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Renegotiated Boundaries Between Asian Married Women's Paid and Unpaid Work: Policy, Social Contexts, and Gender Dynamics

Education and the Gender Division of Labor in Japan: Trends in Paid and Unpaid Work From 1991 to 2016

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ABSTRACT

This paper develops a nuanced understanding of how educational attainment is associated with time allocation trends of Japanese men and women by examining the gendered division of labor in Japan between 1991 and 2016. The analysis reveals that while university-educated men and women led a slow shift toward greater equality in housework sharing during these years, overall traditional highly gendered patterns persisted. Husbands continued to spend considerably more time on paid work and wives took care of most housework and childcare. There is no evidence for convergence in paid work or childcare for any educational group. In childcare, both men and women across educational groups increased their time investment. Even in families where wives have university education and see themselves primarily as workers, I document only limited shift away from the traditional division of labor between 1991 and 2016. I conclude that the transformation of employment practices in addition to changes in individuals' beliefs and state work–family balance policies may be necessary for a more meaningful social change.

1 | Introduction

How individuals allocate their time to paid work, housework, and childcare has important consequences for their human capital development and earnings (M. Y. Kan and Gershuny 2009; Noonan 2001). Time spent on housework and childcare, also referred to as domestic work or unpaid work, reduces the time available for paid work and career development. Convergence in time use is a core measure of the transition from a traditional breadwinner–homemaker family model to a model where spouses share paid and unpaid labor equally; a process often referred to as the gender revolution (Goldscheider, Bernhardt, and Lappegård 2015). Researchers argue that this transition tends to happen in two distinct stages. During the first stage, women's participation in paid work goes up, but they still carry out most of the unpaid work in the home. In the second stage, men increase their unpaid domestic work contributions. Theoretically, the end point of the gender revolution is gender equality in paid and unpaid work, but this has not yet been achieved anywhere in the world. Time use researchers have documented a narrowing gap in women's and men's participation in paid work, housework, and childcare across advanced societies since the 1960s while noting that in recent decades this convergence has stalled (England, Privalko, and Levine 2020; Kan et al. 2022; Sullivan, Gershuny, and Robinson 2018).

The convergence in housework and paid work between genders has primarily been driven by women's reduced domestic labor

and increased participation in the workforce. While men have gradually contributed to this convergence by increasing their housework time and reducing paid work hours, these adjustments have been substantially smaller in magnitude compared to the changes in women's time allocation patterns (Sullivan, Gershuny, and Robinson 2018; Sullivan 2010). Childcare trends are different. In many societies, both men and women have increased the time spent on childcare in recent decades, so any observed convergence happens only when men increase their childcare time to a greater extent than women do (Pailhé, Solaz, and Stanfors 2021).

While broad convergence trends are well documented, there has been much less research on how different social groups experience convergence. Most of the available literature on social subgroups focuses on childcare trends, highlighting the strong positive association between education and increased amount of time invested in childcare by both fathers and mothers in the Global North (Altintas 2016; Cha and Park 2021; Gao 2023; Sani and Treas 2016). We know little, however, about how different educational groups adjust time spent on paid work and housework over time and how the trends in these three types of work jointly evolve.

In this paper, I address this gap by documenting trends in paid work, housework, and childcare for married men and women and how these vary with different levels of educational attainment in contemporary Japan. I choose Japan because it went through social changes that have been associated with gender convergence in paid and unpaid work participation during the period under observation and yet is still known to be markedly gender-unequal in its division of labor. The relevant social changes include a major expansion of policies supporting work–family balance between early 1990s and today (Boling 2015, ch.5; Ikezoe 2014), a rise in female educational attainment (Tsuya 2024), and a rise in the labor market opportunities open to women (Ikeda 2019; OECD 2023). I first describe the (very limited) progress of the gender revolution in Japan, documenting differences in changes in paid and unpaid work trends. Second, I consider associations between educational attainment and paid work, housework, and childcare contributions and assess a hypothesis that the limited changes observed overall mask more pronounced transition to greater equality in paid and unpaid work among more educated men and women. Descriptive analysis looking at paid work as well as both types of unpaid work (housework and childcare) enables me to document shifts in overall workloads for men and women in general as well as for men and women belonging to different educational groups. This analysis helps me to throw light on the way the gender revolution is unfolding in Japan and perhaps more crucially how it is stalling. To do this, I rely on six waves of the nationally representative Survey of Time Use and Leisure Activities (the Japanese national time diary survey), collected between 1991 and 2016.

2 | Explaining Gender Convergence in Paid and Unpaid Work Over Time

Research on trends in the gendered division of paid and unpaid labor has yielded several well-established findings: (1) In spite of decades of convergence in the way men and women allocate time to paid and unpaid work, both activities remain gendered throughout the world (e.g., Altintas and Sullivan 2016). The gender gap is especially pronounced in East Asia (Kan et al. 2022). (2) Women's paid work time has increased while their domestic contribution has decreased, accompanied by a (smaller) increase in men's housework time (Sullivan, Gershuny, and Robinson 2018; Sullivan 2010). (3) In recent decades, the change in women's behavior has been larger than the change in men's (e.g., Bianchi et al. 2012; Goldin 2014). I add to the existing work documenting gendered shifts in times spent on paid and unpaid work by focusing on how various educational subgroups differentially contribute to these changes and how trends in paid work, housework, and childcare jointly vary over time.

I differentiate my analysis by educational attainment because education has been consistently identified as one of the most significant factors affecting the performance of domestic and caring work (e.g., Davis and Greenstein 2004). Education is also associated with better access to economic resources (Hout 2012; Montenegro and Patrinos 2014). While there are other, more precise measures of earning power such as income or occupation, data on education is more consistently available across time (e.g., Hertz et al. 2008), including for Japan. Apart from its material relevance, educational attainment is also a socialization process that typically results in a more gender egalitarian outlook (Bolzendahl and Myers 2004; Deole and Zeydanli 2021; Raz-Yurovich and Okun 2024).

The two dominant theoretical perspectives linking educational attainment and paid work and housework participation focus on economic resources and gender ideology. Neither perspective has been shown to be a good fit for childcare trends, especially when these are analyzed by education, and I will discuss the relevant literature separately later in the paper (Sullivan 2013). According to the economic perspective, in married couples, individuals with higher earning power will focus on paid work and reduce their unpaid work participation, leaving it to their partners or outsourcing it to the market (e.g., Gupta 2007; Killewald and Gough 2010). The gender ideology perspective, by contrast, predicts that men and women with a college education will share paid and unpaid work more equally in their families than their lower-educated counterparts. Educational expansion is a major contributor to the rise of gender egalitarianism globally (Kan and Kolpashnikova 2021; Thijs et al. 2019), and better-educated men and women tend to be the first to adopt more gender-equal values (Pampel 2011). Over time, the association between education and more egalitarian division of labor could strengthen if it becomes easier for women to convert education into earning power, as women's rising earning power reduces their comparative advantage in unpaid work. It could also weaken if more egalitarian values and behaviors spread from more to less educated individuals.

Empirically, women's higher education has been associated with stronger labor market attachment, more paid work, and less housework in the US, UK, Austria, and Japan (Craig 2006; Hertog et al. 2021; M. Kohara 2007; Kolpashnikova and Koike 2021; Spitzer and Hammer 2016; Uchikoshi and Raymo 2021). A few studies indicate that men and women with college education

share paid and unpaid work more equally in their families than their lower-educated counterparts in Europe, the United States, and Japan (Harkness 2003; Hertog et al. 2021; Oinas 2018). All these papers rely on data from a single point in time, and so are unable to throw light on the trends over time.

A few studies have documented shifts in housework time and paid work time and how these are associated with education. Gershuny (2011) documents a reversal in the association between education and paid work time between the 1990s and 2000s for men in 11 developed countries (Canada, UK, US, Australia, Netherlands, Sweden, Norway, Denmark, Finland, France, and Italy). Higher education was associated with shorter paid work time in the 1990s but longer paid work time in the 2000s. The change was driven by both lower educated men working less and higher educated men working more. Evertsson et al. (2009) find that gender inequality in paid work and housework becomes less pronounced as educational attainment increases in the Netherlands, Sweden, and the United States, with the root cause being the high employment levels of well-educated women. Analyzing housework time in dual earner couples with children between the 1960s and the early 2000s in the UK and 1975 and 2003 in the US, Sullivan (2013) finds a strengthening negative association between housework time and educational attainment for mothers and a weakening negative association for fathers that disappears by early 2000s. Evertsson and Nermo (2007) find that in Sweden between 1991 and 2000, women's share of the housework decreases when their relative resources in terms of the level of education and social status increase.

Viewing education as a proxy for economic resources or more egalitarian values does not help us make sense of the way trends in childcare time are patterned by education. Contrary to what theories linking education to economic resources and egalitarian outlook would have us expect, university education has been associated with more intensive parenting investment for both men and women across industrialized countries, including the United States (England and Srivastava 2013; Guryan, Hurst, and Kearney 2008), South Korea (Cha and Song 2017), United Kingdom, Canada, Germany, Italy, Norway (Sayer, Gauthier, and Furstenberg 2004), and others (Sani and Treas 2016). This may be because in addition to being work that is necessary for everyday family life, childcare is also a means for socialization and intergenerational transmission of economic and cultural capital (Doepke and Zilibotti 2019; Sayer, Gauthier, and Furstenberg 2004). As a result, one's willingness to invest time in childcare is affected by one's beliefs about parenting and childrearing and the associated pressures (Gupta, Sayer, and Pearlman 2021). These beliefs and pressures vary systematically by education (Bornstein et al. 2010; Ghosh and Steinberg 2022).

Doepke and Zilibotti's (2019) framework of *economic incentives* to parenting traces the rise of intensive parenting ideology to growing social inequality that makes it rational for parents to invest heavily in their children's development, formal education, and other marketable skills. This approach expects similarly increased investment in children by both mothers and fathers in societies with rising inequality, as a rational response of parents who want to secure their children's future. It also predicts that more educated parents will lead in this trend, as their children have a lot to lose if they are unable to maintain their parents' economic standing.

While these theories and empirical findings help us understand changes in paid and unpaid work participation by gender and education generally, Japan presents a particularly interesting case for examining how educational attainment shapes the gendered division of labor over time, as discussed in the next section.

3 | The Context of the Study: Japan

Japan is characterized by a highly gendered division of labor in married couples. The majority of Japanese men are breadwinners within their families, and in most Japanese married couples, wives earn 30% or less of what their husbands do (Shirahase 2014). Marriage is often out of reach for those Japanese men who cannot assume the breadwinner role (Yoshida 2016). For women, precarious employment is less of an obstacle to marriage, but marriage comes with huge time constraints. While women in East Asian, European, and Anglophone societies generally continue to shoulder a larger share of domestic work and spend less time on paid work than men do, the gender gap is especially pronounced in East Asia (Kan et al. 2022). In 2016, Japanese married men spent 49 min doing housework on an average day, compared to 20 min daily for single men. Japanese married women, by contrast, did five times more housework compared to single women, resulting in around 5 h and 1 h of housework respectively on an average day (Statistics Bureau Japan 2016, 3–4). Many married Japanese women leave the labor market upon having a child, often to return to a dead-end part-time job later. Women continue to form the bulk of nonstandard labor, while there are few female senior managers and virtually no women on company boards (Estévez-Abe 2013; Nemoto 2016; Yu 2009). Japan has one of the largest gender wage gaps in the OECD nations (OECD 2023). Japan is also characterized by persistently traditional attitudes to the gendered division of labor that have changed little between the 1990s and these days (Piotrowski et al. 2019). The (limited) available evidence of gender convergence in paid and unpaid labor in Japan indicates that whatever convergence is happening is very slow (Kan et al. 2022; Nishioka and Yamauchi 2017).

While gender inequality remained high in Japan between 1991 and 2016, women made substantial gains both in education and labor market participation during these years (see Table 1). From the early 1990s, more women than men have been entering tertiary education. Few women than men attend universities, but the gap has decreased substantially in recent decades. In 1991, 35% of eligible men and 16% of eligible women enrolled into universities; in 2016, the respective figures were 56% and 48% (MEXT 2017). Marriages where the wife continued working after marriage increased from 57% in the early 1990s to 80% of all marriages in the 2015–2019 time period (NIPSSR 2021, 66). While in 1992, only 27% of Japanese unmarried men said earning power is an important quality they look for in a wife; by 2015, this number had gone up to 42% (NIPSSR 2021, 33). The gender wage gap has dropped from 40.6% in 1990 to 24.6% in 2016 (OECD 2023).

TABLE 1 | Relevant socioeconomic indicators between 1990 and 2016 in Japan.

Year	Female university students[a] (%)	Women aged 20–59 in the labor market[b] (%)	Companies with at least one female general manager[c] (%)	Gender wage gap[d] (%)
1990	27.4	65	1992: 7.2	40.6
1991		65		39.9
1995	32.3	66	7.1	37.1
1996		66	1998: 5.8	36.9
2000	36.2	66	7.4	33.9
2001		67		32.5
2005	39.3	68	8.8	32.8
2006		68		33.0
2010	41.1	70		28.7
2011	42.4	70	14.4	26.5
2015	43.1	74	2013: 12.9	25.7
2016	43.4	75		24.6

[a]MEXT (2017).
[b]Statistics Bureau Japan(various years).
[c]https://www.mhlw.go.jp/toukei/list/dl/71-25r-02.pdf.
[d]https://data.oecd.org/earnwage/gender-wage-gap.htm.

Between 1991 and 2016, the Japanese government enacted a number of policies aimed at increasing women's participation in paid employment and men's involvement in domestic work, including childcare (Kohara and Maity 2021; Nakazato 2019; Roberts 2002). The main measures implemented in the 1990s and early 2000s were the introduction of a childcare leave program, its later enhancement, and an increase in the number of accredited childcare places (see Table 2). Such policies, especially publicly funded childcare, are known to promote women's employment (Pettit and Hook 2005).

While many women, especially those in full-time jobs, were able to benefit from these policies, the take up rate among men has remained persistently low. In 1996, 0.12% of eligible men took paternity leave; by 2016, this figure had risen to 3.16% (Nakazato 2019). In 2020, 57% of men who took paternity leaves took it for less than 5 days. In contrast, 94% of women took maternity leaves for more than 6 months (Ishii-Kuntz 2022, 42).

Social inequality has increased in Japan over recent decades (OECD 2019), and this could imply additional pressures on (more educated) parents to spend time with their children in line with Doepke and Zilibotti's (2019) *economic incentives* framework. Using frequency of fathers' participation in childcare as their measure, Nishioka and Yamauchi (2017) do not find support for fathers' increased childcare investment in Japan. However, frequency of childcare participation does not capture the length of time spent on childcare directly, so this evidence is inconclusive.

The major socioeconomic and policy changes experienced by Japanese men and women between 1991 and 2016 suggest that the limited aggregate changes in the gendered division of labor noted by Kan et al. (2022) might mask more pronounced shifts experienced by specific subgroups exposed to social and institutional changes to differing degrees.

In this paper, I look for the evidence for such shifts among men and women with different levels of educational attainment and wives' labor market participation. Given the persistently high levels of gender inequality in the Japanese labor market, higher education is not a guarantee of better access to economic resources for women. The pressure to exit the paid labor market upon marriage or childbirth remains strong even for Japanese women with university education (Brinton and Oh 2019). Homemakers and working women differ in their time availability and access to economic resources. The associated practical considerations are likely to influence how they and their spouses allocate their time; so for married women, I analyze the effects of education by their labor market participation to capture potential differences.

4 | Hypotheses

In line with the preceding discussions on theory and national context, I make the following conjectures. Based on the economic and gender ideology perspectives, I expect that women's increased human capital and orientation toward paid work will be associated with lower time spent on housework and longer time in paid work. More equal resources should enable women to bargain away housework or set a new (lower) standard for it. This could imply that men increase their inputs within the domestic sphere to compensate for women's reduced time at least partially. More emphasis on gender equality and egalitarian gender roles in the labor market and in the home should imply a reduction of women's housework over time, whereas men's time spent on housework should increase. Thus, I expect gender convergence over time in paid work and housework between men and women (H1).

Following existing research, I expect that changes in time men and women invest in childcare will fit economic and gender

TABLE 2 | Policy changes aimed to improve parents' ability to balance work and family enacted by the Japanese government, 1991–2014.

Year	
1991	Childcare leave Act enacted
1994	The angel plan or the "basic direction for future child rearing support measures" (1995–1999) formulated. The "five-year emergency measures for childcare services" planned
1995	Revised Childcare Leave Act, becomes the child care and family care leave Act
1999	New angel plan formulated: Setting specific targets for better access to childcare, reducing the burden of education costs on families, and improving the working environment for women
	Family-friendly companies awards begin
2000	Nursing care insurance system enters into force
2003	Act on advancement of measures to support raising next-generation children enacted
	Basic Act for measures to cope with society with declining birth rate enacted
2005	Parental leave and payment can now be extended until a child reaches 18 months under certain conditions, such as there being no childcare places available
2007	Work–life balance charter issued. The charter outlines guidelines and goals to promote environments where people can more easily balance their professional and personal responsibilities.
2010	Both parents can now take leave and receive payment at the same time, including employed parents whose spouse is not employed
2014	Parental leave benefit payment increased to 67% of earnings for the first 6 months for each parent, after which it drops to 50% for the remaining leave period

Source: (Boling 2015; Ikezoe 2014; Kawaguchi 2013; NIPSSR 2003).

equality explanations to a lesser extent than housework and paid work. Changes in childcare trends over time may be better understood through changing parenting incentives, which in turn are at least partially driven by changes in social inequality. As Japan has experienced a rise in social inequality in recent decades, I expect that as in many other developed countries, men and women will be spending more time on childcare over time (H2).

I expect higher levels of education for both men and women to be associated with higher levels of convergence in paid work and housework (H3a). For women, I expect that education will have a particularly strong association with reductions in housework time and longer paid work time for wives who see themselves primarily as workers and that this association will strengthen over time (H3b).

I remain agnostic about the trends in the positive association between education and shifts to more egalitarian sharing of paid work and housework within couples. This association could be strengthening as the policy environment makes combining work and family easier and more women are able to convert their education into earnings (H4a). Alternatively, it could also be weakening as a more egalitarian division of labor within couples spreads through social diffusion from university-educated people to the general population (H4b).

When it comes to childcare time, I expect higher educated men and women to be the main agents of change. I expect that the higher the level of education, the larger the increase of childcare time we will observe over time, as more educated parents are under stronger pressure to invest in their children (H5).

5 | Material and Methods

5.1 | Data

I analyze data from the 4th to the 9th waves of the Survey on Time Use and Leisure Activities (STULA) that were collected in 1991, 1996, 2001, 2006, 2011, and 2016 (Statistics Bureau various years). STULA has been conducted every five years since 1976 by the Statistical Bureau of Japan and has had a time diary component since 1991. Each survey has collected information from around 200,000 persons over two consecutive days. Over 99.5% of the respondents completed time diaries for two consecutive days (while the remaining 0.5% completed only 1 day), recording their activities on those days in 15-min intervals.

My analytical sample contains married women and men aged 20–59.[1] I excluded everyone currently in education (0.1% of the sample) and men who do not define themselves primarily as workers (around 3% of married, working-age men). The sample becomes smaller and older with every consecutive 5-year period, which is consistent with a trend for delayed and forgone marriages in Japan. For a detailed description of the sample by survey year, see Table 3.

TABLE 3 | Descriptive statistics by survey year, limited to individuals aged 20–59.

	1991	1996	2001	2006	2011	2016
Gender (%)						
Female	50.6	50.7	50.5	50	50.2	50
Wife's education (%)						
JHS	21	16.6	10.4	7.2	4.7	3.1
HS	56.3	55.3	54.1	49.9	44.4	34.8
JC/VS	16.2	20.1	25.3	29.1	33.9	39.6
UNI	6.5	8	10.2	13.9	17	22.6
Husband's education (%)						
JHS	22.8	19.2	14.2	10.9	7.3	4.6
HS	47.2	46.9	46.8	44.9	42.3	35.6
JC/VS	5.2	5.3	7.1	9	10.6	15.7
UNI	24.8	28.6	31.9	35.2	39.8	44.1
Wife sees herself as mainly (%)						
Worker	30	30.2	31.8	32.4	31.7	36.4
Taking care of domestic work as well as working for pay	32.8	30.8	29.9	29.9	32.5	34.6
Focusing on domestic work	37.3	39	38.3	37.6	35.8	29
Age (%)						
20–29	9.4	10	9.4	7.4	6.3	5.4
30–39	27.3	25.5	27.7	29.9	29.6	26.6
40–49	36.2	35.8	29.6	29.2	32.7	36.8
50–59	27.1	28.7	33.2	33.5	31.4	31.1
Survey taken on weekends (%)	28.4	28.2	28.6	28.9	29	28.8
Average household income (millions of yen)	6.5	7.4	7.2	6.9	7.3	8
Mean number of adults in the household	2.7	2.7	2.6	2.6	2.5	2.4
Own child under six (% of households)	19.1	22.5	24.6	25.7	26.3	26.6
Observations (unweighted)	180,458	161,221	102,886	91,738	81,867	74,124

5.2 | Measures

5.2.1 | Dependent Variables

I use two types of dependent variables: variables measuring time spent on paid work and housework in minutes and variables calculating the wife's shares of a couple's total time spent on paid work, housework, and childcare. All my dependent variables are calculated across the days of the week, that is, the days of the observation include both weekdays and weekends. Paid work and housework times and shares are calculated using the full analytical sample. Childcare time and share are calculated on the sample of families with at least one child under the age of six.[2] Couples where neither the husband nor the wife spend any time on a given activity are excluded from the analysis of shares.

5.2.2 | Independent Variables

I estimate separate regressions for men and women. Our core variables of interest are education and survey year. I use the following four measures of completed education: (1) junior high school (JHS), (2) high school (HS), (3) 2-year junior college/technical college/vocational school (JC/VS), and (4) university or graduate school (UNI).[3] JHS graduates become progressively rarer over time (see Table 3). Almost all men in the JC/VS category graduated from vocational schools or technical colleges which focus on job training, which is typically completed at age 20. In contrast, roughly two-thirds of women in the JC/VS category graduated from junior colleges, which tend to focus on liberal arts (for more information on the Japanese education system, see Fujihara and Ishida 2016).

In Japan, most married men of working age categorize themselves primarily as paid workers. This is not the case for married women however. Women's labor market participation is measured through their response to a question "Do you normally work", which has six possible responses: "I primarily work", "I do housework and work as well", "I study and work as well", "I do housework", "I study", and "other". I limit the analytical sample to men who answered, "I primarily work" and women who chose one of the following answers: "I primarily work", "I do housework and work as well", and "I do housework". I refer to this measure as wife's participation in the labor

market. I choose it over a more typical measure of employment status[4] for two reasons. First, it captures women's perceptions of their own status in the labor market and thus potentially reflects not only their current position in the labor market but also the efforts they make to keep their jobs or move up the career ladder. Second, employment status is not available as a measure in the 1991 wave of STULA, and the measure introduced in 1996 has changed twice in subsequent surveys. Thus, relying on employment status to capture women's labor market participation type will reduce the time period for the analysis and introduce unnecessary inconsistencies.[5]

I control for logged household income, spouse's education, own age, presence of own child under six in the household, number of adults co-residing in the household, and whether the diary day analyzed is a weekend or a weekday. I construct the logged household income variable using midpoints from a categorical measure with one-million-yen bands available in the original surveys, correcting the resulting measure for inflation (using 2006 as the base year), and then logging it. Ideally, I would add personal income as one of the controls in the analysis, but this information is not available in the data. I use the original categorical measure to control for age, which is recorded in 5-year bands.

5.3 | Analytic Strategy

I start by presenting means of our dependent variables separately for men and women and husbands' and wives' shares of overall time couples spend on domestic work in the six surveys at hand. I then estimate seemingly unrelated regression (SUR) models on paid work, housework, and childcare time (Zellner 1962). These models help me account for the fact that the times an individual spends on different types of work are jointly determined: Time spent on paid work, for example, reduces time the individual has available for housework, childcare, or anything else. SUR models take account of the correlated error due to unobserved predictors in the equations concerning paid work time, housework time, and childcare time of individuals. I use ordinary least squares (OLS) regressions to analyze the share of time wives spend on paid work, housework, and childcare, as these shares are not jointly determined in the same way that times spent on various types of work are. I carry out the analysis separately for men and women. The models run on the pooled sample of all the respondents in 1991, 1996, 2001, 2006, 2011, and 2016. To test the differences in paid work and housework contributions over the years by individuals' levels of educational attainment, I interact survey year dummies with the education measure. To analyze whether the time women spend on paid and unpaid work as well as how paid and unpaid work are shared within families varies with the wives' labor market participation, I rerun my models on three subgroups of couples: (1) couples where husbands report that they are workers and wives also self-describe as workers; (2) couples where husbands identify as workers, while wives report that they take care of the household but also engage in paid work; and (3) couples where husbands identify as workers and wives do not work.

6 | Results

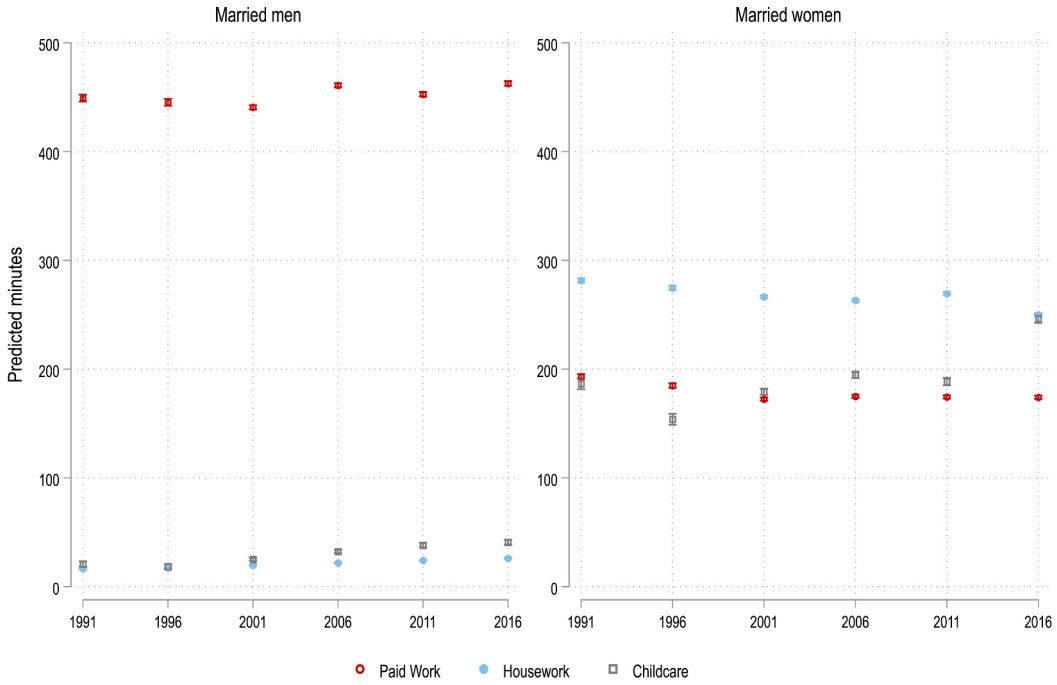
Between 1991 and 2016, there has been only a limited shift in the ways married Japanese men and women allocate their time to paid work, housework, and childcare. Married women reduced their housework contributions from an average of 283 min a day in 1991 to 246 min in 2016. Married men compensated for this reduction a little bit, with their average daily contributions to housework increasing from 15 min in 1991 to 28 min in 2016. The magnitude of this change is small and wives' share of housework decreased only modestly, 97% in 1991 to 93% in 2016. In terms of paid work, wives worked 195 min on an average day in 1991, which went down to 190 min in 2016. Husbands worked 452 min in 1991 and 461 min in 2016 on an average day. Wives' share of the total time couples spend on paid work has barely changed between 1991 and 2016, staying at around 25%. Both men and women with children under the age of 6 increased childcare time over the past 3 decades. For men, the average childcare time increased from 19 to 43 min, and for women, from 195 to 227 min. For detailed mean values and shares across the years, see Supporting Information S1: Tables A1 and A2.

The descriptive findings are replicated in my regression analysis (Figure 1). Contrary to H1, I observe no gender convergence in paid work time. There is evidence of some convergence in men's and women's housework time in line with H1, but the trend is very weak, and even in 2016, wives still take care of almost all the housework. As childcare trends change in line with H2 over time, both men and women spend a bit more time on childcare. Like with paid work and housework, changes in childcare times have been glacial.

The stability of paid work, housework, and childcare trends in Japan over 3 decades is striking, given that over time, women substantially increased their human capital, labor market participation, and access to family policies known to promote women's paid work participation. While in line with existing empirical research, this finding merits further investigation.

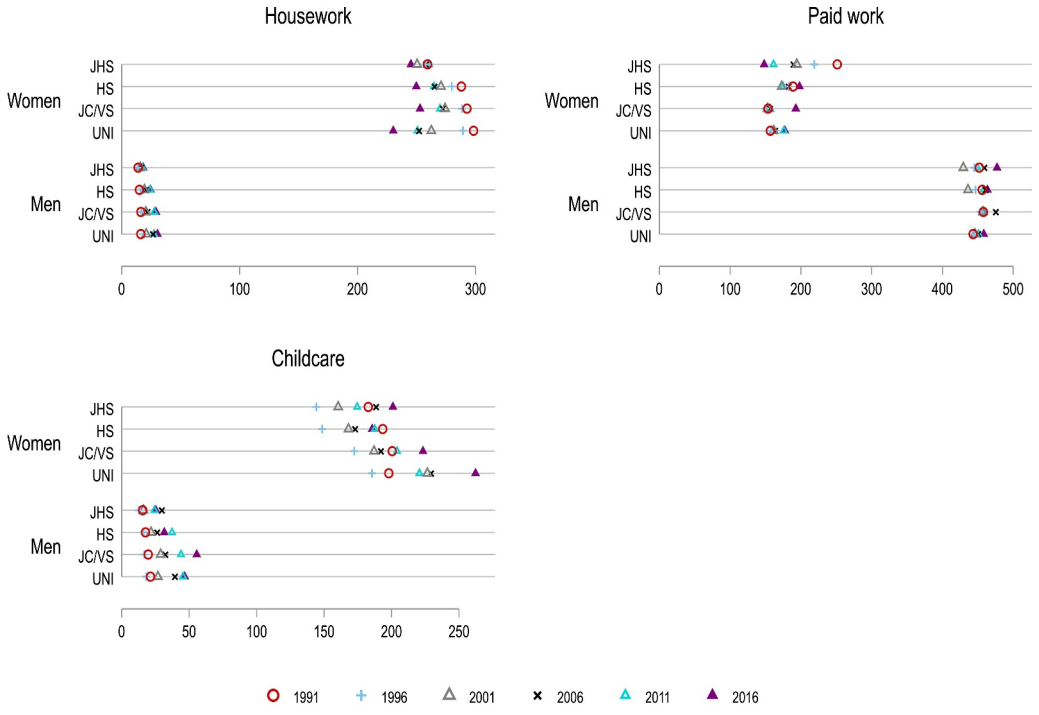
Breaking down results by the level of education, we observe differences between educational groups, but there is no clear evidence of gender convergence in paid work for any educational group contrary to the expectations in H3a. Women with the lowest compulsory level of education witness a substantial drop in paid work between 1991 and 2016, whereas women with tertiary education barely increase their paid work time (Figure 2). In contrast, housework trends are in line with H3a. Women's fall and men's rise in housework time are more pronounced at higher education levels of the respondents. I observe an especially large fall in housework time, from 299 to 230 min on an average day, among university-educated women (see Supporting Information S1: Table A5 for average minutes by gender and activity for each survey year).

Similarly, changes in the relative shares of wives' contributions to housework are in line with H3a, as more educated wives reduce their share in housework more. The same is not true for paid work (Figure 3). For women with more than the compulsory level of education, higher educational attainment is



Note: Childcare times are estimated only for men and women with children under the age of 6.
Paid work and housework times are estimated for the whole sample.
Coefficients and standard errors for the models behind this figure are reported in Tables A3 and A4 in the Appendix

FIGURE 1 | Predicted time spent on paid work, housework, and childcare by gender. [Colour figure can be viewed at wileyonlinelibrary.com]



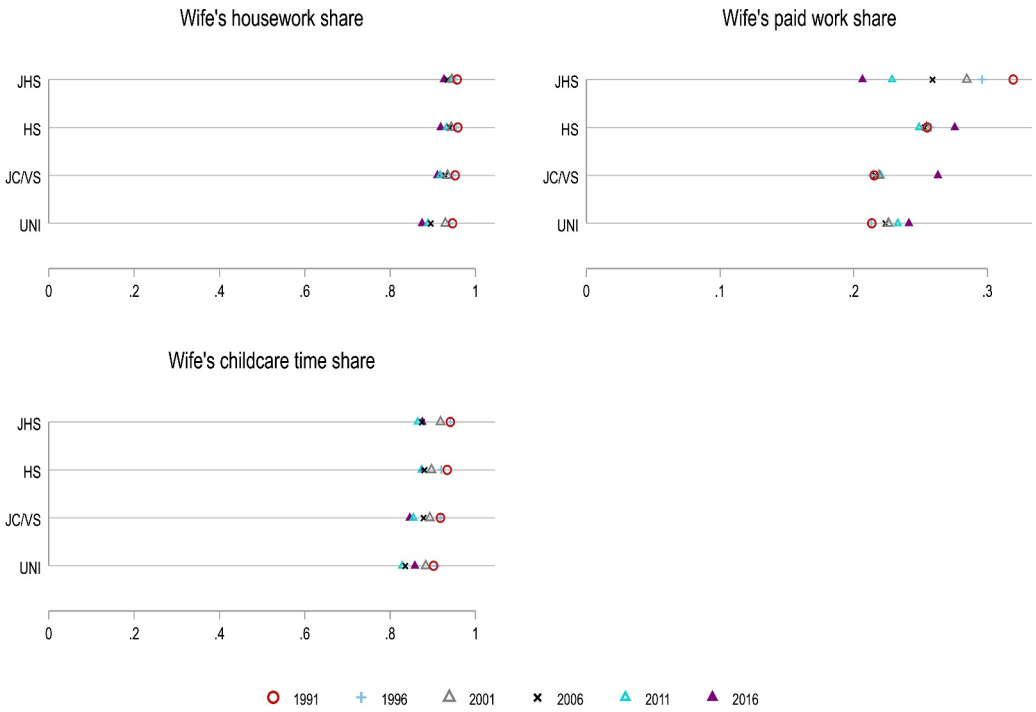
Note: The numbers behind this figure are reported in Table A5 in the Appendix

FIGURE 2 | Average minutes per day spent on paid work, housework, and childcare by gender. [Colour figure can be viewed at wileyonlinelibrary.com]

associated with increases in the share of paid work between 1991 and 2016, but above compulsory educational level, higher education is not associated with a greater increase in wife's paid work share. As anticipated in H2, changes in the time married parents invest in childcare do not fit the economic and gender equality explanations well, as there is virtually no association in wife's childcare share and maternal educational attainment (Figure 3). Instead, childcare investment increases generally for everyone, especially—as predicted by H5—more educated mothers and fathers (Figure 2).

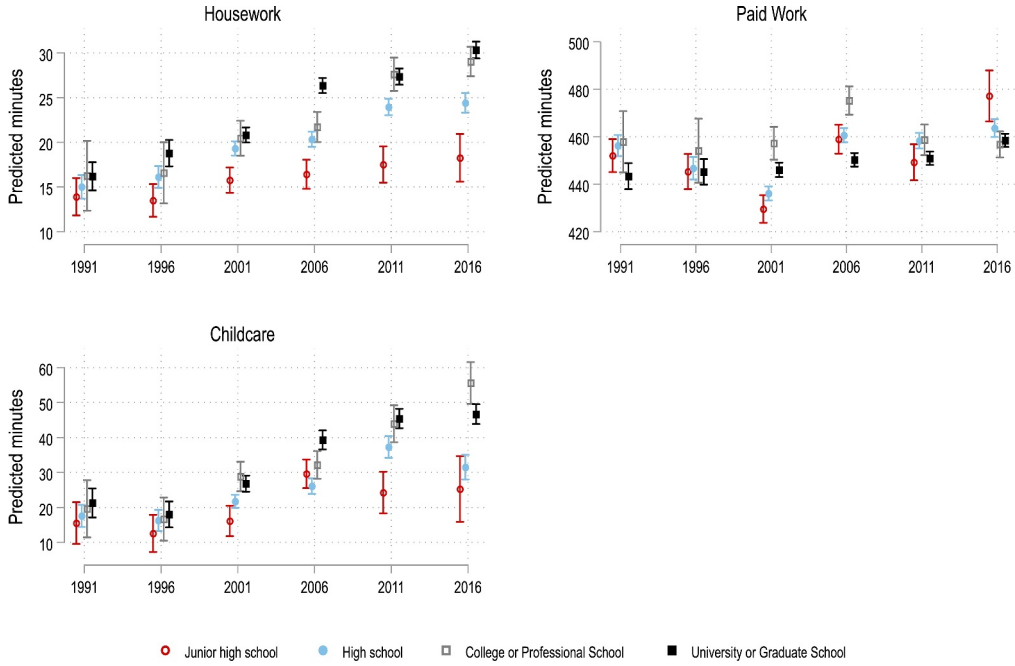
I next turn to SUR and OLS model results as represented in the margin estimates in Figures 4, 5, and 7. In the margin plots, variables other than education and survey year are set at their mean value (for full models, see Supporting Information S1:). The whiskers around the predicted minutes on these graphs display the confidence intervals around these predictions. The models broadly confirm the above descriptive results. All men spend limited time on housework and childcare throughout the survey years (Figure 4). As anticipated by H3a, men with tertiary education are at the forefront of the shift to greater participation in housework. In the 1990s, there was no difference in the predicted time men at various levels of educational attainment spent on housework, but this changed by 1996 as more educated men started contributing more. This difference between educational groups, and especially between men with and without tertiary education, has increased in every subsequent survey, which offers support to H4a. The fact that human capital is associated with men's greater involvement in housework and childcare is consistent with the understanding that education is a proxy for a more egalitarian outlook (conforming with the gender ideology theory) rather than a resource men can rely on to get themselves out of domestic work responsibilities (as per the economic resources theory). There is no clear education-related pattern in men's paid work time over the same period. Contrary to the expectations in H1 and H3a, there is no observable reduction in men's paid work time between 1991 and 2016. In line with H2, over time fathers of children under the age of six are spending more time on childcare and, as anticipated by H5, fathers with tertiary education are at the forefront of this change.

Japanese women have experienced larger shifts in their work patterns over time compared to men. All women apart from those with junior high school education (a progressively smaller group) spend increasingly less time on housework over time, though their total housework time is still very high and remains around four hours on an average day in 2016 for all educational groups (Figure 5). I observe a reversal in the association between education and married women's housework and paid work times between 1991 and 2016. In 1991, 1996, and 2001, women with only junior high school education spent considerably less time on housework and more time on paid work than other women. This pattern became less pronounced over time with all but junior high school educated women reducing time spent on housework. In 1991 and 1996, I document no difference in predicted housework time for married women with high school, junior college, or university education. From 2001 on, women with university degrees are estimated to spend less time on housework than women with high school or junior college education. In 2016, university-educated wives are predicted to do the least amount of housework compared to all other women, taking the lead in a shift toward less housework time, as expected by H4a.



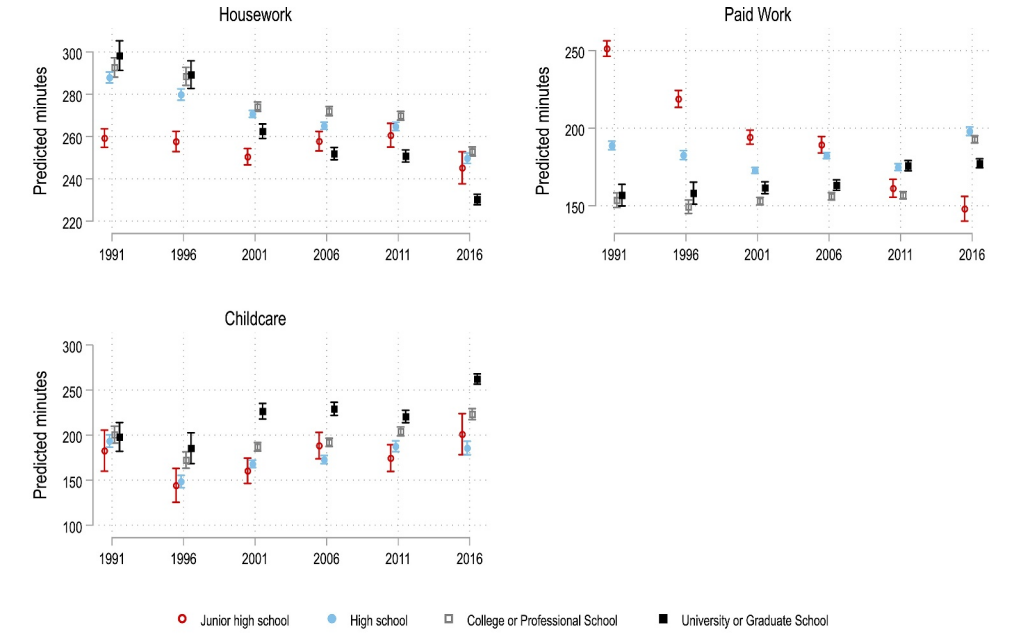
Note: The numbers behind this figure are reported in Table A6 in the Appendix

FIGURE 3 | Wife's average share of couple's time spent on housework and paid work by wife's education. [Colour figure can be viewed at wileyonlinelibrary.com]



Note: Childcare time is calculated on the sample of families with at least 1 child under the age of 6.
Paid work and housework times are calculated using the full analytical sample.
Coefficients and standard errors for the models behind this figure are reported in Table A7 in the Appendix.

FIGURE 4 | Predicted time men spend on paid work, housework, and childcare on an average day by the level of education and survey year. [Colour figure can be viewed at wileyonlinelibrary.com]



Note: Childcare time is calculated on the sample of families with at least 1 child under the age of 6.
Paid work and housework times are calculated using the full analytical sample.
Coefficients and standard errors for the models behind this figure are reported in Table A8 in the Appendix.

FIGURE 5 | Predicted time women spend on paid work, housework, and childcare on an average day by the level of education and survey year. [Colour figure can be viewed at wileyonlinelibrary.com]

While in 1991 compulsory (junior high school) education was associated with the longest paid work time for married women, by 2016 this education level was associated with the shortest paid work time. I observe limited change in paid work time for married women in other educational groups between 1991 and 2006. In 2011 and 2016, there is a small increase in predicted paid work time for women with more than just a compulsory level of education, but university-educated women retain the second lowest paid work time. While trends in housework time offer partial support for H3a and H4a, the same is not true for

paid work time. When it comes to childcare, I find that higher educated women, and especially women with university education, increased time they spend on childcare between 1991 and 2016, confirming H5.

Figure 6 summarizes the differences between the predicted time women spend on childcare, housework, and paid work in each survey year depending on whether they saw themselves as workers (labeled FT), taking care of domestic work as well as working for pay (labeled PT), or homemakers (labeled as no work). Each cell in the plot reflects the difference in minutes wives with different educational credentials are predicted to spend on childcare, housework, or paid work, compared to married women with a high school diploma. When the difference is not significant, the cell is grayed out. As anticipated by H5, higher educated women, especially women with university education, spend more time on childcare, and this positive association is independent of their labor market participation. The size of the difference in time spent on childcare by tertiary-, especially university-, educated women, may reflect their time availability. The difference in time nonworking university and junior-college educated women spent on childcare compared to their counterparts with only high school education is around twice as much as the same difference for working women throughout the 2000s.

Compared to childcare, there is more diversity in the associations between women's educational attainment and time they spent on paid work and housework depending on their labor market participation, as anticipated by H3b. Educational attainment has virtually no association with the time homemaker wives spend on housework. For women who define themselves as workers, university education is associated with less housework time in comparison to women with only high school diplomas. For women who say they take care of the household and also work for pay, this is not the case; moreover in the 1990s, university-educated women who do not see themselves primarily as workers spent more time on housework than their counterparts with high school diplomas. The association between paid work time and educational level also differs between women who say they are primary workers and those who do not. Throughout the survey years there are no pronounced educational patterns in paid work time between married women who define themselves as workers. For women who

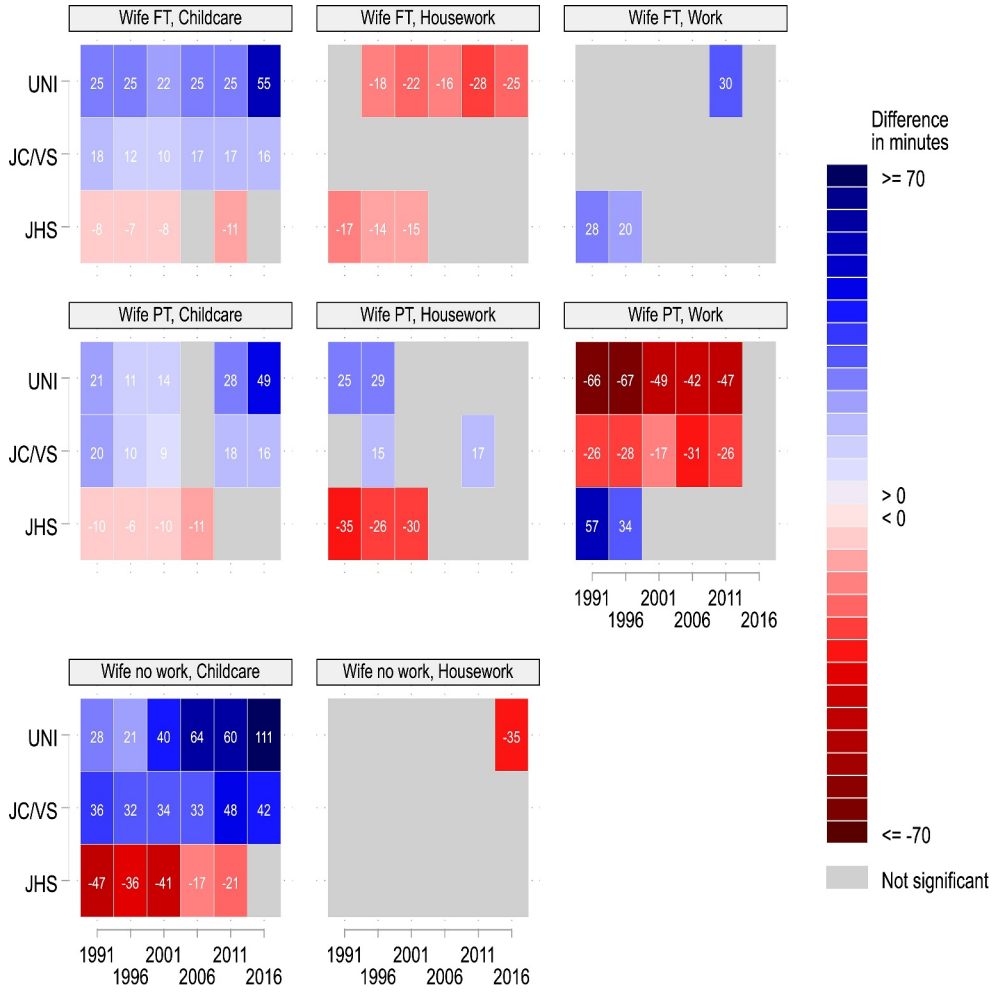


FIGURE 6 | Predicted childcare, housework, and paid work time of wives with high school education compared to wives with other levels of educational attainment by labor market participation and survey year. [Colour figure can be viewed at wileyonlinelibrary.com]

say they take care of the household and also work for pay, tertiary education is associated with less time spent on paid work, although this trend has weakened over time.[6] This contradicts H3b and potentially reflects the fact that these women work mostly because they need additional income. In close to half of Japanese couples, husband and wife have the same level of education (Uchikoshi and Raymo 2021). For men, higher education translates to higher earnings and so better educated women are more likely to be married to higher earning men than their less educated sisters. As a result, when women with tertiary education do not see themselves primarily as workers, they may choose to spend less time working compared to lower educated women who also do not see themselves primarily as workers, but whose income is a necessity for the family budget.

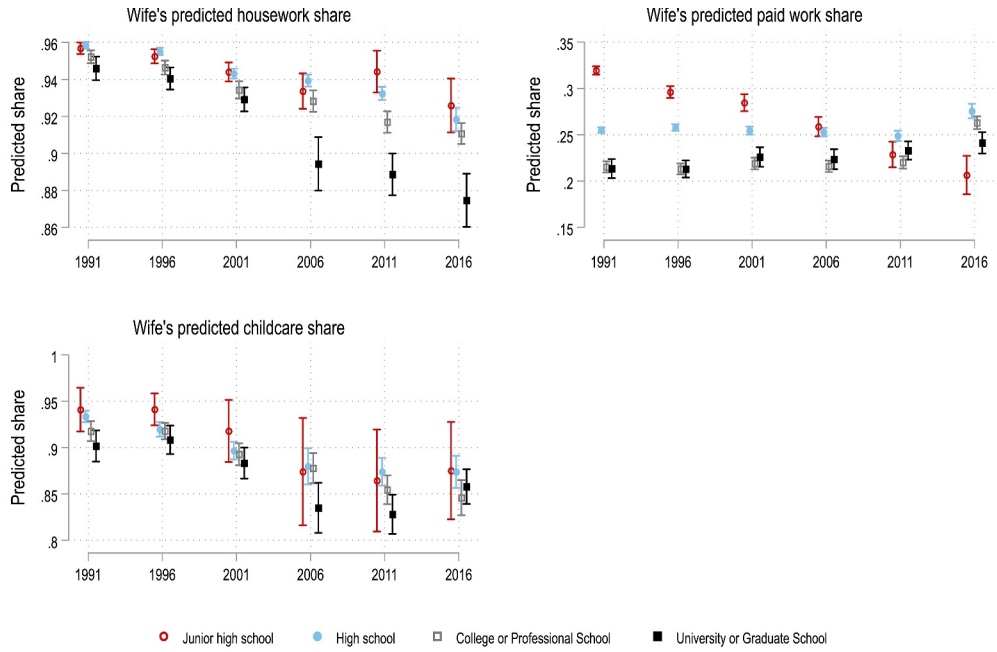
I now turn to regression analysis of the ways men and women share housework, childcare, and paid work. Different families may have different standards of household production, and husbands and wives may influence each other's working patterns. These could vary systematically with spouses' education. Looking at within-couple dynamics allows us direct insights into the presence or absence of convergence patterns in paid and unpaid work. In the following, I analyze not absolute time investment but how women's *relative shares* in total childcare, housework, and paid work time have changed, with specific attention paid to wives' education.

In the case of housework, wives' share has decreased over time but remains very high (Figure 7). Couples where wives have university education are at the forefront of the shift to greater gender equality in housework as anticipated by H3a. Wives in these couples were already responsible for a lower share of housework as early as 1996 compared to wives without tertiary education. The difference between them and wives without university education increases over time in line with H4a. That said, even in 2016, university-educated wives are still responsible for close to 90% of all housework on an average day.

I find no evidence for educated women leading the gendered convergence in paid work time within couples, contrary to what is expected in H3a.

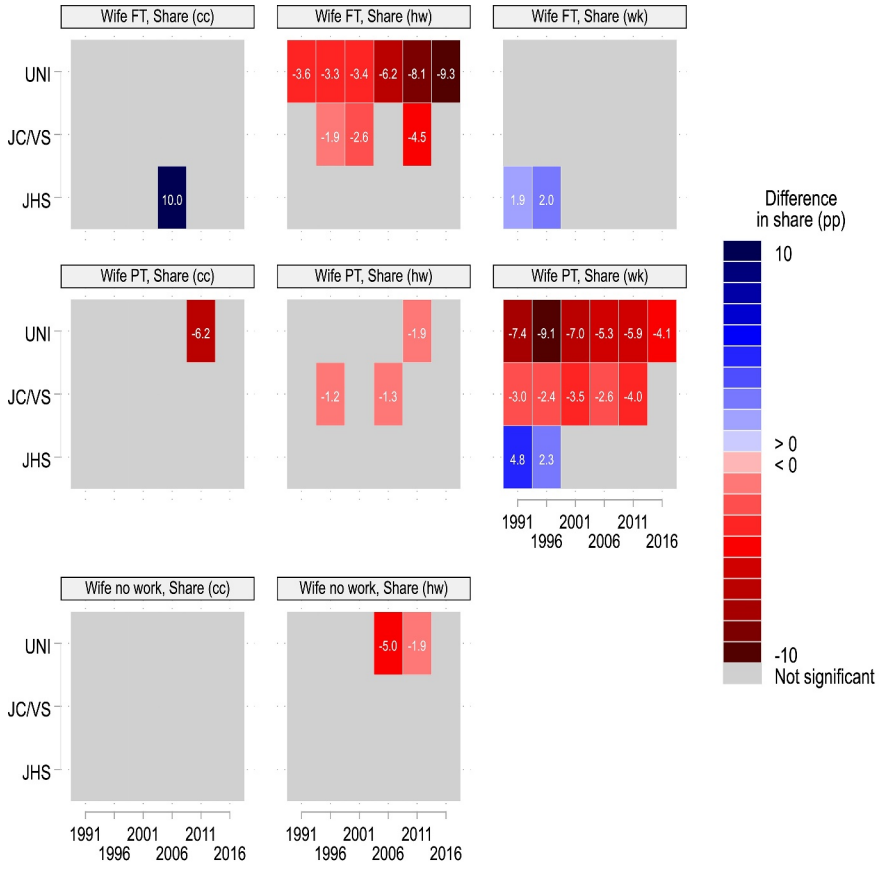
There is also no association between wives' educational attainment and convergence in childcare times between married men and women. This is in line with H2 and suggests that gender equality and economic explanations do not play a major role in these trends. Instead, as anticipated in H5 and observed in Figures 4 and 5, men and women with tertiary education both increase their time investments in parenting, and as a result, we do not see much change in the way childcare is shared within couples.

The patterns of association between educational attainment and wives' share of paid and unpaid work vary by her labor market participation (Figure 8). Wives with tertiary education, and especially university-educated wives, spend an increasingly lower share of their time on housework compared to wives with high school education, but only in couples where wives say they are primary workers. This is consistent with Hypotheses 3b—education drives egalitarianism—but only in families where women were able to translate their education into earning power. When it comes to paid work participation, there is no support for H3b in that for women for whom paid work is a side activity, higher education is negatively associated with paid work time, whereas for women who see themselves primarily as workers, education has no association. I find no strong association between education and sharing childcare for wives independently of their labor market participation, which is consistent with H2.



Note: Childcare time is calculated on the sample of families with at least 1 child under the age of 6.
Paid work and housework times are calculated using the full analytical sample.
Coefficients and standard errors for the models behind this figure are reported in Table A12 in the Appendix.

FIGURE 7 | Predicted wives' share of paid work and housework by education and survey year. [Colour figure can be viewed at wileyonlinelibrary.com]



Note: Coefficients and standard errors for the models behind this figure are reported in Tables A13-A15 in the Appendix.

FIGURE 8 | Predicted share of childcare, housework, and paid work time of wives with a high school education compared to wives with other levels of educational attainment by labor market participation and survey year. [Colour figure can be viewed at wileyonlinelibrary.com]

7 | Discussion and Conclusion

This study uses six waves of the Japanese Survey of Time Use and Leisure Activities to (a) document general shifts in paid work, housework, and childcare times and how these have been shared in Japanese married couples between 1991 and 2016 and (b) consider the associations between educational attainment and paid work, housework, and childcare contributions to see if there is evidence that educated individuals may be starting to lead a wider behavioral shift.

Having analyzed married men's and women's contributions to different types of work, I find evidence of gender convergence in housework time use in married couples between 1991 and 2016. This convergence is especially pronounced for university-educated men and women. All other things being equal, university-educated men are predicted to spend 15 min more on housework in 2016 compared to 1991, whereas university-educated women are predicted to spend around an hour less on housework on a typical day in 2016 compared to 1991 (see Figures 4 and 5). While these shifts are not negligible, married women's housework load remains high, and married men's share of housework stays stubbornly low throughout the years. There is no evidence of gender convergence in childcare time or paid work time across educational categories. Highly educated Japanese married men and women spend increasingly more time on childcare, and I do not find a clear trend in paid work time participation.

Taken together, these trends indicate that the socioeconomic and policy changes that Japanese society experienced over the past several decades have not been sufficient to promote large changes in the gendered division of labor in paid and unpaid work. This is in line with Mun and Brinton (2015) finding that state-imposed policies promoting work–family balance are unlikely to have an expected effect on their own in societies, like Japan, where organizational context makes work–family balance difficult.

Overall, Japanese married women's domestic workload and men's paid workload remain high. Persistent gender inequality in Japan is at least to some extent a consequence of the constraints that heavy housework loads put on Japanese women's ability to succeed in the labor market, coupled with the constraints that heavy paid workloads put on men's ability to contribute to housework and childcare (Raymo et al. 2015). This remains the case even in families where wives see themselves primarily as workers and husbands and wives have university education. The dominant pattern of gendered specialization within families between 1990s and 2016 makes it harder to consider nontraditional

division of labor within married couples and likely contributes to persistently traditional gender norms as noted by Piotrowski et al. (2019).

The very slow pace of the observed gender convergence in housework time, the increasing childcare loads, and the stalled convergence in paid work time do not bode well for attaining gender equality in Japan or addressing Japan's demographic challenges. Recent research on fertility in high-income countries highlights that "the compatibility of family and career has become a key determinant of fertility in high-income economies" (Doepke et al. 2022). Women's better ability to balance work and family responsibilities has been linked to a host of further positive outcomes, including greater couple stability and both spouses' well-being (Carlson 2022; Ruppanner, Brandén, and Turunen 2017). Our findings, however, suggest that in Japan, working and having a family at the same time remains a very difficult balancing act for women. If the trends observed in this paper continue, this may mean persistently low fertility, lower marriage satisfaction, and continuous loss of the brightest female talent in the labor market.

This article has focused on paid work, housework, and childcare tasks measured using time use diaries. This choice has led to important limitations in the analysis. First, not all work, whether paid or unpaid, is counted or even recognized as such. To give an example, emotional and cognitive labors are notoriously hard to measure. Cognitive and emotional labor are also essential and are disproportionately carried out by women (Daminger 2019; Reich-Stiebert, Froehlich, and Voltmer 2023). Second, the broad measures used in the paper do not allow us to unpack the gendered patterns in the way tasks that make up housework or childcare are shared. Some of the consequences of these gendered patterns are reflected in time use. For example, women's housework time is longer also because they disproportionately take care of routine housework tasks. Other consequences, such as higher stress and lower quality free time that disproportionately affect women due to higher mental load (Craig and Brown 2017; Ruppanner et al. 2021), or women's tendency to be responsible for less enjoyable parts of domestic work (e.g., Offer 2014) are not visible in time use analysis. Future research needs to pay attention to these dimensions of the gendered division of labor in Japan.

I also did not engage with the many other activities that make up Japanese men's and women's daily lives and that may also be the source of inequalities. Further research should look at these other activities, such as rest and leisure. I also focused on married men and women only. Scholars should also look at unmarried Japanese men and women to analyze trends toward gender egalitarianism in those populations.

Finally, Japanese time use surveys only started collecting information on individual income from 2011, so it is impossible to analyze long-term trends using this measure. Future research should look at individual survey years using models controlling for both education and income to make it clearer to what extent education translates into resources individuals can use to further their goals when it comes to household division of labor.

Acknowledgments

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Conflicts of Interest

The author declares no conflicts of interest.

Data Availability Statement

This paper utilizes four waves from the Japanese Survey on Time Use and Leisure Activities. The survey details and questionnaires are available here: https://www.stat.go.jp/english/data/shakai/index.html. The data is owned and managed by the Statistics Bureau, Japan. To access the data, prospective users need to apply directly to Statistics Bureau, Japan.

Endnotes

[1] While many more Japanese men and women have an experience cohabiting, cohabitation did not emerge as an alternative to marriage. Cohabiting unions tend to be a short-lived state that progresses to marriage or separation. Few women have children outside marriage (Raymo 2022). Consequently, few surveys have an explicit question about cohabitation, and STULA is not one of them. Given the nature of cohabitation in Japan, I believe I am justified in focusing on married couples and ignoring cohabiting unions when analyzing the domestic division of labor. Japanese government time use data does not collect information on nonheterosexual individuals, so I look at heterosexual couples only.

[2] Note that in the 1991 survey, there is no reliable measure allowing us to estimate whether the respondent has a child under the age of six. Across all surveys, caring for children over the age of six is defined as housework, whereas caring for children under the age of six is defined as childcare. I used household-level evidence of spending time on childcare as a proxy for having a child under the age of six for the 1991 survey.

[3] STULA surveys do not allow me to differentiate between individuals with undergraduate and graduate university degrees until 2011; thus, I collapse the two categories together for comparability throughout the years.

[4] Employment status includes categories such as "full-time, regular worker", "irregular worker" (a very broad category which incorporates part-time workers, dispatched or contract workers, self-employed, etc.), and not working individuals.

[5] I replicated my analysis using employment status as the independent variable as a robustness check. The results are similar and are available in Supporting Information S1: Figures A1 and A2 in the Appendix.

[6] I did not make predictions about the ways men's paid and unpaid work participation may vary by their wives' labor market participation and so I do not include a heatmap summarizing this analysis into the paper. It is available upon request.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.