 Main Findings

Table 1 presents descriptive statistics for all variables in the full sample and separately by sex. Consistent with gender patterns observed in other countries (Cotter et al., 2011; Davis & Greenstein, 2009), Japanese women reported more progressive gender attitudes than men (0.14 vs. -0.18). Regarding paternal involvement during adolescence, fathers' participation in childrearing was more than twice as prevalent as their involvement in housework (44.0% vs. 20.5% in the full sample), a pattern consistent for both men and women. This notable disparity suggests that Japanese fathers are more likely to engage in childcare or parenting activities than in routine housework. Additionally, men reported higher levels of paternal participation in both housework and childrearing at age 15 compared to women. This difference may reflect genuine variation in fathers' domestic involvement by the child's gender, or it may be attributable to men's tendency to overreport their fathers' domestic contributions. Over half of respondents grew up in traditional male-breadwinner families, where fathers were the sole or primary earners, while only about 15% reported dual-earner families. Men were more likely to report growing up in male-breadwinner families, whereas women were more likely to report dual-earner families at age 15.

Regarding other family characteristics at age 15, women were more likely than men to have mothers with a college or university degree and to report a warm family atmosphere. The sample was predominated composed of respondents born in the 1970s and 1980s, followed by those born in the 1960s and 1990s, with a high proportion of college graduates (approximately 70%). Marked

gender differences were evident in employment status: nearly 80% of men were regular employees, compared to only 38.4% of women; 40.3% of women were nonstandard workers, versus 16.2% of men; and over one-fifth of women were unemployed, compared to just 3.9% of men. These gendered patterns in employment are mirrored in income disparities, with men's annual earnings more than double those of women. Furthermore, women worked fewer hours, were less likely to be single, and tended to have more children and siblings than men.

[Table 1 About Here]

Table 2 displays mean gender ideology scores by paternal involvement (housework and childrearing) and parental employment types at age 15. As shown in Panel A, men whose fathers were involved in housework at age 15 generally held more egalitarian gender attitudes than those whose fathers were not involved, a pattern observed across all family types (vertical comparison between "Yes" vs. "No" rows). The increase in egalitarian gender ideology was most pronounced among men from dual-earner families (0.21 SD, $p < 0.001$), while the corresponding increase was smaller in male-breadwinner families (0.04 SD, $p < 0.10$). Men from dual-earner families also exhibited more egalitarian gender ideology when their fathers participated in childrearing (0.15 SD, $p < 0.001$). In contrast, men from male-breadwinner families reported more traditional gender attitudes if their fathers contributed to childrearing (-0.24 vs. -0.19, $p < 0.05$). Panel B shows that women also reported more egalitarian attitudes if they were from dual-earner households with fathers involved in either housework or childrearing (0.11 SD and 0.13 SD increase, $p < 0.01$). However, among women growing up in male-breadwinner families, their gender attitudes did not alter much by their fathers' domestic participation. These descriptive patterns will be further examined through multivariate analyses to account for potential confounding factors.

[Table 2 About Here]

Table 3 presents selected OLS regression results predicting gender ideology as a function of paternal involvement during adolescence, parental employment types, and other covariates (see full results in Online Appendix Table A1). Both additive and interactive models were estimated for the full sample and separately by sex. Across men and women, paternal housework was associated with a 0.045 SD increase in egalitarian gender attitudes ($p < 0.01$), while paternal childrearing had little overall effect (-0.014 SD, insignificant). The coefficient of paternal housework was larger among men (0.059 SD, $p < 0.05$) but was smaller and statistically insignificant among women (the gender difference is significant at the 0.10 level). This pattern provides partial support for **H4**, indicating stronger intergenerational transmission of gender ideology via paternal housework in father-son dyads compared to father-daughter dyads.

Results from interactive models offer important insights into the contextual specificity of paternal influences. In the full sample, the main coefficient of paternal housework indicates a positive association with egalitarian gender ideology among those raised in male-breadwinner families (0.041 SD, $p < 0.05$), and a similarly positive association among those from dual-earner families (0.041+0.045=0.086 SD, $p < 0.05$). However, the interaction term between paternal housework and dual-earner households, while positive, is not statistically significant. This suggests that the beneficial effect of paternal housework on gender egalitarianism does not significantly differ by parental employment type. Overall, these findings point to a relatively universal effect of paternal involvement in housework in fostering egalitarian gender attitudes into adulthood, lending partial support to **H1**. Notably, these effects are primarily observed among men, but not among women (consistent with **H4**).

In contrast, the relationship between paternal involvement in childrearing and gender ideology is more complex. For the full sample, the coefficient for paternal childrearing is

significantly negative, indicating that paternal childrearing was related to more traditional gender attitudes among adult children from male-breadwinner households (-0.047 SD, $p < 0.01$), particularly among men (-0.076 SD, $p < 0.01$) but not among women. However, the interaction terms between paternal childrearing and dual-earner households are positive and of greater magnitude (0.089 SD, $p < 0.05$), indicating that the negative effect of paternal childrearing is absent in dual-earner families. In fact, paternal childrearing was associated with more egalitarian gender ideology within dual-earner households ($-0.047 + 0.089 = 0.042$, $p < 0.05$ among the overall sample; $-0.076 + 0.144 = 0.068$, $p < 0.05$ among men). These patterns support **H3**: Paternal childcare in male-breadwinner families tends to reinforce traditional gender ideology, whereas paternal childcare in dual-earner families promotes egalitarian gender attitudes. The absence of significant variation in the effects of paternal involvement across parental employment configurations among women is consistent with **H4**, confirming weaker intergenerational transmission of gender through father-daughter dyads, particularly regarding the context-specific impact of paternal childrearing.

[Table 3 About Here]

For better visualization, Figure 2 displays predicted gender ideology scores by paternal involvement and parental employment type. In the upper panel, men whose fathers did not participate in housework exhibited similar gender ideology across male-breadwinner and dual-earner families. Men whose fathers were involved in housework but raised in male-breadwinner families also showed similar gender attitudes to those whose fathers were not involved. Only men who reported paternal housework participation and grew up in dual-earner families held significantly more egalitarian gender attitudes. The lower panel illustrates a sharply divergent pattern for paternal childrearing: men's gender ideology did not differ across households when

fathers were not involved in childrearing, but men raised in male-breadwinner families with paternal childrearing involvement reported more traditional gender attitudes. Conversely, paternal childrearing promoted more egalitarian gender attitudes among men from dual-earner families. Women, in general, exhibited much more progressive gender attitudes than men, regardless of paternal domestic participation or family type.

[Figure 2 About Here]

Regarding other covariates, mother's college education (but not father's) was associated with more egalitarian gender attitudes, particularly among adult sons. Compared to mothers in managerial/professional occupations, having mothers in other occupational categories or unemployed was associated with more traditional gender attitudes. A warm family atmosphere at age 15 was linked to traditional gender attitudes, especially for women. Respondents' own college education and income (for women only) were strongly associated with egalitarian gender ideology. Nonstandard employment and unemployment were negatively associated with egalitarian gender attitudes, particularly among women. Weekly work hours tended to reinforce traditional masculinity among men but challenge traditional femininity among women. Compared to married individuals, those who were divorced or widowed held more egalitarian attitudes, while single respondents appeared to report more conservative gender ideology. The number of children was negatively associated with egalitarian gender attitudes, suggesting a possible adaptation process whereby parents' gender attitudes become more traditional following childbirth.

5.2 Supplemental Analyses

To corroborate and further elucidate our main findings, we conducted several sensitivity checks. First, recognizing that the dummy indicators for paternal housework and childrearing are not mutually exclusive, we re-estimated the interactive models for men and women using an

alternative four-category measure of paternal domestic involvement, with “absent father/minimal involvement” as the reference group. The results closely mirror our primary findings (see Online Appendix Table A2): among men, paternal involvement in housework only was associated with more egalitarian gender ideology, with this relationship consistent across both male-breadwinner and dual-earner families. Paternal involvement in childrearing only tended to reinforce traditional gender ideology in male-breadwinner families, but this association reversed—becoming positive—in dual-earner families. Fathers’ participation in both housework and childrearing had little influence on men’s gender ideology in male-breadwinner families, likely due to offsetting influences, but significantly promoted egalitarian attitudes among those raised in dual-earner families. Among women, there was little variation in the association between paternal involvement and gender ideology across family types, except that paternal involvement in childrearing only was positively related to egalitarian gender attitudes for women from dual-earner families, but not for those from male-breadwinner families.

Second, although we controlled for fathers’ and mothers’ education as proxies for parental gender attitudes, following previous research (Cordero-Coma & Esping-Andersen, 2018), direct measures of parental gender attitudes were unavailable due to data limitations. To mitigate this concern, we constructed a summary measure of respondents’ attitudes toward marriage and family life and included it in the model as an additional proxy for parental gender attitudes. We assume that adult children’s progressive attitudes toward marriage and family life are, to some extent, inherited from parents with egalitarian gender attitudes. Results indicate that more open-minded attitudes toward marriage and family life were significantly correlated with more egalitarian gender ideology; however, the main patterns regarding paternal involvement and gender ideology remain robust after controlling for these attitudes (Online Appendix Table A3).

Third, we further disaggregated male-breadwinner families into male-sole earner families (father employed full-time, mother not working) and male-primary earner families (father employed full-time, mother employed part-time) to examine differences in the intergenerational transmission of gender ideology within this broad category. Results reveal that the contrasting effects of paternal housework and childrearing on men's gender ideology were primarily observed among those who grew up in male-primary earner families. In male-sole earner families, these effects were attenuated and lost statistical significance. Notably, paternal involvement in childrearing was also significantly negatively associated with gender ideology among women raised in male-primary earner families, albeit with a much smaller magnitude compared to men (Online Appendix Table A4).

6. Discussion

Recent research has documented that paternal involvement in housework (the role modeling effect) and childcare (parenting or father-child interaction effect) during early life fosters more egalitarian gender ideology and behaviors among children later in life. Using longitudinal data from Japan, this study specifically examines paternal domestic involvement during adolescence—a critical period for the formation of worldviews—and investigates whether its long-term impact on gender ideology in adulthood varies by parental employment configuration. Our findings reveal robust linkages between paternal domestic involvement during adolescence and adult children's (particularly sons') gender ideology, with the role modeling and father-child interaction mechanisms exhibiting divergent patterns across traditional male-breadwinner and egalitarian dual-earner families.

A key finding is that Japanese fathers' participation in housework during their children's adolescent years consistently promotes more egalitarian gender attitudes among adult children,

especially sons, regardless of the parental employment context. This result aligns with prior studies (Crouter et al., 1987; Hu, 2015) and provides partial support for **H1**, **suggesting** that fathers' housework exerts a relatively universal role modeling effect in cultivating egalitarian gender ideology among adult children in a gender-inegalitarian society such as Japan. The associations are notably stronger for adult sons than daughters (support **H4**), highlighting the particular salience of father-son dyads in the intergenerational transmission of gender attitudes.

In contrast, the influence of paternal involvement in childrearing displays divergent patterns depending on adolescent family contexts: while it promotes egalitarian gender attitudes among children from dual-earner families, it tends to reinforce traditional gender ideology in male-breadwinner families (support **H3**). Consistent with **H4**, gender-asymmetrical patterns existed where variation by parental employment type was largely observed among adult sons, but not among daughters. What might explain the negative impacts of paternal childrearing on the transmission of conservative gender ideology in traditional male-breadwinner families? Anecdotal evidence suggests that fathers may struggle to reconcile new fatherhood ideals with entrenched “patriarchal habits” in parenting, making it likely that some fathers revert to patriarchal parenting practices over time (Miller, 2011). This dilemma might be particularly acute for Japanese fathers who occupy traditional breadwinner roles and must navigate workplace constraints alongside the demands of parenting (Tan, 2023).

Supplemental analyses further reveal that the effect of paternal childrearing in reinforcing traditional gender ideology is most pronounced among male-primary earner households, while this pattern is attenuated among those from male-sole earner families. One possible explanation is the socioeconomic status (SES) disparity between subtypes: respondents growing up in male sole-earner families rated their families wealthier and had a greater proportion of fathers in managerial

or professional occupations at age 15, compared to those from male primary-earner families (who were less affluent and had more fathers in manual occupations). However, the observed variation persists even after controlling for SES (available upon request). We therefore suspect that differences in the nature and intensity of fathers' childrearing, as well as other aspects of family dynamics (such as parental interactions), may underly the differential effects across these two types of breadwinner families.

Given the increasing prevalence of male-primary earner households in Japan (see Figure 1), would it be a potent site for fathers to pass conservative ideology on to their offspring through daily interactions with adolescents? As an integral component of the gender revolution (England, 2010; Goldscheider et al., 2015), fathers' involvement into childcare and parenting—regardless of family context—represents a positive step forward in gender-inegalitarian Japan and should not be dismissed due to potential negative impacts on children's egalitarian gender ideology. Our findings highlight the need for greater support for fathers—Insufficient support in daily life may constrain fathers' ability to consistently embody new fatherhood ideals, increasing the risk of falling back into patriarchal parenting practices over the course of childrearing.

Our study has limitations that point to possible directions for further research. First, due to data limitations, we relied on a global measure of respondents' exposure to paternal domestic involvement at age 15, lacking information on the specific level, type, and intensity of fathers' housework and childrearing behaviors. This limitation precludes a more nuanced analysis of the intergenerational transmission of gender ideology. Moreover, our findings may be subject to recall bias in respondents' retrospective reports of adolescent experiences, which likely attenuates the observed associations and yields conservative estimates. Future research would benefit from the collection of prospective, detailed time-use diaries to provide high-quality data and a more

comprehensive understanding of the role of paternal involvement in shaping children's gender attitudes. Additionally, recent studies have documented increasing complexity in the attitudinal configurations and cognitive structures of gender and family attitudes in East Asia (Han & Oh, 2025). Future work could employ a broader set of gender belief measures to unpack the complex nexus between paternal involvement and the structured components of children's gender ideology. Furthermore, studies with more precise measures of domestic behaviors could simultaneously consider both subjective and objective gender outcomes. This may be particularly relevant for married women, who often experience an attitude-behavior "mismatch" in marriage and family life (Damaske, 2011), especially in Japan, where mothers tend to hold more progressive gender attitudes but bear a disproportionate burden of childcare and household responsibilities (Yu & Kuo, 2018).

Despite these limitations, our study makes important contributions to the literature on the intergenerational transmission of gender ideology and the role of paternal involvement. Our findings from Japan generally confirms patterns observed in Western countries: Japanese fathers are more likely to participate in broad childrearing than housework, and the influences of paternal housework on gender ideology tends to be greater than that of paternal childcare. Extending existing research, our study underscores the significance of adolescence from a life course perspective and highlights the importance of considering the parental employment context when examining fathers' domestic participation—especially housework and childrearing—as situated practices contingent on specific family settings (Marsiglio et al., 2005). In doing so, we deepen our understanding of how paternal involvement may differentially shape children's gender ideology (and potentially other gender-related outcomes) across families with varying degrees of gender-(in)egalitarianism during adolescence.

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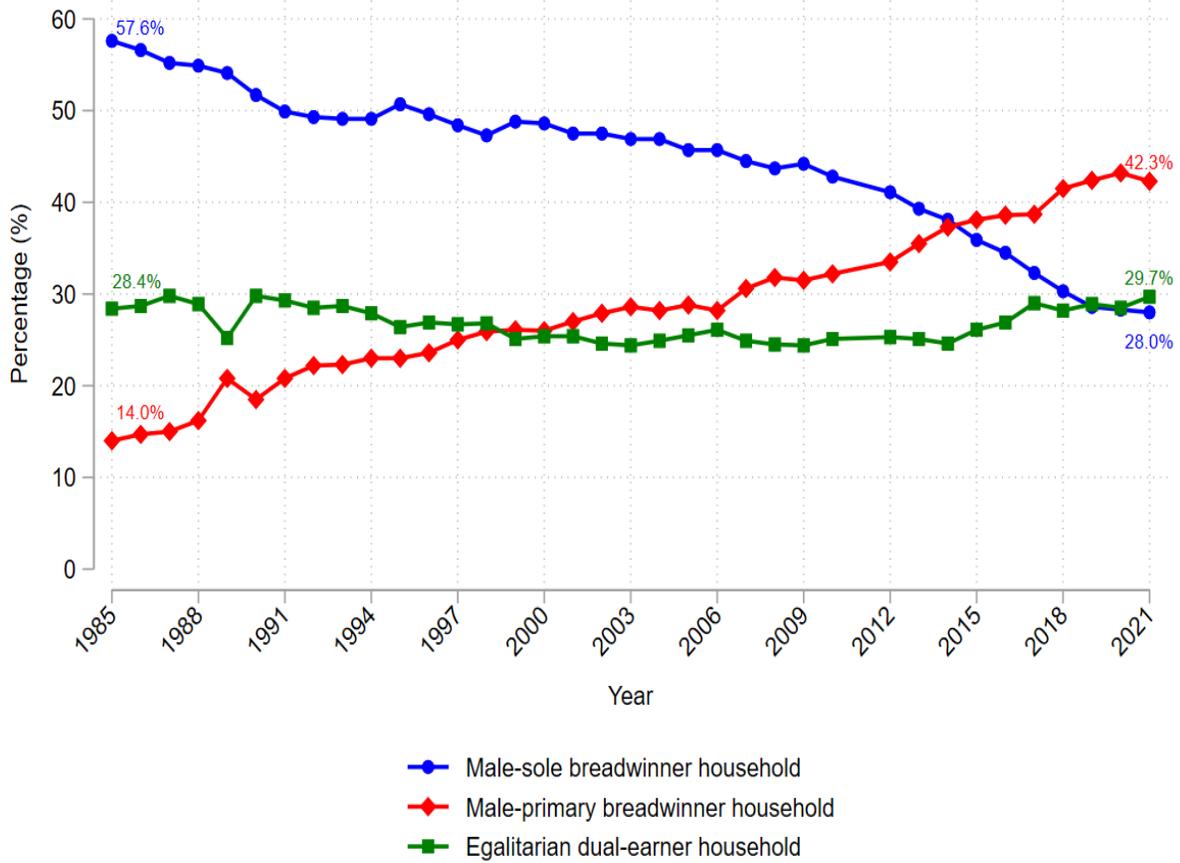


Fig. 1 Trends in Household Structure in Japan during 1985-2021.

Note. Statistics from 1985 to 2001 come from the “Special Survey of the Labour Force Survey” (every February) by the Management and Coordination Agency. Statistics from 2002 come from the “Labour Force Survey (Detailed Tabulation)” by the Ministry of Internal Affairs and Communications.

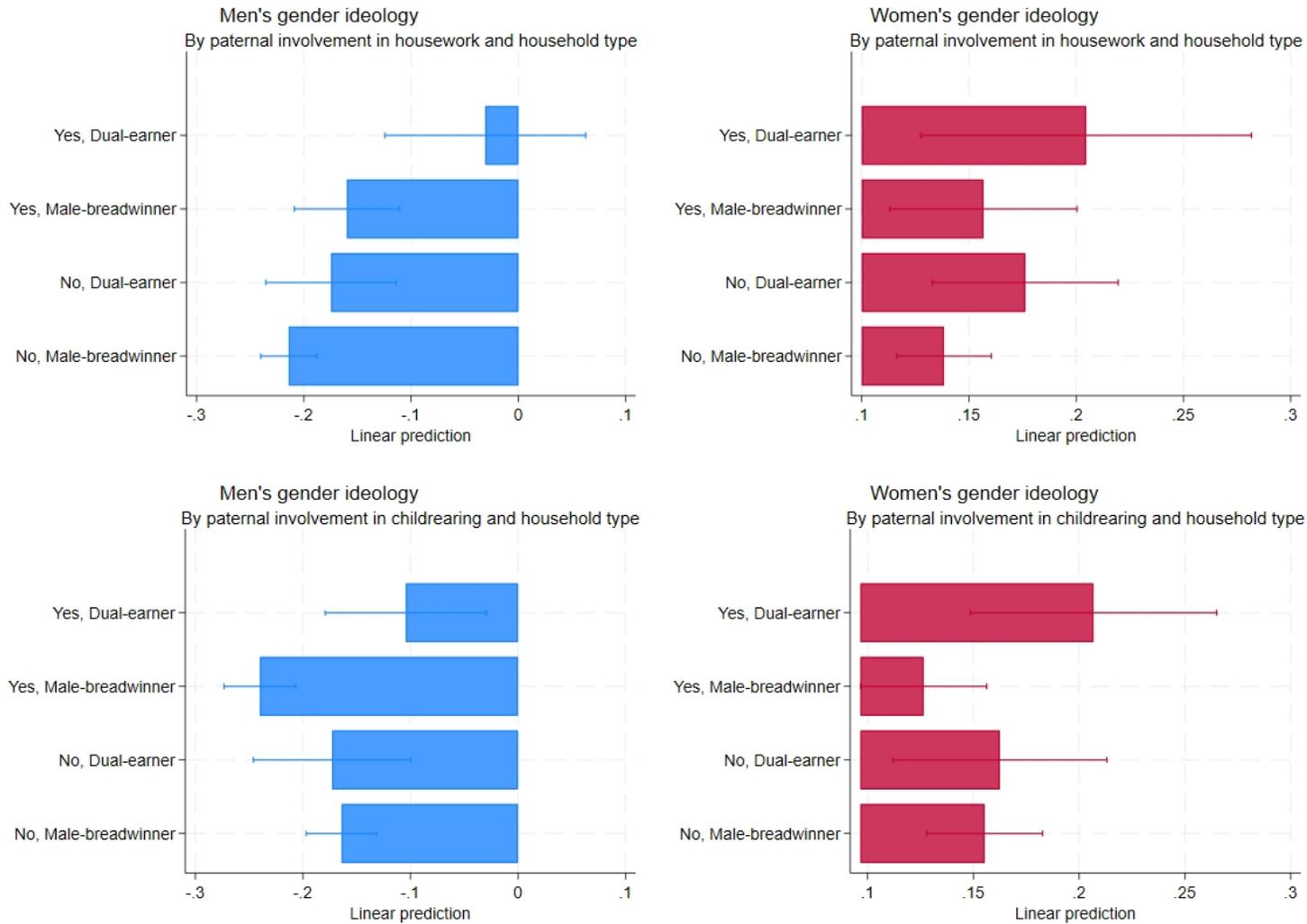


Fig. 2 Predicted Egalitarian Gender Ideology by Paternal Domestic Involvement and Parental Employment (Household) Type at Age 15.

Table 1 Descriptive Statistics

Variables	Overall	Men	Women	<i>p</i> -value
	<i>M</i> /% (<i>SD</i>)	<i>M</i> /% (<i>SD</i>)	<i>M</i> /% (<i>SD</i>)	
Gender ideology (standardized)	0.00 (1.00)	-0.18 (0.99)	0.14 (0.99)	***
Paternal involvement in housework at age 15 (%)	20.5	21.7	19.5	***
Paternal involvement in childrearing at age 15 (%)	44.0	45.9	42.5	***
<i>Family characteristics at age 15</i>				
Parental employment type (%)				
Male-breadwinner	56.7	57.6	56.1	***
Dual-earner	15.2	14.1	15.9	
Other	28.1	28.2	28.0	
Father holding a college/university degree (%)	30.5	30.0	30.8	
Mother holding a college/university degree (%)	24.6	24.1	25.1	*
Mother's occupation (%)				
Managerial/professional	4.9	4.9	4.9	***
Clerical	11.2	10.4	11.8	
Sales/service	16.5	17.6	15.6	
Manual	14.3	14.2	14.4	
Other	27.8	29.3	26.7	
unemployed	6.5	6.9	6.3	
Missing	18.8	16.7	20.5	
Warm family environment (%)	35.2	33.9	36.1	***
<i>Respondents' characteristics</i>				
Male (%)	43.2			
Birth cohort (%)				
1960s	20.5	19.5	21.3	***
1970s	49.6	52.8	47.2	
1980s	22.2	20.5	23.5	
1990s	7.7	7.1	8.1	
Holding a college degree (%)	70.4	69.5	71.1	**
Employment status (%)				
Regular	56.3	79.9	38.4	***
Nonstandard	29.9	16.2	40.3	
Unemployed	13.8	3.9	21.3	
Personal annual income in the previous year (in 10,000 JPY)	327.58 (282.05)	491.48 (300.18)	203.06 (188.72)	***
Weekly work hours	33.50 (20.79)	42.60 (19.11)	26.58 (19.30)	***
Marital status (%)				

Married	64.5	61.3	67.0	***
Single	30.9	35.5	27.4	
Divorced/widowed	4.5	3.1	5.6	
Number of Children	1.12	1.02	1.20	***
	(1.13)	(1.13)	(1.13)	
Total number of siblings	1.44	1.40	1.46	***
	(0.86)	(0.82)	(0.88)	
N of observations	29004	12522	16482	

Note. Means and standard deviations (SD) are reported for continuous variables. Percentages (%) are reported for categorical variables. *P*-values are from *t*-tests (continuous variables) or chi-square tests (categorical variables).

Table 2 Means of Gender Ideology (Standardized) by Adolescent Paternal Involvement and Parental Employment Type

Panel A: Men	Parental employment type		
Gender ideology (standardized)	Male-breadwinner n = 7215	Dual-earner n = 1771	Other n = 3536
Paternal involvement in housework			
Yes	-0.19+	0.09***	-0.17
No	-0.23	-0.12	-0.19
Paternal involvement in childrearing			
Yes	-0.24*	0.01***	-0.16+
No	-0.19	-0.14	-0.20
Panel B: Women	Parental employment type		
Gender ideology (standardized)	Male-breadwinner n = 9241	Dual-earner n = 2626	Other n = 4615
Paternal involvement in housework			
Yes	0.13	0.34**	0.15
No	0.12	0.23	0.11
Paternal involvement in childrearing			
Yes	0.11	0.32***	0.12
No	0.13	0.19	0.11

Note. Within each parental employment type, mean levels of gender ideology were compared across paternal involvement (Yes vs. No, “No” being the reference group). *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Table 3 OLS Regression Results of Gender Ideology on Adolescent Paternal Involvement, Parental Employment Type, and Covariates (Selected Output)

	Overall		Men		Women	
Paternal involvement at age 15						
Housework	0.045**	0.041*	0.059*	0.054+	0.025	0.018
	(0.015)	(0.019)	(0.023)	(0.029)	(0.020)	(0.025)
Childrearing	-0.014	-0.047**	-0.020	-0.076**	-0.007	-0.029
	(0.013)	(0.016)	(0.019)	(0.024)	(0.017)	(0.022)
Parental employment type at age 15 (ref. male breadwinner)						
Dual-earner	0.067***	0.012	0.071*	-0.031	0.042+	0.005
	(0.017)	(0.023)	(0.029)	(0.040)	(0.022)	(0.029)
Other	0.020	-0.007	0.039+	-0.008	-0.012	-0.030
	(0.013)	(0.017)	(0.020)	(0.027)	(0.017)	(0.022)
Interactions						
Housework × dual-earner		0.045		0.090		0.010
		(0.041)		(0.065)		(0.053)
Housework × other		-0.027		-0.075		0.015
		(0.037)		(0.055)		(0.049)
Childrearing × dual-earner		0.089*		0.144*		0.073
		(0.037)		(0.060)		(0.046)
Childrearing × other		0.073*		0.138**		0.036
		(0.028)		(0.044)		(0.037)
Other covariates	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.101+	-0.090	0.018	0.037	-0.319***	-0.311***
	(0.056)	(0.056)	(0.107)	(0.107)	(0.070)	(0.070)
R-squared	0.100	0.101	0.059	0.061	0.113	0.113
Observations	29004	29004	12522	12522	16482	16482

Notes. Robust standard errors in parentheses. In all models, we also controlled for survey sample and wave dummies. Full results are reported in Online Appendix Table A1. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Online Appendix

Table A1 Full OLS Regression Results of Gender Ideology on Adolescent Paternal Involvement, Parental Employment Type, and Other Covariates

	Overall		Men		Women	
Paternal involvement at age 15						
Housework	0.045**	0.041*	0.059*	0.054+	0.025	0.018
	(0.015)	(0.019)	(0.023)	(0.029)	(0.020)	(0.025)
Childrearing	-0.014	-0.047**	-0.020	-0.076**	-0.007	-0.029
	(0.013)	(0.016)	(0.019)	(0.024)	(0.017)	(0.022)
Parental employment type at age 15 (ref. male breadwinner)						
Dual-earner	0.067***	0.012	0.071*	-0.031	0.042+	0.005
	(0.017)	(0.023)	(0.029)	(0.040)	(0.022)	(0.029)
Other	0.020	-0.007	0.039+	-0.008	-0.012	-0.030
	(0.013)	(0.017)	(0.020)	(0.027)	(0.017)	(0.022)
Interactions						
Housework × dual-earner		0.045		0.090		0.010
		(0.041)		(0.065)		(0.053)
Housework × other		-0.027		-0.075		0.015
		(0.037)		(0.055)		(0.049)
Childrearing × dual-earner		0.089*		0.144*		0.073
		(0.037)		(0.060)		(0.046)
Childrearing × other		0.073*		0.138**		0.036
		(0.028)		(0.044)		(0.037)
Father holding college/university degree at age 15	-0.000	-0.001	-0.004	-0.006	0.011	0.010
	(0.014)	(0.014)	(0.022)	(0.022)	(0.019)	(0.019)
Mother holding college/university degree at age 15	0.065***	0.067***	0.100***	0.103***	0.040*	0.041*
	(0.015)	(0.015)	(0.024)	(0.024)	(0.020)	(0.020)

Mother's occupation at age 15 (ref. managerial/professional)						
Clerical	-0.100**	-0.095**	-0.170**	-0.165**	-0.046	-0.042
	(0.033)	(0.033)	(0.052)	(0.052)	(0.042)	(0.042)
Sales/service	-0.095**	-0.090**	-0.152**	-0.145**	-0.037	-0.035
	(0.031)	(0.032)	(0.049)	(0.049)	(0.041)	(0.041)
Manual	-0.079*	-0.073*	-0.084+	-0.075	-0.080+	-0.077+
	(0.032)	(0.032)	(0.050)	(0.050)	(0.041)	(0.041)
Other/don't know	-0.205***	-0.200***	-0.271***	-0.262***	-0.151***	-0.148***
	(0.031)	(0.031)	(0.048)	(0.049)	(0.040)	(0.040)
Unemployed	-0.166***	-0.162***	-0.247**	-0.238**	-0.123*	-0.121*
	(0.046)	(0.046)	(0.074)	(0.074)	(0.059)	(0.059)
Warm family environment at age 15						
	-0.036**	-0.036**	-0.021	-0.019	-0.041*	-0.042*
	(0.012)	(0.012)	(0.019)	(0.019)	(0.016)	(0.016)
Male						
	-0.430***	-0.430***				
	(0.013)	(0.013)				
Birth cohort (ref. 1960s)						
1970s	-0.006	-0.005	0.031	0.031	-0.036+	-0.037+
	(0.015)	(0.015)	(0.022)	(0.023)	(0.019)	(0.019)
1980s	-0.004	-0.001	-0.010	-0.005	-0.010	-0.008
	(0.019)	(0.019)	(0.031)	(0.031)	(0.024)	(0.024)
1990s	-0.065+	-0.061	0.012	0.017	-0.108*	-0.106*
	(0.039)	(0.039)	(0.063)	(0.064)	(0.049)	(0.049)
Holding college/university degree						
	0.124***	0.123***	0.092***	0.088***	0.154***	0.154***
	(0.013)	(0.013)	(0.020)	(0.020)	(0.017)	(0.017)
Employment status (ref. regular employment)						
Nonstandard	-0.093***	-0.091***	-0.047	-0.044	-0.128***	-0.128***
	(0.018)	(0.018)	(0.030)	(0.030)	(0.022)	(0.022)
Unemployment	-0.162***	-0.161***	-0.091	-0.090	-0.065	-0.064

	(0.036)	(0.036)	(0.071)	(0.070)	(0.044)	(0.044)
Personal annual income (logged)	0.064***	0.064***	-0.003	-0.003	0.079***	0.078***
	(0.006)	(0.006)	(0.013)	(0.013)	(0.007)	(0.007)
Weekly work hours	-0.002***	-0.002***	-0.004***	-0.004***	0.003***	0.003***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Marital status (ref. married)						
Single	-0.055**	-0.055**	-0.133***	-0.130***	-0.148***	-0.150***
	(0.017)	(0.017)	(0.026)	(0.026)	(0.023)	(0.023)
Divorced/widowed	0.131***	0.131***	-0.114*	-0.112*	0.141***	0.140***
	(0.028)	(0.028)	(0.051)	(0.052)	(0.033)	(0.033)
Number of children	-0.055***	-0.055***	-0.101***	-0.102***	-0.015+	-0.015+
	(0.007)	(0.007)	(0.011)	(0.011)	(0.009)	(0.009)
Number of siblings	0.002	0.002	0.003	0.002	-0.000	-0.000
	(0.006)	(0.006)	(0.010)	(0.010)	(0.008)	(0.008)
Survey sample dummies	yes	yes	yes	yes	yes	yes
Wave dummies	yes	yes	yes	yes	yes	yes
Constant	-0.101+	-0.090	0.018	0.037	-0.319***	-0.311***
	(0.056)	(0.056)	(0.107)	(0.107)	(0.070)	(0.070)
R-squared	0.100	0.101	0.059	0.061	0.113	0.113
Observations	29004	29004	12522	12522	16482	16482

Note. Robust standard errors in parentheses. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Table A2 Results by Detailed Adolescent Paternal Involvement

	Men	Women
Paternal involvement at age 15		
(ref. Absent father/minimal involvement)		
Housework only	0.108* (0.054)	0.054 (0.051)
Childrearing only	-0.082** (0.027)	-0.031 (0.023)
Both housework and childrearing	-0.029 (0.032)	-0.013 (0.027)
Parental employment type at age 15 (ref. male breadwinner)		
Dual-earner	0.050 (0.040)	0.042 (0.029)
Other	0.023 (0.028)	-0.013 (0.023)
Interactions		
Housework only × dual-earner	-0.017 (0.154)	0.094 (0.103)
Housework only × other	-0.210+ (0.121)	0.039 (0.091)
Childrearing only × dual-earner	0.143* (0.065)	0.106* (0.050)
Childrearing only × other	0.135** (0.047)	0.032 (0.040)
Both housework and childrearing × dual-earner	0.249*** (0.064)	0.085 (0.054)
Both housework and childrearing × other	0.057 (0.056)	0.033 (0.052)
Other covariates	yes	yes
Constant	-0.330*** (0.089)	-0.310*** (0.054)
R-squared	0.052	0.110
Observations	12522	16482

Note. Robust standard errors in parentheses. In all models, we also controlled for survey sample and wave dummies.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Table A3 Results After Controlling for Respondents' Marriage and Family Attitudes.

	Men	Women
Paternal involvement at age 15		
Housework	0.061*	0.029
	(0.030)	(0.026)
Childrearing	-0.092***	-0.034
	(0.025)	(0.022)
Parental employment type at age 15 (ref. male breadwinner)		
Dual-earner	0.050	0.041
	(0.040)	(0.029)
Other	0.007	-0.007
	(0.028)	(0.022)
Interactions		
Housework × dual-earner	0.041	-0.008
	(0.068)	(0.054)
Housework × other	-0.086	-0.029
	(0.056)	(0.049)
Childrearing × dual-earner	0.179**	0.126**
	(0.062)	(0.047)
Childrearing × other	0.147**	0.052
	(0.044)	(0.037)
Marriage and family attitudes	0.178***	0.324***
	(0.015)	(0.014)
Other covariates	yes	yes
Constant	-0.886***	-1.318***
	(0.104)	(0.069)
R-squared	0.065	0.148
Observations	11652	15403

Note. Robust standard errors in parentheses. In all models, we also controlled for survey sample and wave dummies. Due to missing values in marriage and family attitudes, numbers of observations were smaller compared to those in main models. In each odd-numbered wave, respondents were asked to report their agreement with the following statements regarding marriage and family life: (1) Generally speaking, married people are happier than unmarried people; (2) Having children hinders the freedom of a couple's life; and (3) It is better to divorce than to continue an unhappy marriage. Answers were recorded on a five-point Likert scale from 1 "strongly agree" to 5 "strongly disagree." We reverse-coded answers of the last two items so that higher values indicating more progressive attitudes toward marriage and childrearing, and then calculated an average value to reflect respondents' general attitudes towards marriage and family.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Table A4 Coefficients of Paternal Domestic Involvement by Detailed Types of Parental Employment, men and women.

	Male-sole earner (Father full-time, mother not working)	Male-primary earner (Father full-time, mother part-time)	Dual-earner	Other
Panel A: Men				
Paternal involvement in housework	0.040	0.063+	0.139*	-0.020
Paternal involvement in childrearing	-0.024	-0.115***	0.072	0.067+
	Male-sole earner (Father full-time, mother not working)	Male-primary earner (Father full-time, mother part-time)	Dual-earner	Other
Panel B: Women				
Paternal involvement in housework	0.036	0.012	0.025	0.036
Paternal involvement in childrearing	0.016	-0.060*	0.046	-0.003

Note. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$