Fathers' Housework Participation and the Intergenerational Association in Housework Division: Evidence from Japan

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November 2026

Discussion Paper No. 2617

GRADUATE SCHOOL OF ECONOMICS

KOBE UNIVERSITY

ROKKO, KOBE, JAPAN

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Abstract

Routine housework remains strongly gendered in Japan despite the spread of dual-earner households. This study examines whether fathers' housework participation when respondents were aged 15 is associated with the division of housework in respondents' later marital households. Using the Japanese Life Course Panel Survey, the analysis indicates that paternal housework participation is associated with a smaller female-to-male housework-frequency gap. Although the estimated association is larger for sons than for daughters, the difference is not statistically significant. The clearest estimated association is observed among sons whose mothers worked full-time, although formal evidence of cross-group differences remains limited. Supplementary analyses provide suggestive evidence that the association among sons is most clearly reflected in their own housework frequency and the shopping-specific gap, with weaker evidence for laundry, whereas the most precisely estimated result among daughters is less traditional gender-role attitudes toward housework. These patterns are consistent with different behavioral and attitudinal manifestations of intergenerational continuity, but they do not establish sex-specific mechanisms or causal effects.

Keywords: housework division, intergenerational association, paternal housework participation
JEL Codes: D13, J16, J22

* The data used in this study were obtained from the Social Science Japan Data Archive (SSJDA), Center for Social Research and Data Archives, Institute of Social Science, The University of Tokyo. Specifically, we used micro-data from the Japanese Life Course Panel Survey of the Youth (JLPS-Y) and the Japanese Life Course Panel Survey of the Middle-aged (JLPS-M) for 2007, 2009, and 2011–2017, conducted by the Institute of Social Science Panel Survey Project, The University of Tokyo. This study was conducted as part of a research project at the Kobe University Center for Social Systems Innovation (KUSSI).

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1 Introduction

Despite advances in education and labor-market participation, the division of unpaid housework remains highly unequal. Across countries, women continue to perform a disproportionate share of routine domestic labor, and this imbalance has proven remarkably persistent over time (Fujimoto et al., 2013; Oinas, 2018; Garcia & Tomlinson, 2021; Syrda, 2023). Evidence similarly shows that women undertake most unpaid work where data are available; in countries such as Korea, Japan, Mexico, Portugal, Turkey, and Italy, women perform more than three-quarters of all unpaid work (OECD, 2017). The persistence of this pattern suggests that inequality in housework is not determined only by current household resources or bargaining positions. It may also reflect the intergenerational transmission of gendered norms and everyday domestic practices within families.

Japan is a particularly informative case in which to study this possibility. Dual-earner households have become more common (Cabinet Office, 2022), yet substantial gender differences in housework remain. Many women therefore continue to face a double burden of paid work and domestic responsibilities. For example, the 2021 Survey on Time Use and Leisure Activities shows that, in couple-and-children households with at least one child under six, husbands spent 30 minutes per day on housework, compared with 178 minutes for wives (Statistics Bureau of Japan, 2022). Research covering 1994–2009 documents increases in husbands' housework time from a low starting point and declines in wives' time (Tsuya et al., 2012). This combination makes Japan more than a geographically new case: it provides a setting in which intergenerational continuity in domestic arrangements can be examined.

A central question is whether domestic arrangements observed in the family of origin are associated with how housework is divided in the next generation. Children repeatedly observe parental allocations of paid and unpaid work, and paternal participation may be especially salient where routine housework is conventionally coded as women's responsibility. Existing evidence also suggests that paternal behavior may exert particularly salient effects on children's housework participation while they live with their parents (Gimenez-Nadal et al., 2017).

Against this background, this study addresses three related questions. First, is paternal housework participation during adolescence associated with a smaller female-to-male housework-frequency gap in adult children's households? Second, are the estimated associations descriptively different for sons and daughters and across maternal-employment contexts? Third, how is paternal participation associated with respondents' own housework frequency, spouses' frequency, task-specific gaps, and gender-role attitudes? This framing distinguishes the main within-couple allocation outcome from supplementary behavioral and attitudinal outcomes.

To answer these questions, the study uses longitudinal data from the Japanese Life Course Panel Survey (JLPS), which contains retrospective information on fathers' housework participation during respondents' adolescence and repeated observations of housework in respondents' adult households after marriage. The main analysis estimates the association between paternal participation and the within-couple female-to-male housework-frequency gap, controlling for survey year, current household conditions, and observed family-of-origin characteristics. Supplementary analyses examine interactions by respondent sex and maternal employment status, respondents' and spouses' housework frequencies, task-specific gaps, and adult gender-role attitudes.

This study makes two main contributions to the literature on intergenerational associations in housework. First, it provides evidence from Japan, where the expansion of dual-earner households has coexisted with a persistently gendered division of unpaid work. International studies have documented intergenerational continuity in household labor across several national settings, but corresponding

evidence from Japan remains limited, particularly regarding housework allocation in adult children's marital households. Existing Japanese studies examine children's contemporaneous housework participation or gender ideology in adulthood (Morinaka, 2019; Wang & Zhang, 2026; Li, 2026). This study addresses this gap by examining whether fathers' housework participation during respondents' adolescence is associated with the reported allocation of routine housework within respondents' own marital households.

Second, the study uses a couple-level female-to-male housework-frequency gap as its main outcome and supplements this measure with separate outcomes for respondents' and spouses' housework frequencies and task-specific gaps. It also examines variation by maternal employment during adolescence and compares the behavioral results with those for adult gender-role attitudes. These analyses help clarify whether the observed association involves respondents' or spouses' reported participation and how it varies across tasks and family contexts.

2 Literature Review

Research on the gender division of household labor in economics has traditionally emphasized specialization, time allocation, and intra-household bargaining (Becker, 1991; Chiappori, 1992; Lundberg & Pollak, 1996; Apps & Rees, 1997). Yet differences in employment, relative earnings, and other household resources do not fully account for the persistent gender imbalance in unpaid work (Goldin, 2014; Bertrand et al., 2015; Sato, 2020; Syrda, 2023). This has led economists to devote increasing attention to gender norms, identity, culture, and intergenerational preference formation (Akerlof & Kranton, 2000; Fernández & Sevilla-Sanz, 2007; Magda et al., 2023). Cultural-transmission models similarly emphasize that preferences and beliefs may be formed within families through repeated observation and socialization and subsequently carried into adulthood (Bisin & Verdier, 2001; Fernández et al., 2004; Fernández & Fogli, 2009; Fernández, 2013). From this broader perspective, the division of housework may reflect not only contemporaneous household conditions but also expectations and practices acquired in the family of origin.

Empirical research on intergenerational associations in housework can be organized according to the life-course stage and household context in which children's domestic behavior is observed. One strand examines children or young adults while they are still living in the parental household. Using Spanish time-use data from two-parent households with children aged 10-17, Álvarez and Miles-Touya (2012) find a positive association between a more egalitarian parental division of housework and a less asymmetric allocation of domestic chores between sons and daughters. Solaz and Wolff (2015) document a positive association between parents' and co-resident young adult children's housework time in France. Although daughters spend substantially more time on domestic work than sons, gender differences in the intergenerational association are not systematic and depend on the type of task. Using comparable time-use data from Germany and Spain, Gimenez-Nadal et al. (2017) also find positive parent-child correlations, but the parental pattern differs across countries: both fathers' and mothers' housework time is associated with children's housework time in Germany, whereas the corresponding association in Spain is observed only for fathers.

Longitudinal evidence further indicates that parental housework arrangements may be associated with children's domestic participation at later ages. Using the German Socio-Economic Panel, Cordero-Coma and Esping-Andersen (2018) find that parents' division of housework when children were aged 8-11 is associated with participation in housework at ages 18-19, particularly among sons. Using UK data, Gimenez-Nadal et al. (2018) document positive correlations between parents' and children's housework

time. Their panel analysis additionally shows that a higher father-to-mother housework-time ratio is associated with a higher child-to-mother housework-time ratio after allowing for individual fixed effects. Although these studies differ in their measures and empirical strategies, their principal outcomes concern children's own domestic work rather than the allocation of housework within their later marital households.

A smaller and more directly relevant strand examines housework after children establish their own households. Using a 31-year US panel, Cunningham (2001) links parental housework arrangements, maternal employment, and parental gender attitudes to the division of household labor among adult children. The results indicate that the parental division of housework is particularly relevant to sons' later participation in routine domestic work, whereas maternal employment is more strongly associated with daughters' adult housework allocation. Using Russian longitudinal data, Giménez-Nadal et al. (2019) show that the parental division of housework during late childhood or adolescence is associated with housework allocation after children marry or cohabit. A higher maternal share of housework in the family of origin is associated with greater gender inequality in children's later households, with the results interpreted as more consistent with parental role-model channel than with preference formation or skill acquisition. These studies show that intergenerational associations may extend beyond children's individual housework participation to the organization of domestic labor within their later households. However, adult children's within-couple allocation has been examined in relatively few national contexts.

This study contributes Japanese evidence on whether fathers' housework participation during adolescence is associated with the division of housework within their children's own households in adulthood. Existing Japanese research instead examines related outcomes at other life-course stages. Morinaka (2019) studies contemporaneous housework participation among children aged 9-18 in Japanese nuclear families and finds that fathers' housework participation is positively associated with sons' involvement in housework. More recent JLPS-based work examines the association between paternal domestic involvement during adolescence and gender ideology or gender-role attitudes in adulthood (Wang & Zhang, 2026; Li, 2026). These studies do not directly examine the reported within-couple allocation of routine housework after children establish their own households.

This gap is substantively important in Japan, where expansion of female employment and dual-earner households has not been accompanied by an equivalent redistribution of unpaid work between partners (Kamo, 1994; Fuwa, 2004; Kubo, 2017). This combination makes Japan an informative setting for examining intergenerational associations in domestic arrangements. Within this context, fathers warrant particular attention because their participation in routine housework constitutes a visible departure from prevailing gendered arrangements. Role-model perspectives suggest that children may form expectations about household roles by observing parental behavior (Bandura, 1977), and fathers' housework participation has been associated with more egalitarian gender-role attitudes among adolescents (Cano & Hofmeister, 2023). This motivates examining whether paternal participation is associated with children's later housework arrangements.

Against this background, this study estimates the association between paternal housework participation during adolescence and the female-to-male housework-frequency gap in respondents' marital households. Supplementary analyses characterize how the estimated association varies across respondent sex, maternal-employment contexts, and adult behavioral and attitudinal outcomes.

3 Data

The empirical analysis used the Japanese Life Course Panel Survey (JLPS)[1], particularly the youth (JLPS-Y) and middle-aged (JLPS-M) datasets, conducted by the Institute of Social Science at the University of Tokyo. The target populations of these surveys were individuals aged 20-34 and 35-40, respectively, as of December 2006. The JLPS is one of the few large-scale panel surveys in Japan that systematically collects information on individual characteristics, household background, and housework frequency. A key advantage for the present study is that it also records respondents' family circumstances at age 15, including fathers' participation in housework, thereby making it possible to link retrospective information on the parental household to respondents' domestic behavior in adulthood.

The analysis used Waves 1, 3, and 5-11, corresponding to 2007, 2009, and 2011-2017, because Waves 2 and 4 did not include the housework-frequency items needed to construct the outcome variables. The sample is restricted to married respondents in different-sex couples for whom housework information is available for both spouses[2]. Observations are also excluded when either spouse is aged 65 or older, in order to reduce compositional changes associated with retirement and pension receipt, which may affect household specialization and the allocation of housework. After excluding observations with missing information on the outcome, paternal housework participation, or the required covariates, the analytical sample contains 10,049 household-year observations from 2,083 unique respondents: 4,003 observations reported by male respondents (sons) and 6,046 reported by female respondents (daughters).

The analytical unit was the household-year observation. In each survey wave, the household respondent, who may be either the son or the daughter, reported details on both spouses' housework behavior. Family-background information[3] at age 15 was available only for the respondent, so the childhood variables refer to the family of origin of one spouse in each adult household. This design allows direct within-couple comparison in the children's generation, although it also means that both retrospective childhood measures and adult housework outcomes are based on self-reports.

The main dependent variable was a female-to-male housework frequency gap, defined as the within-couple difference in log housework frequencies in the adult child's household. This measure directly corresponds to the central empirical problem in Japanese households: women perform routine housework much more frequently than men. The descriptive statistics in Table 1 show that this gap is substantial in the estimation sample: the female partner accounts for 86.5% of the frequency-based total, compared with 13.5% for the male partner, and the mean log female-to-male gap is 1.918.

The JLPS recorded how often each spouse performed four routine housework tasks: cooking, laundry, cleaning, and shopping. This study focuses only on housework and excludes childcare. Consistent with the narrow definition in the literature, housework refers to domestic maintenance tasks rather than caregiving (Koster et al., 2021). Housework and childcare are commonly treated as distinct domains of unpaid labor, and recent research has emphasized the importance of analyzing them separately (Naujoks, 2024). Each task was recorded on a six-point frequency scale. Following the coding scheme, the categories were converted into the number of days per month as follows: rarely, 0; 1-3 days a month, 2; 1-2 days a week, 6; 3-4 days a week, 14; 5-6 days a week, 22; and every day, 28. For each spouse, the task-specific monthly frequencies were averaged across the four routine housework tasks to construct an overall housework-frequency measure. Because this measure is an average rather than a sum, its

[1] The JLPS is based on a stratified two-stage random sample drawn from the resident registry and related sampling frames; detailed survey procedures are provided in the official documentation.

[2] Because the outcome is defined as a female-to-male housework-frequency gap, the analysis is restricted to different-sex couples. From Wave 3 onward, the JLPS marital category explicitly includes de facto marriages. Respondents classified as unmarried, including unmarried cohabitors, are routed to a separate module that does not provide comparable partner-level housework measures required to construct the female-to-male housework-frequency gap.

[3] Information on respondents' age-15 family background was available in Waves 1 and 5, although Wave 5 was limited to the follow-up survey.

theoretical range is 0 to 28. Using these measures, the main outcome (female-to-male housework frequency gap) was constructed as

$$log(female's\ housework\ frequency + 1) - log(male's\ housework\ frequency + 1).$$

The outcome is therefore the difference between two log values, equivalently the logarithm of the ratio of female housework frequency plus one to male housework frequency plus one, rather than the log of a difference. A larger value indicates a wider female-to-male gap in housework frequency, while a negative coefficient generally indicates a narrower female-dominated gap. Because the JLPS does not provide a consistent panel measure of housework time across waves, the empirical analysis relies on housework frequency rather than duration. Appendix Table A1 reports the relationship between frequency-based and time-based measures.

The key explanatory variable was paternal housework participation during the respondent's adolescence. Respondents classified their father into one of four categories depending on whether he left housework to the mother or was cooperative in housework and/or child rearing: (1) left housework and child rearing to the mother, (2) left housework to the mother but was cooperative in child rearing, (3) was cooperative in housework but left child rearing to the mother, and (4) was cooperative in both housework and child rearing. A binary indicator is coded as 1 for "cooperative in housework" (categories 3 and 4) and 0 for "left housework to mother" (categories 1 and 2). This measure indicates whether the respondent retrospectively described the father as cooperative in housework during adolescence.

The models controlled for current household characteristics associated with the allocation of housework: the age of the couple, years of marriage, the female-to-male education ratio, female's relative income, the employment status of both spouses, and the number of co-residing children (Hill & Stafford, 1974, 1980; Gronau, 1976, 1977; Kamo, 1994; Bittman et al., 2003; Gupta et al., 2010; Hook, 2010, 2017; Bertrand et al., 2015; Procher et al., 2017; Grunow, 2019; Kolpashnikova et al., 2019; Yamamura & Tsutsui, 2019; Luo, 2025; Zhang, 2025). These variables capture life-course stage, current household structure, and bargaining or specialization conditions in adulthood.

Additional controls describe childhood family background at age 15, including older-sibling composition, the number of siblings, parental education, household economic status, and ownership of a microwave as a proxy for household housework time-saving resources (Bonke, 1995, 2010; Lundberg, 2005; Li & Liu, 2019; Schulz, 2021). Parental education was coded as 1 if the parent had completed high school or above, and 0 otherwise. Household economic status was coded as 1 if the household was described as "somewhat wealthy" or "wealthy," and 0 otherwise. These variables help account for early-life resources and socialization environments that may shape later domestic behavior.

Maternal employment status during the respondent's adolescence is used to examine contextual heterogeneity. Paternal housework participation may be more visible or have a different social meaning when mothers are employed, particularly full-time (Gimenez-Nadal et al., 2017). Maternal employment is coded as full-time, part-time, or not employed. This stratification is descriptive and does not identify maternal employment as a causal moderator.

As a supplementary attitudinal outcome, the study examines whether paternal housework participation is associated with adult gender-role attitudes. The measure is based on respondents' agreement with the statement that men should work outside while women should be responsible for housework, recorded on a five-point scale from 1 (strongly disagree) to 5 (strongly agree). The item is available for 6,892 household-year observations, and higher values indicate more traditional attitudes.

Table 1 presents descriptive statistics for the main variables. Only 18.2% of respondents report that their fathers participated in housework during adolescence. The mean female-to-male housework-

frequency gap is 1.918, and the female partner performs 86.5% of the frequency-based total, compared with 13.5% for the male partner. These descriptive patterns show that routine domestic labor remains strongly gendered in the observed JLPS households. For clarity, 'male' and 'female' refer to the male and female members of the adult child's household. In son-reported households, the male is the son and the female is his wife; in daughter-reported households, the female is the daughter and the male is her husband. This terminology keeps the outcome definition consistent across subsamples.

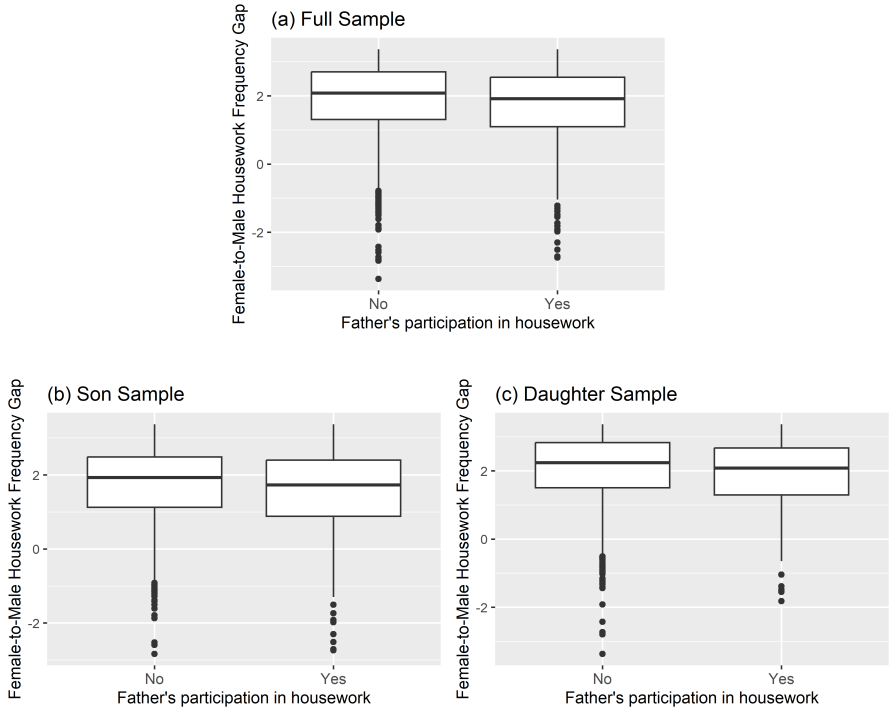
Table 1 Descriptive Statistics

Variable	N	Mean	Min	Max
Adulthood variables:				
Household characteristics:				
Respondent is male	10,049	0.398	0	1
Male's age	10,049	41.069	21	64
Female's age	10,049	39.334	20	64
Female-to-male education ratio	10,049	0.987	0.5	2.333
Female's relative income	10,049	0.19	0	1
Years of marriage	10,049	12.57	0	31
Number of co-resident children	10,049	1.69	0	6
Male employed	10,049	0.989	0	1
Female employed	10,049	0.675	0	1
Respondent's gender-role attitudes	6,892	2.704	1	5
Housework variables:				
Female-to-male housework frequency gap	10,049	1.918	-3.367	3.367
Male's housework share	10,049	0.135	0	1
Female's housework share	10,049	0.865	0	1
Male's housework frequency	10,049	3.324	0	28
Female's housework frequency	10,049	20.308	0	28
Childhood variables (measured at age 15):				
Father's housework participation	10,049	0.182	0	1
Household characteristics:				
Older-sibling composition:				
Only older brothers	10,049	0.231	0	1
Only older sisters	10,049	0.216	0	1
Both older brothers and older sisters	10,049	0.066	0	1
Firstborn with younger sibling(s)	10,049	0.435	0	1
Only child	10,049	0.053	0	1
Mother's employment status:				
Full-time	10,049	0.274	0	1
Part-time	10,049	0.469	0	1
Not employed	10,049	0.258	0	1
Father's education (high school or above)	10,049	0.749	0	1
Mother's education (high school or above)	10,049	0.738	0	1
Number of siblings:				
One sibling	10,049	0.527	0	1
Two siblings	10,049	0.344	0	1
Three siblings	10,049	0.056	0	1
More than three siblings	10,049	0.019	0	1
Household economic status	10,049	0.189	0	1
Household appliance ownership	10,049	0.741	0	1

Notes: "Male" and "female" refer to the male and female members of the adult child's household, respectively. Housework shares are calculated from the frequency-based measure and therefore sum to one within each household-year observation. For binary variables, means represent proportions. Paternal housework participation (18.2%) is a retrospective binary indicator, whereas the adult male figure (13.5%) represents the male partner's share of the couple's total housework frequency. Maternal employment (74.2%, combining full-time and part-time employment) and current female employment (67.5%) are measured at different stages of the family life course. The former records whether respondents' mothers were employed when the respondents were aged 15, whereas the latter measures the employment status of female partners in adult households observed at varying ages and stages of marriage and childrearing. Because the two statistics differ in both timing and measurement context, they should not be interpreted as direct evidence of generational change in women's employment.

Before turning to the multivariate analysis, Figure 1 plots the distribution of the female-to-male housework-frequency gap by paternal housework participation during the respondent's adolescence. Panel (a) presents the full sample, while Panels (b) and (c) present the son and daughter subsamples. Across all three panels, respondents who report paternal participation tend to display a lower observed gap than respondents who do not. Because the distributions are predominantly positive, the leftward shift is descriptively consistent with a narrower female-dominated housework gap.

Fig 1. Female-to-Male Housework Frequency Gap by Paternal Housework Participation



Notes: The boxes show the interquartile range, the horizontal line within each box shows the median, the whiskers extend to 1.5 times the interquartile range, and points outside the whiskers are plotted as outliers. The figure is descriptive; formal regression-based tests are reported in Tables 2 and 3.

4 Method

The empirical analysis examines whether fathers' participation in housework during respondents' adolescence is associated with a more equal division of housework in respondents' own households in adulthood. The longitudinal structure of the JLPS provides repeated observations of adult household arrangements, whereas the principal explanatory variable, father's housework participation, is time invariant. Respondent fixed-effects models would therefore absorb this variable and would not permit direct estimation of its coefficient. We consequently estimate pooled OLS models with survey-year fixed effects and standard errors clustered at the respondent level, allowing for arbitrary within-respondent correlation in the repeated observations (Wooldridge, 2010). The coefficient on paternal housework participation is identified from between-respondent variation, while the repeated observations provide multiple measurements of adult household outcomes and time-varying household characteristics.

The baseline model is specified as follows:

$$Y_{it} = \alpha + \beta FatherHW_i + \gamma X_{it} + \delta Z_i + \lambda_t + \varepsilon_{it} \qquad (1)$$

where Y_{it} denotes the log female-to-male housework-frequency ratio in respondent i's household at time t, defined as:

$$Y_{it} = log(Housework_{it}^{F} + 1) - log(Housework_{it}^{M} + 1) \qquad (2)$$

Here, $Housework_{it}^{W}$ and $Housework_{it}^{H}$ denote the average monthly housework frequencies of the wife and husband, respectively. Adding one retains observations in which either spouse reports zero housework frequency. Positive values indicate that the wife performs housework more frequently than the husband, whereas negative values indicate the reverse. Values closer to zero indicate a narrower within-couple gender gap. Because the outcome is positive for most observations, a negative coefficient generally represents a reduction in the female-dominated housework gap.

$FatherHW_i$ equals one when the respondent i reports that the father participated in housework

during individual i's adolescence and zero otherwise. X_{it} is a vector of contemporaneous household characteristics, including the couple's age, years of marriage, female's relative income, the female-to-male education ratio, the employment status of both spouses, and the number of co-resident children. Z_i contains respondent's sex and family-of-origin characteristics measured at age 15, including older-sibling composition, number-of-siblings, parental education, household economic status, and ownership of a household time-saving appliance. The term $\lambda_t$represents survey-year fixed effects, with 2007 as the reference year, and ε_{it} is the residual error term.

We estimate three nested specifications. Model 1 includes paternal housework participation, respondent sex, and survey-year fixed effects. Model 2 additionally controls for family-of-origin characteristics measured at age 15. Model 3 further includes contemporaneous characteristics of the respondent's adult household. This sequential specification shows whether the estimated association changes after accounting first for childhood background and then for current household circumstances. The coefficient β on paternal housework participation captures whether respondents who observed paternal involvement in housework during adolescence tend to have a smaller adult housework gap, conditional on observed background characteristics. A negative coefficient indicates that respondents who observed paternal housework participation tend to report a narrower gender gap in housework frequency in their adult households, conditional on the included covariates.

Heterogeneity by respondent sex is examined using an interaction between paternal housework participation and respondent sex, together with separate regressions for sons and daughters. Maternal-employment heterogeneity is examined by interacting paternal housework participation with maternal employment status at age 15 and calculating marginal effects for full-time, part-time, and non-employed mothers. Supplementary analyses replace the dependent variable with respondents' and spouses' housework frequencies and estimate task-specific female-to-male gaps for laundry, cooking, cleaning, and shopping. This approach helps clarify how paternal housework participation is associated with different dimensions of housework and spousal dynamics in adulthood. Traditional gender-role attitudes are analyzed using ordered logit models, to assess whether paternal housework participation is associated with less traditional views in adulthood. All models include survey-year fixed effects and respondent-clustered standard errors. The estimates are interpreted as conditional associations rather than causal effects because pooled OLS models do not remove unobserved time-invariant differences across respondents or families of origin.

5 Results

5.1 Baseline results

Table 2 presents the pooled OLS estimates of the association between fathers' participation in housework during respondents' adolescence and the division of housework in respondents' adult households. The dependent variable is defined as the difference between the logarithms of the female and male partners' housework frequencies after adding one to each frequency measure. Given that the outcome is positive for most observations, a negative coefficient generally indicates a narrower female-dominated housework gap. Across all three specifications, fathers' housework participation is negatively associated with the adult housework gap. In Model 1, which includes year fixed effects but excludes the additional childhood and adult household controls, the estimated coefficient is -0.159 and is statistically significant at the 1% level. Adding childhood family-background variables in Model 2 leaves the estimate essentially unchanged at -0.162. In Model 3, the coefficient declines in absolute magnitude to -0.127 after adult household characteristics are included, but remains statistically significant at the 5% level.

Thus, the association remains negative and statistically distinguishable from zero when conditioning on current household circumstances.

The pattern across the three specifications indicates that the negative association is not sensitive to the sequential inclusion of observed covariates. In particular, the near-identical estimates in Models 1 and 2 suggest that differences in the observed childhood family background of respondents account for little of the association. The coefficient is more sensitive to the inclusion of adult household covariates than to the inclusion of observed childhood characteristics. The coefficient becomes somewhat smaller after contemporaneous adult household characteristics are included. This change reflects the use of a more extensive conditioning set and should not be interpreted as evidence of any particular explanatory pathway. Nevertheless, the coefficient remains negative and statistically significant in the specification including contemporaneous household characteristics. The explanatory power of the model increases substantially as additional covariates are introduced. The increase in R^2, from 0.028 in Model 1 to 0.202 in Model 3, also shows that the adult household controls substantially improve the explanatory power of the model, without eliminating the association of primary interest. Because the estimation sample remains unchanged across specifications, the changes in the coefficient reflect the inclusion of additional controls rather than differences in sample composition.

Overall, the baseline estimates show a negative intergenerational association that is stable across the three nested specifications. Respondents who report paternal housework participation tend to have a smaller female-to-male housework-frequency gap in adulthood. Because the estimates are based on observational between-respondent variation, they should not be interpreted as causal effects.

Table 2 Dependent variable: Female-to-Male Housework Frequency Gap, Pooled OLS model

Sample:	Full		
	Model 1	Model 2	Model 3
Father's housework participation	-0.159***	-0.162***	-0.127**
	(0.057)	(0.057)	(0.052)
Respondent is male	-0.306***	-0.296***	-0.310***
	(0.045)	(0.045)	(0.040)
Childhood background controls	NO	YES	YES
Adult household controls	NO	NO	YES
Year dummy	YES	YES	YES
R2	0.028	0.038	0.202
Adj. R2	0.028	0.036	0.199
Num. obs.	10,049	10,049	10,049

Notes: Standard errors clustered at the individual level are reported in parentheses. Full estimation results are reported in Appendix Table A2. *** p<0.01, ** p<0.05, * p<0.1.

5.2 Gender heterogeneity

Table 3 examines whether the association differs between sons and daughters. In the pooled interaction specification, the coefficient on fathers' housework participation is -0.110 for daughters, the reference group, while the interaction between fathers' participation and being a son is -0.044. The interaction coefficient is not statistically significant. Thus, although the estimated association is somewhat larger in absolute value for sons, the pooled model does not reject equality of the coefficients across sons and daughters. The separate-sample estimates are negative in both groups: -0.165 for sons and -0.111 for daughters, with both estimates marginally significant at the 10% level. These estimates describe the association within each subsample. Because the pooled interaction is not statistically significant, they should not be read as evidence that the association differs between sons and daughters.

Taken together, Table 3 shows negative point estimates in both subsamples and no statistically significant difference between them. The larger absolute coefficient for sons is descriptive only; statistical significance within each subsample does not establish that the two coefficients differ.

Table 3 Dependent variable: Female-to-Male Housework Frequency Gap, Pooled OLS model

Sample:	Full	Son	Daughter
	Model 4	Model 5	Model 6
Father's housework participation	-0.110*	-0.165*	-0.111*
	(0.063)	(0.088)	(0.063)
Respondent is male	-0.302***		
	(0.044)		
Father's housework participation* Respondent is male	-0.044		
	(0.107)		
Childhood background controls	YES	YES	YES
Adult household controls	YES	YES	YES
Year dummy	YES	YES	YES
R2	0.202	0.185	0.199
Adj. R2	0.199	0.179	0.195
Num. obs.	10,049	4,003	6,046

Notes: Standard errors clustered at the individual level are reported in parentheses. Full estimation results are reported in Appendix Table A3. *** p<0.01, ** p<0.05, * p<0.1.

5.3 Maternal employment status

Table 4 examines whether the association between fathers' housework participation and adult housework inequality varies according to mothers' employment status during respondents' adolescence. Panel A reports the interaction estimates, while Panel B presents the corresponding average marginal effects of paternal housework participation within each maternal-employment category. The marginal effects provide the more direct basis for interpreting the subgroup patterns.

In the full sample, fathers' housework participation is negatively associated with the adult housework gap when mothers worked either full-time or part-time. The estimated marginal effect is -0.221 for respondents whose mothers worked full-time and -0.157 for those whose mothers worked part-time; both estimates are statistically significant at the 5% level. Relative to the baseline estimate in Model 3 of Table 2 (-0.127), the association is substantially larger in absolute magnitude among respondents whose mothers worked full-time and slightly larger among those whose mothers worked part-time. Negative marginal effects are estimated for both maternal-employment categories, but formal evidence of heterogeneity is clearest for respondents whose mothers worked full-time. In contrast, the marginal effect among respondents whose mothers were not employed is small, positive, and statistically insignificant at 0.042. However, the interaction estimates indicate that only the difference between the full-time-employed and non-employed groups is statistically distinguishable at the 10% level, whereas the corresponding interaction for part-time employment is not statistically significant. The full-sample results therefore provide the clearest evidence of maternal-employment heterogeneity for families in which mothers worked full-time.

The gender-specific estimates reveal a more differentiated pattern. Among sons, the marginal effect of fathers' housework participation is -0.452 and statistically significant at the 5% level when the mother worked full-time. This estimate is considerably larger in absolute magnitude than the corresponding baseline coefficient for sons in Model 5 of Table 3 (-0.165). The marginal effects for sons whose mothers worked part-time (-0.144) or were not employed (0.142) are not statistically significant. Consistent with this result, the interaction between fathers' participation and mothers' full-time employment is large and statistically significant in the sons' specification. Thus, for sons, the evidence is concentrated primarily in households in which mothers worked full-time.

Among daughters, the pattern is weaker and less systematic. The estimated marginal effect is -0.160 when the mother worked part-time, which is somewhat larger in absolute magnitude than the baseline coefficient for daughters in Model 6 of Table 3 (-0.111), but is significant only at the 10% level. The corresponding estimates for daughters whose mothers worked full-time (-0.071) or were not employed

(-0.077) are statistically insignificant. In addition, neither of the maternal employment interaction terms is statistically significant in the daughters' specification. Consequently, although the point estimates suggest a negative association among daughters whose mothers worked part-time, the results do not establish that the association differs systematically across maternal employment categories for daughters.

One possible interpretation is that fathers' participation becomes more visible when mothers' paid employment creates a greater need to redistribute domestic responsibilities. In this context, paternal involvement may constitute a clearer departure from the traditional male-breadwinner model, increasing its potential relevance as a behavioral example for children. This interpretation is broadly consistent with prior research emphasizing the role of parental employment arrangements in the intergenerational transmission of housework (Giménez-Nadal et al., 2017). Among the estimated subgroup associations, the largest point estimate is observed for sons whose mothers worked full-time, whereas the results for daughters are weaker and less systematic. These findings therefore suggest that the association between paternal housework participation and children's later household behavior may depend on the broader parental division of paid and unpaid work, although the observed heterogeneity should not be interpreted as evidence of distinct causal mechanisms.

Table 4 Dependent variable: Female-to-Male Housework Frequency Gap, Pooled OLS model

Panel A. Interaction estimates			
Sample:	Full	Son	Daughter
	Model 7	Model 8	Model 9
Father's housework participation	0.042	0.142	-0.077
	(0.106)	(0.134)	(0.152)
Mother's employment status			
Full-time	0.156***	0.203**	0.115*
	(0.057)	(0.098)	(0.070)
Part-time	0.114**	0.086	0.115*
	(0.052)	(0.086)	(0.065)
Interaction terms			
Father's housework participation* Full-time	-0.263*	-0.594***	0.005
	(0.144)	(0.216)	(0.188)
Father's housework participation* Part-time	-0.198	-0.286	-0.084
	(0.128)	(0.179)	(0.176)
Panel B. Average marginal effects of father's housework participation			
Mother's employment status			
Full-time	-0.221**	-0.452**	-0.071
	(0.097)	(0.177)	(0.110)
Part-time	-0.157**	-0.144	-0.160*
	(0.072)	(0.121)	(0.088)
Not employed	0.042	0.142	-0.077
	(0.106)	(0.134)	(0.152)
Childhood background controls	YES	YES	YES
Adult household controls	YES	YES	YES
Year dummy	YES	YES	YES
R2	0.205	0.192	0.201
Adj. R2	0.202	0.186	0.197
Num. obs.	10,049	4,003	6,046

Notes: Only key coefficients are reported. All models include the same control variables as in Model 3 of Table 2 and year dummies. The reference category for maternal employment status is "not employed." The coefficients for maternal employment status represent differences relative to mothers who were not employed among families in which fathers did not participate in housework. Panel B reports average marginal effects of father's housework participation calculated from the corresponding models in Panel A. Full estimation results are reported in Appendix Table A4. Standard errors clustered at the individual level are reported in parentheses. To indicate the sample composition underlying the subgroup estimates, the numbers of unique respondents reporting paternal housework participation were 109 of 563 (19.4%) in the full-time-mother group, 204 of 982 (20.8%) in the part-time-mother group, and 81 of 538 (15.1%) in the non-employed-mother group. *** p<0.01, ** p<0.05, * p<0.1.

5.4 Adult children's and spouses' housework frequency

Table 5 further examines the household-level association by estimating fathers' housework participation against the absolute housework frequency of adult children and their spouses. This analysis helps assess whether the reduction in the female-to-male housework gap is associated with changes in

respondents' own behavior, their spouses' behavior, or both.

For sons, fathers' housework participation is positively associated with sons' own housework frequency. The estimated coefficient is 0.657 and is statistically significant at the 10% level. Because the outcome is the average of four task-specific monthly frequencies, the coefficient represents approximately 0.66 additional days per month per task on average. By contrast, the coefficient for the housework frequency of sons' wives is -0.086 and statistically insignificant. This pattern is consistent with the interpretation that the more equal division observed in sons' households is related primarily to sons performing more housework themselves, rather than operating through changes in their spouses' behavior.

For daughters, neither coefficient is statistically significant. Fathers' housework participation is negatively but insignificantly associated with daughters' own housework frequency and positively but insignificantly associated with their husbands' housework frequency. Accordingly, the results do not provide statistically reliable evidence that the association in daughters' households operates through either daughters' behavior or their husbands' behavior.

The decomposition therefore provides limited evidence that the household-level association among sons is reflected in sons' own housework frequency. No comparably clear pattern is identified for daughters or for spouses' housework frequencies from these regressions.

Table 5 Dependent variable: Housework Frequency, Pooled OLS model

Individuals:	Son	Son's wife	Daughter	Daughter's husband
	Model 10	Model 11	Model 12	Model 13
Father's housework participation	0.657*	-0.086	-0.174	0.327
	(0.387)	(0.483)	(0.316)	(0.266)
R2	0.111	0.222	0.271	0.111
Adj. R2	0.105	0.216	0.268	0.107
Num. obs.	4,003	4,003	6,046	6,046

Notes: Only key coefficients are reported. The dependent variables are average monthly housework frequencies across cooking, laundry, cleaning, and shopping. All models include the same control variables as in Model 3 of Table 2 and year dummies. Full estimation results are reported in Appendix Table A5. Standard errors clustered at the individual level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

5.5 Task-specific housework division

Table 6 examines whether the association between paternal housework participation and the gender division of housework varies across four specific tasks: laundry, cooking, cleaning, and shopping. Following prior research suggesting that intergenerational patterns in housework may differ across domestic tasks (Solaz & Wolff, 2015), we estimate separate models for each housework task. The dependent variable is defined as the logarithm of the female-to-male housework frequency ratio for the corresponding housework task. A negative coefficient therefore indicates a smaller female-to-male task-specific housework gap.

Among sons, paternal housework participation is negatively and significantly associated with the female-to-male housework ratio for two housework tasks: laundry and shopping. The coefficients are -0.232 for laundry and -0.241 for shopping, statistically significant at the 10% and 1% levels, respectively. The coefficients for cooking and cleaning are also negative but are not statistically significant. These results indicate that the overall association documented in the baseline models is more evident for some components of housework than for others. However, because the explanatory variable measures fathers' general participation in housework rather than their participation in each corresponding task, the estimates do not show that fathers' involvement in laundry or shopping specifically is transmitted to sons.

For daughters, the coefficients are also negative across all four tasks, but none is statistically significant. Thus, although the baseline estimates indicate that paternal housework participation is

associated with a smaller overall female-to-male housework gap in daughters' households, the task-specific results do not identify any single type of housework for which this association is estimated.

Overall, the task-specific estimates are most clearly negative for shopping and, more weakly, laundry in sons' adult households. The findings are consistent with the possibility that exposure to fathers' participation in domestic work is particularly relevant to sons' later sharing of household responsibilities that are commonly situated within a gendered division of unpaid labor and are often coded as more conventionally feminine routine housework. Nevertheless, because paternal housework is measured as overall participation rather than task-specific participation, these estimates should not be interpreted as evidence of task-specific intergenerational transmission.

Table 6 Dependent variable: Female-to-Male Housework Frequency Gap, Pooled OLS model

Sample:	Son				Daughter			
Tasks:	Laundry	Cooking	Cleaning	Shopping	Laundry	Cooking	Cleaning	Shopping
	Model 14	Model 15	Model 16	Model 17	Model 18	Model 19	Model 20	Model 21
Father's housework participation	-0.232*	-0.065	-0.132	-0.241***	-0.049	-0.106	-0.112	-0.091
	(0.134)	(0.120)	(0.101)	(0.086)	(0.080)	(0.076)	(0.073)	(0.077)
R2	0.155	0.112	0.189	0.102	0.196	0.120	0.222	0.076
Adj. R2	0.149	0.106	0.183	0.096	0.193	0.116	0.218	0.071
Num. obs.	4,003	4,003	4,003	4,003	6,046	6,046	6,046	6,046

Notes: Only key coefficients are reported. All models include the same control variables as in Model 3 of Table 2 and year dummies. Full estimation results are reported in Appendix Table A6. Standard errors clustered at the individual level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

5.6 Gender-role attitudes

Table 7 examines traditional gender-role attitudes as an additional adult outcome. Higher values on this measure indicate stronger agreement with the statement that men should work outside while women should do housework. In Model 22, fathers' housework participation is negatively associated with traditional gender-role attitudes in the full sample. The estimated coefficient is -0.199 and is statistically significant at the 5% level. Respondents whose fathers participated in housework during adolescence hold less traditional gender-role attitudes in adulthood. Model 23 further examines gender heterogeneity. The coefficient for daughters, the reference group, is negative and statistically significant (-0.296), whereas the interaction between paternal housework participation and respondent gender is positive but statistically insignificant. Thus, although the estimated association is weaker for sons, the gender difference is not statistically significant.

The gender-specific results suggest that this association is more clearly observed among daughters. In the separate regressions, the coefficient is -0.300 and statistically significant at the 1% level for daughters, whereas the corresponding coefficient for sons is -0.056 and statistically insignificant. In the pooled interaction model, however, the interaction between fathers' housework participation and being a son is positive but statistically insignificant. The difference between sons and daughters should therefore be described as suggestive rather than statistically conclusive: the association is precisely estimated among daughters but not among sons, while the formal test does not establish that the two coefficients differ.

Read together with the behavioral results (Table 5), the estimates are consistent with potentially different manifestations of intergenerational association. Among sons, the clearest evidence concerns their own adult housework behavior. Among daughters, the clearest evidence concerns gender-role attitudes. The present results do not, however, establish that these pathways are mutually exclusive, nor do they provide statistically significant evidence that paternal participation affects the housework behavior of daughters' spouses.

These findings are broadly consistent with Wang and Zhang (2026), who also document an association

between paternal housework involvement during adolescence and more egalitarian gender attitudes in adulthood in Japan. However, whereas their estimates indicate a stronger association among men, the interaction between paternal housework participation and respondent gender is not statistically significant in the present analysis. Possible explanations for this difference are considered in the Discussion section.

Table 7 Dependent variable: Traditional Gender-role Attitudes, Ordered Logit model

Sample:	Full		Son	Daughter
	Model 22	Model 23	Model 24	Model 25
Father's housework participation	-0.199**	-0.296***	-0.056	-0.300***
	(0.084)	(0.109)	(0.138)	(0.111)
Respondent is male	0.379***	0.333***		
	(0.076)	(0.085)		
Father's housework participation* Respondent is male		0.251		
		(0.175)		
Pseudo R^2	0.038	0.038	0.028	0.044
Num. obs.	6,892	6,892	2,755	4,137

Notes: Only key coefficients are reported. All models include the same control variables as in Model 3 of Table 2, and year dummies. Full estimation results are reported in Appendix Table A7. Standard errors clustered at the individual level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

6 Discussion

The findings indicate that respondents who reported paternal housework participation at age 15 tended to report a narrower female-to-male housework-frequency gap in their adult marital households. The stability of the estimate after accounting for observed family-of-origin characteristics suggests that the association is not readily explained by the measured socioeconomic and demographic differences between respondents' childhood households. Nevertheless, because paternal participation is time invariant and its coefficient is identified from between-respondent variation, the results should be interpreted as an intergenerational association rather than as a causal effect.

The heterogeneity results provide limited evidence of systematic differences between sons and daughters. Although the estimated association is larger in absolute magnitude for sons, the formal interaction test does not reject equality of the coefficients. The supplementary analyses reveal descriptively different patterns: among sons, the clearest associations concern their own housework frequency and the shopping-specific gap, with weaker evidence for laundry, whereas among daughters the most precisely estimated supplementary association concerns less traditional gender-role attitudes toward housework. These results may reflect different behavioral and attitudinal manifestations of intergenerational continuity, but they do not establish distinct gender-specific transmission mechanisms.

Maternal employment provides additional contextual variation. The association is most clearly estimated among sons whose mothers worked full-time during adolescence, possibly because paternal participation was more visible or normatively distinctive in households in which mothers were strongly attached to paid employment. The corresponding patterns among daughters are weaker, and the interaction tests do not establish significant differences across maternal-employment categories. These results should therefore be interpreted as descriptive heterogeneity rather than evidence that maternal employment causally moderates the association.

The findings are consistent with research showing that parental housework arrangements are associated with household labor after children establish their own households, including Cunningham (2001) and Giménez-Nadal et al. (2019). The present study extends this literature to Japan, where the expansion of dual-earner households has not been accompanied by an equivalent redistribution of unpaid work. It also contributes by examining a couple-level female-to-male housework-frequency gap and

supplementing it with respondents' and spouses' frequencies, task-specific outcomes, and gender-role attitudes. This design provides a more differentiated account of the adult outcomes associated with paternal housework participation, although it cannot distinguish among behavioral transmission, partner selection, and intra-household negotiation.

Recent JLPS-based works examine paternal domestic involvement primarily in relation to adult gender ideology (Wang & Zhang, 2026; Li, 2026). The present study complements these works by focusing on reported housework allocation within respondents' later marital households. It also defines paternal involvement specifically as housework participation, separately from childrearing, and treats gender-role attitudes most directly related to the gendered division of paid work and housework as a supplementary outcome. The study therefore extends the emerging Japanese evidence from stated ideology to the reported organization of routine housework in the next generation.

7 Limitations

Several limitations should be considered. First, paternal housework participation at age 15 is measured retrospectively, and the housework frequencies of both adult spouses are reported by a single respondent. Nondifferential misclassification of paternal participation would generally be expected to attenuate the estimated association. In contrast, respondents in relatively egalitarian households may be more likely to recall or characterize their fathers as having participated in housework, which could exaggerate the negative association. Current housework reports may also differ by respondent gender; for example, male respondents may overreport their own domestic contributions (Kamo, 2000). Controlling for respondent gender captures average reporting differences but cannot eliminate reporting error correlated with paternal participation or current attitudes. The overall direction of bias is therefore uncertain.

Second, the outcome measures housework frequency rather than time. Frequency does not capture differences in task duration, intensity, or responsibility for planning and managing household work. A household may consequently appear relatively equal in frequency even when women spend considerably more time on domestic tasks. The conversion of ordinal response categories into monthly frequencies also assumes comparability between category intervals. Although wave 8 data show a positive relationship between frequency and time-based measures (Appendix Table A1), the correspondence is imperfect. The findings should therefore be interpreted as associations with reported participation frequency rather than precise time allocation.

Third, the sample is restricted to married respondents in different-sex couples. The estimates may consequently be affected by selection into marriage and partner choice. Respondents who observed paternal housework participation may differ in whether and when they marry or in their likelihood of selecting partners with egalitarian preferences. Part of the estimated association may therefore reflect assortative matching rather than changes in housework allocation within marriage. The findings cannot be generalized directly to unmarried, cohabiting, or same-sex couples.

Finally, the observational design does not eliminate unobserved family culture, parental gender attitudes, community norms, or other characteristics that may affect both paternal housework participation and children's later household arrangements. Prospective information from multiple family members, time-diary measures, and research designs generating plausibly exogenous variation in paternal housework participation would be needed to identify causal effects and distinguish among potential mechanisms more directly.

8 Conclusion

This study examines whether fathers' participation in housework during respondents' adolescence is associated with the division of housework in respondents' own marital households in adulthood. Using data from the Japanese Life Course Panel Survey, the results show that respondents who reported paternal housework participation at age 15 tend to have a narrower female-to-male housework-frequency gap in adulthood. The estimated association remains negative after accounting for observed family-of-origin characteristics and in expanded-control specifications that additionally include contemporaneous adult household conditions.

The study contributes to the literature by providing evidence from Japan and by examining housework allocation within adult children's own marital households. Whereas much of the existing literature focuses on children's individual housework participation or adult gender ideology, this study uses a couple-level female-to-male housework-frequency gap and supplements it with respondent-specific, spouse-specific, task-specific, and attitudinal outcomes. The supplementary analyses indicate descriptive variation across respondent gender and maternal-employment contexts, but the formal interaction tests provide limited evidence of systematic differences between groups.

The findings should be interpreted as evidence of intergenerational association rather than causal transmission. Retrospective and single-respondent reporting, selection into marriage, and unobserved family norms may contribute to the observed relationship. Nevertheless, the results indicate that paternal housework participation is a relevant observed component of the family-of-origin environment associated with the organization of unpaid work in the next generation.

This evidence is also relevant to policy discussions in Japan, where efforts to promote men's participation in household and caregiving responsibilities have accompanied broader work–family and gender-equality reforms. Such policies are primarily intended to reduce the immediate imbalance in unpaid work and improve work-family compatibility. The association documented here is also relevant to policy discussions concerning men's participation in unpaid work. However, the present design cannot establish whether policies that increase paternal housework participation generate intergenerational changes in adult children's later household behavior.

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Appendix

Table A1 Housework Time and Housework Frequency
Dependent variable: Housework Hours per week, OLS model

Sample:	Son	Daughter
	(1)	(2)
Housework frequency	0.595***	1.209***
	(0.050)	(0.107)
R^2	0.400	0.158
Adj. R^2	0.398	0.156
Num. obs.	389	614

Notes: The analysis uses Wave 8, the only wave with comparable information on housework time. Robust standard errors are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A2 Dependent variable: Female-to-Male Housework Frequency Gap, Pooled OLS model

Sample:	Full		
	Model 1	Model 2	Model 3
Father's housework participation	-0.159***	-0.162***	-0.127**
	(0.057)	(0.057)	(0.052)
Respondent is male	-0.306***	-0.296***	-0.310***
	(0.045)	(0.045)	(0.040)
Childhood variables (measured at age 15):			
Older-sibling composition:			
Only older brothers		0.129**	0.092**
		(0.055)	(0.046)
Only older sisters		0.053	0.004
		(0.057)	(0.051)
Both older brothers and older sisters		-0.002	0.021
		(0.098)	(0.086)
Only child		-0.054	-0.017
		(0.110)	(0.100)
Number of siblings:			
Two siblings		0.060	0.043
		(0.049)	(0.043)
Three siblings		0.130	0.090
		(0.091)	(0.074)
More than three siblings		-0.128	0.019
		(0.219)	(0.184)
Father's education (high school or above)		-0.098*	-0.045
		(0.054)	(0.050)
Mother's education (high school or above)		-0.041	-0.038
		(0.053)	(0.048)
Household economic status		-0.046	-0.030
		(0.056)	(0.048)
Household appliance ownership		0.057	0.062
		(0.052)	(0.048)
Respondents' adulthood variables:			
Male's age			-0.006
			(0.005)
Female's age			-0.005
			(0.006)
Years of marriage			0.030***
			(0.006)
Female-to-male education ratio			0.088
			(0.118)
Female's relative income			-1.876***
			(0.128)
Male employed			0.362
			(0.231)
Female employed			0.011
			(0.040)
Number of co-resident children			0.040*
			(0.022)
Year dummy	YES	YES	YES
R2	0.028	0.038	0.202
Adj. R2	0.028	0.036	0.199
Num. obs.	10,049	10,049	10,049

Notes: Standard errors clustered at the individual level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A3 Dependent variable: Female-to-Male Housework Frequency Gap, Pooled OLS model

Sample:	Full	Son	Daughter
	Model 4	Model 5	Model 6
Father's housework participation	-0.110*	-0.165*	-0.111*
	(0.063)	(0.088)	(0.063)
Respondent is male	-0.302***		
	(0.044)		
Father's housework participation* Respondent is male	-0.044		
	(0.107)		
Childhood variables (measured at age 15):			
Older-sibling composition:			
Only older brothers	0.093**	0.055	0.114*
	(0.046)	(0.078)	(0.058)
Only older sisters	0.004	-0.125	0.082
	(0.051)	(0.093)	(0.060)
Both older brothers and older sisters	0.022	-0.095	0.112
	(0.086)	(0.151)	(0.102)
Only child	-0.012	0.129	-0.119
	(0.101)	(0.126)	(0.146)
Number of siblings:			
Two siblings	0.044	0.105	-0.006
	(0.043)	(0.073)	(0.052)
Three siblings	0.090	0.122	0.062
	(0.074)	(0.131)	(0.092)
More than three siblings	0.017	0.301	-0.191
	(0.184)	(0.303)	(0.228)
Father's education (high school or above)	-0.044	-0.156*	0.023
	(0.050)	(0.090)	(0.059)
Mother's education (high school or above)	-0.038	0.015	-0.069
	(0.048)	(0.086)	(0.058)
Household economic status	-0.031	0.025	-0.054
	(0.048)	(0.078)	(0.060)
Household appliance ownership	0.062	0.102	0.021
	(0.048)	(0.077)	(0.061)
Respondents' adulthood variables:			
Male's age	-0.006	-0.015	-0.004
	(0.005)	(0.013)	(0.006)
Female's age	-0.005	-0.008	0.004
	(0.006)	(0.010)	(0.009)
Years of marriage	0.030***	0.039***	0.023***
	(0.006)	(0.010)	(0.007)
Female-to-male education ratio	0.086	0.004	0.148
	(0.118)	(0.212)	(0.144)
Female's relative income	-1.874***	-1.836***	-1.890***
	(0.128)	(0.201)	(0.162)
Male employed	0.362	0.099	0.551**
	(0.230)	(0.347)	(0.265)
Female employed	0.011	-0.028	0.019
	(0.039)	(0.067)	(0.047)
Number of co-resident children	0.040*	0.046	0.040
	(0.022)	(0.040)	(0.025)
Year dummy	YES	YES	YES
R2	0.202	0.185	0.199
Adj. R2	0.199	0.179	0.195
Num. obs.	10,049	4,003	6,046

Notes: Standard errors clustered at the individual level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A4 Dependent variable: Female-to-Male Housework Frequency Gap, Pooled OLS model

Sample:	Full	Son	Daughter
	Model 7	Model 8	Model 9
Father's housework participation	0.042	0.142	-0.077
	(0.106)	(0.134)	(0.152)
Mother's employment status:			
Full-time	0.156***	0.203**	0.115*
	(0.057)	(0.098)	(0.070)
Part-time	0.114**	0.086	0.115*
	(0.052)	(0.086)	(0.065)
Interaction terms:			
Father's housework participation* Full-time	-0.263*	-0.594***	0.005
	(0.144)	(0.216)	(0.188)
Father's housework participation* Part-time	-0.198	-0.286	-0.084
	(0.128)	(0.179)	(0.176)
Respondent is male	-0.309***		
	(0.040)		
Childhood variables (measured at age 15):			
Older-sibling composition:			
Only older brothers	0.086*	0.041	0.109*
	(0.046)	(0.077)	(0.058)
Only older sisters	0.000	-0.136	0.078
	(0.051)	(0.092)	(0.060)
Both older brothers and older sisters	0.015	-0.109	0.105
	(0.085)	(0.149)	(0.102)
Only child	-0.019	0.091	-0.114
	(0.100)	(0.125)	(0.146)
Number of siblings:			
Two siblings	0.037	0.103	-0.010
	(0.043)	(0.073)	(0.052)
Three siblings	0.094	0.132	0.078
	(0.075)	(0.133)	(0.093)
More than three siblings	0.011	0.289	-0.184
	(0.180)	(0.292)	(0.226)
Father's education (high school or above)	-0.034	-0.134	0.027
	(0.050)	(0.090)	(0.060)
Mother's education (high school or above)	-0.039	-0.001	-0.062
	(0.048)	(0.085)	(0.058)
Household economic status	-0.031	0.019	-0.051
	(0.048)	(0.078)	(0.060)
Household appliance ownership	0.072	0.103	0.035
	(0.048)	(0.077)	(0.061)
Respondents' adulthood variables:			
Male's age	-0.006	-0.014	-0.004
	(0.005)	(0.013)	(0.006)
Female's age	-0.004	-0.009	0.006
	(0.006)	(0.010)	(0.009)
Years of marriage	0.030***	0.038***	0.022***
	(0.006)	(0.010)	(0.007)
Female-to-male education ratio	0.094	0.006	0.153
	(0.118)	(0.209)	(0.145)
Female's relative income	-1.885***	-1.845***	-1.891***
	(0.128)	(0.198)	(0.162)
Male employed	0.340	0.096	0.519**
	(0.226)	(0.336)	(0.263)
Female employed	0.007	-0.023	0.008
	(0.040)	(0.066)	(0.047)
Number of co-resident children	0.039*	0.050	0.036
	(0.022)	(0.040)	(0.025)
Year dummy	YES	YES	YES
R2	0.205	0.192	0.201
Adj. R2	0.202	0.186	0.197
Num. obs.	10,049	4,003	6,046

Notes: Standard errors clustered at the individual level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A5 Dependent variable: Housework Frequency, Pooled OLS model

Individuals:	Son	Son's wife	Daughter	Daughter's husband
	Model 10	Model 11	Model 12	Model 13
Father's housework participation	0.657*	-0.086	-0.174	0.327
	(0.387)	(0.483)	(0.316)	(0.266)
Childhood variables (measured at age 15):				
Older-sibling composition:				
Only older brothers	-0.274	-0.534	0.862***	-0.192
	(0.343)	(0.424)	(0.300)	(0.242)
Only older sisters	0.643	-0.329	0.578**	-0.101
	(0.417)	(0.545)	(0.293)	(0.265)
Both older brothers and older sisters	0.242	-0.371	0.546	-0.358
	(0.585)	(0.716)	(0.528)	(0.412)
Only child	-0.910*	-0.418	0.320	0.512
	(0.537)	(0.767)	(0.825)	(0.594)
Number of siblings:				
Two siblings	-0.182	0.314	-0.173	-0.017
	(0.338)	(0.403)	(0.269)	(0.223)
Three siblings	-0.107	0.973	0.576	-0.181
	(0.530)	(0.705)	(0.378)	(0.371)
More than three siblings	-0.804	0.144	-0.621	0.682
	(1.210)	(1.462)	(1.124)	(0.853)
Father's education (high school or above)	0.845**	-0.007	0.220	0.047
	(0.345)	(0.520)	(0.319)	(0.248)
Mother's education (high school or above)	-0.122	-0.328	-0.283	0.056
	(0.343)	(0.482)	(0.314)	(0.261)
Household economic status	-0.408	-0.190	0.081	0.246
	(0.331)	(0.451)	(0.303)	(0.245)
Household appliance ownership	-0.302	0.125	-0.022	0.000
	(0.328)	(0.459)	(0.303)	(0.256)
Respondents' adulthood variables:				-0.072
Male's age	0.090	0.024	0.009	0.027
	(0.060)	(0.071)	(0.029)	(0.026)
Female's age	0.027	-0.001	0.018	-0.031
	(0.051)	(0.058)	(0.045)	(0.039)
Years of marriage	-0.166***	0.134**	0.092***	-0.061**
	(0.043)	(0.060)	(0.034)	(0.028)
Female-to-male education ratio	0.357	-0.165	0.193	-0.367
	(0.883)	(1.280)	(0.723)	(0.612)
Female's relative income	6.032***	-11.156***	-9.094***	6.978***
	(0.964)	(1.170)	(0.755)	(0.764)
Male employed	-0.307	0.946	2.499**	-2.906**
	(1.637)	(1.479)	(1.111)	(1.253)
Female employed	0.118	-0.708*	-0.483**	-0.258
	(0.290)	(0.364)	(0.238)	(0.185)
Number of co-resident children	0.106	0.828***	1.243***	0.168*
	(0.171)	(0.226)	(0.136)	(0.102)
Year dummy	YES	YES	YES	YES
R2	0.111	0.222	0.271	0.111
Adj. R2	0.105	0.216	0.268	0.107
Num. obs.	4,003	4,003	6,046	6,046

Notes: Standard errors clustered at the individual level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A6 Dependent variable: Female-to-Male Housework Frequency Gap, Pooled OLS model

Sample:	Son				Daughter			
Tasks:	Laundry	Cooking	Cleaning	Shopping	Laundry	Cooking	Cleaning	Shopping
	Model 14	Model 15	Model 16	Model 17	Model 18	Model 19	Model 20	Model 21
Father's housework participation	-0.232*	-0.065	-0.132	-0.241***	-0.049	-0.106	-0.112	-0.091
	(0.134)	(0.120)	(0.101)	(0.086)	(0.080)	(0.076)	(0.073)	(0.077)
Childhood variables (measured at age 15):								
Older-sibling composition:								
Only older brothers	-0.015	0.008	0.008	0.093	0.083	0.167**	0.123*	0.159**
	(0.117)	(0.102)	(0.093)	(0.086)	(0.078)	(0.071)	(0.069)	(0.074)
Only older sisters	-0.229*	-0.097	-0.179	-0.094	0.061	0.092	0.162**	0.121
	(0.136)	(0.122)	(0.113)	(0.100)	(0.077)	(0.076)	(0.068)	(0.076)
Both older brothers and older sisters	-0.246	-0.257	-0.022	0.099	0.117	0.070	0.049	0.247**
	(0.180)	(0.217)	(0.165)	(0.166)	(0.156)	(0.116)	(0.111)	(0.126)
Only child	0.202	0.150	0.041	0.218*	-0.012	-0.193	-0.093	0.084
	(0.187)	(0.159)	(0.163)	(0.129)	(0.161)	(0.199)	(0.196)	(0.157)
Number of siblings:								
Two siblings	0.015	0.046	0.134	0.164**	-0.028	0.017	-0.102*	0.056
	(0.106)	(0.094)	(0.087)	(0.079)	(0.071)	(0.064)	(0.060)	(0.066)
Three siblings	0.266*	-0.047	0.066	0.190	0.155	-0.015	0.083	0.033
	(0.158)	(0.191)	(0.169)	(0.157)	(0.103)	(0.109)	(0.094)	(0.136)
More than three siblings	0.195	0.214	0.295	0.144	-0.639*	0.084	-0.010	-0.144
	(0.326)	(0.452)	(0.212)	(0.421)	(0.374)	(0.218)	(0.189)	(0.204)
Father's education (high school or above)	-0.202	-0.179	-0.268**	0.026	-0.011	-0.051	0.045	0.057
	(0.140)	(0.119)	(0.111)	(0.097)	(0.074)	(0.075)	(0.069)	(0.076)
Mother's education (high school or above)	0.070	0.001	0.109	-0.101	-0.095	-0.003	-0.060	-0.071
	(0.135)	(0.113)	(0.104)	(0.093)	(0.077)	(0.076)	(0.065)	(0.071)
Household economic status	0.027	0.190*	-0.097	0.014	-0.051	-0.122	0.003	0.018
	(0.117)	(0.101)	(0.097)	(0.085)	(0.075)	(0.076)	(0.070)	(0.074)
Household appliance ownership	0.082	-0.004	0.128	0.184**	0.027	-0.006	-0.035	-0.012
	(0.116)	(0.102)	(0.094)	(0.088)	(0.085)	(0.075)	(0.071)	(0.075)
Respondents' adulthood variables:								
Male's age	-0.009	-0.021	-0.012	-0.004	-0.007	0.009	0.003	-0.009
	(0.019)	(0.018)	(0.015)	(0.013)	(0.007)	(0.008)	(0.007)	(0.007)
Female's age	-0.016	-0.001	-0.008	-0.008	0.023**	-0.000	-0.014	0.014
	(0.014)	(0.015)	(0.012)	(0.011)	(0.012)	(0.012)	(0.010)	(0.011)
Years of marriage	0.062***	0.028*	0.040***	0.031***	0.022**	0.004	0.030***	0.023***
	(0.015)	(0.014)	(0.011)	(0.010)	(0.009)	(0.009)	(0.008)	(0.009)
Female-to-male education ratio	-0.126	-0.252	0.167	0.298	0.220	0.030	0.329**	0.110
	(0.297)	(0.269)	(0.269)	(0.238)	(0.187)	(0.182)	(0.147)	(0.185)
Female's relative income	-2.148***	-1.854***	-2.082***	-1.514***	-2.375***	-1.894***	-2.131***	-1.224***
	(0.318)	(0.284)	(0.236)	(0.199)	(0.230)	(0.204)	(0.176)	(0.184)
Male employed	-0.219	0.596*	0.144	-0.090	0.617*	0.410	0.711**	0.603*
	(0.509)	(0.320)	(0.431)	(0.298)	(0.324)	(0.276)	(0.297)	(0.343)
Female employed	-0.036	-0.053	-0.259***	0.095	-0.057	0.031	-0.171***	-0.173***
	(0.092)	(0.089)	(0.078)	(0.073)	(0.056)	(0.056)	(0.056)	(0.063)
Number of co-resident children	0.090	0.017	0.046	0.033	0.053	0.002	0.124***	0.042
	(0.057)	(0.055)	(0.045)	(0.041)	(0.034)	(0.033)	(0.029)	(0.030)
Year dummy	YES	YES	YES	YES	YES	YES	YES	YES
R2	0.155	0.112	0.189	0.102	0.196	0.120	0.222	0.076
Adj. R2	0.149	0.106	0.183	0.096	0.193	0.116	0.218	0.071
Num. obs.	4,003	4,003	4,003	4,003	6,046	6,046	6,046	6,046

Notes: Standard errors clustered at the individual level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A7 Dependent variable: Traditional Gender-role Attitudes, Ordered Logit model

Sample:	Full		Son	Daughter
	Model 22	Model 23	Model 24	Model 25
Father's housework participation	-0.199**	-0.296***	-0.056	-0.300***
	(0.084)	(0.109)	(0.138)	(0.111)
Respondent is male	0.379***	0.333***		
	(0.076)	(0.085)		
Father's housework participation* Respondent is male		0.251		
		(0.175)		
Childhood variables (measured at age 15):				
Older-sibling composition:				
Only older brothers	0.214**	0.210**	0.089	0.273**
	(0.092)	(0.091)	(0.141)	(0.124)
Only older sisters	0.180*	0.179*	-0.027	0.290**
	(0.100)	(0.100)	(0.163)	(0.127)
Both older brothers and older sisters	0.084	0.080	-0.301	0.358*
	(0.161)	(0.161)	(0.267)	(0.207)
Only child	-0.197	-0.221	-0.301	-0.210
	(0.163)	(0.164)	(0.199)	(0.252)
Number of siblings:				
Two siblings	-0.025	-0.030	0.033	-0.091
	(0.082)	(0.082)	(0.136)	(0.105)
Three siblings	0.090	0.089	-0.100	0.166
	(0.177)	(0.177)	(0.308)	(0.211)
More than three siblings	0.166	0.180	0.261	-0.014
	(0.230)	(0.232)	(0.275)	(0.343)
Father's education (high school or above)	-0.084	-0.085	-0.151	-0.035
	(0.103)	(0.103)	(0.158)	(0.138)
Mother's education (high school or above)	-0.172*	-0.173*	-0.186	-0.182
	(0.097)	(0.097)	(0.154)	(0.125)
Household economic status	0.214**	0.219**	-0.010	0.383***
	(0.097)	(0.097)	(0.156)	(0.125)
Household appliance ownership	0.168*	0.170*	0.163	0.163
	(0.088)	(0.088)	(0.135)	(0.119)
Respondents' adulthood variables:				
Male's age	0.000	0.000	-0.008	-0.004
	(0.010)	(0.010)	(0.022)	(0.011)
Female's age	-0.003	-0.003	-0.012	0.017
	(0.012)	(0.012)	(0.019)	(0.019)
Years of marriage	0.004	0.004	0.004	0.001
	(0.010)	(0.010)	(0.015)	(0.014)
Female-to-male education ratio	-0.166	-0.154	0.051	-0.279
	(0.220)	(0.220)	(0.377)	(0.279)
Female's relative income	-2.541***	-2.551***	-2.072***	-2.816***
	(0.223)	(0.223)	(0.348)	(0.293)
Male employed	-0.328	-0.331	0.250	-0.620
	(0.278)	(0.280)	(0.399)	(0.398)
Female employed	-0.156**	-0.153**	-0.205*	-0.145
	(0.077)	(0.078)	(0.115)	(0.105)
Number of co-resident children	0.016	0.015	0.090	-0.027
	(0.039)	(0.039)	(0.062)	(0.051)
Year dummy	YES	YES	YES	YES
Pseudo R^2	0.038	0.038	0.028	0.044
Num. obs.	6,892	6,892	2,755	4,137

Notes: Standard errors clustered at the individual level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.