Do Better-Educated Couples Share Domestic Work More Equitably in Japan? It Depends on the Day of the Week

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ABSTRACT

This paper investigates the gendered division of labor in different types of domestic work within married couples in contemporary Japan. We analyze routine housework such as cleaning and cooking, non-routine housework such as home-repairs, and care work by using the 2016 Survey of Time Use and Leisure Activities (Japan's national time diary survey).

Our core analysis is done using ordinary least squares (OLS) regressions on total domestic work time, routine housework time, non-routine housework time, and care time. We find that women's domestic work time dwarves men's, and there is some variation by day of the week and education. On weekdays domestic work is almost exclusively the domain of women. On weekends we find evidence of compensatory behaviors for both men and women.

Men, especially those with university education, catch up on all types of unpaid work while women, especially those with tertiary education, catch up on unpaid work mostly by spending more time caring for children.

Looking at the family balance in sharing domestic labor we find that men increase their time on unpaid work on weekends proportionately more than women do. Consequently, within couples, wives' share of all types of unpaid work is around 10% smaller on weekends compared to weekdays. In couples where wives have tertiary education, there is an additional reduction by several percentage points in their weekend share of domestic work time compared to weekdays.

Our findings suggest that Japanese men's long work hours contribute to gender inequality in domestic work participation. We also find that university education is associated with more equal sharing of domestic workload, indicating that socialization may play a role in bringing about greater egalitarianism in the domestic sphere in the future.

Keywords: gender inequality, domestic division of labor, weekday-weekend time use patterns

RÉSUMÉ

Cet article étudie la répartition entre les sexes des différents types de tâches domestiques au sein des couples mariés dans la société japonaise contemporaine. Nous analysons les tâches ménagères routinières telles que le ménage et la cuisine, les tâches non-routinières comme les réparations ou le bricolage, ainsi que les activités de garde, en utilisant l'étude de 2016 sur l'utilisation du temps et les activités de loisir (Enquête nationale Japonais sur l'emploi du temps « 2016 Survey of Time Use and Leisure Activities »).

Notre analyze centrale est réalisée en utilisant des régressions des moindres carrés ordinaires (MCO) sur la totalité du temps consacré aux tâches domestiques, et le temps dédié aux tâches ménagères routinières, aux tâches non-routinières ainsi qu'aux activités de garde. Nous constatons que le temps consacré aux tâches domestiques par les femmes est largement supérieur à celui consacré par les hommes, avec des écarts en fonction du jour de la semaine ou niveau d'éducation. En semaine, les tâches domestiques sont presque exclusivement du domaine des femmes. Sur les fins de semaine, nos analyses montrent des comportements compensatoires à la fois chez les hommes et chez les femmes. Les hommes, en particulier ceux avec un niveau universitaire, se rattrapent sur tous les types de travaux non rémunérés, tandis que les femmes, particulièrement celles ayant suivi des études supérieures, se rattrapent principalement sur les tâches domestiques en consacrant plus de temps à s'occuper des enfants.

En examinant l'équilibre familial dans le partage des tâches domestiques, nous constatons que les hommes augmentent le temps consacré à ces travaux non rémunérés les fins de semaine dans une proportion plus importante que les femmes. En conséquence, au sein des couples, la part des travaux non rémunérés réalisés par les femmes est environ 10% inférieure les fins de semaine par rapport aux autres jours de la semaine. Dans les couples où les femmes ont suivi des études supérieures, nous constatons une réduction supplémentaire de plusieurs points de pourcentage de leur part dans les tâches domestiques les fins de semaine par rapport aux autres jours de la semaine.

Nos analyses suggèrent que la durée importante du temps de travail chez les hommes japonais contribue aux inégalités hommes-femmes dans la participation aux tâches domestiques. Nous notons également qu'un niveau universitaire est associé à un partage plus

égalitaire des tâches domestiques, indiquant que la socialisation pourrait jouer un rôle en apportant plus d'égalité dans la sphère domestique dans le futur.

Mots clés: inégalité entre les sexes, division du travail domestique, tendances d'utilisation du temps en semaine-fin de semaine

INTRODUCTION

This paper investigates the gender division of labor in different types of domestic work in Japan: routine housework such as cleaning and cooking, non-routine housework such as home-repairs, and care work. To do this we use the 2016 Survey of Time Use and Leisure Activities (Japanese national time diary survey). We explore gender and educational differences in key daily activities in two temporal contexts: weekdays and weekends. Prior work has shown that gender division of labor looks different during weekends when there are fewer demands from paid work on people's time so it makes sense to analyze unpaid work time the weekday-weekend differences into account (Kolpashnikova and Kan, 2020).

Women continue to shoulder the larger share of housework and care work in East Asian, European, and Anglophone countries (e.g. Bianchi, Milkie, Sayer, and Robinson, 2000; Hook, 2010; Kan, 2008a; Kan and Gershuny, 2009, 2010; Kan and He, 2018; Kan and Hertog, 2017; Oshio, Nozaki, and Kobayashi, 2013; Pimentel, 2006; Sullivan, 2000; Zhang, Hannum, and Wang, 2008). The division of domestic labor in East Asia is particularly unequal (Fuwa and Cohen, 2007; Kan and Hertog, 2017; Shirahase, 2014, ch.5). On the individual level, gender inequality at home is linked to lower levels of well-being for both adults and children. Unequal

sharing of domestic work has been linked to unhappy and potentially more fragile marital unions in the 1970ies and 80ies United States (Hochschild and Machung, 2012), and more recently in Sweden (Ruppanner, Branden, and Turunen, 2018) and Denmark (Thielemans, Fallesen, and Mortelmans, 2020). Children are systematically shown to benefit when both parents are involved in their upbringing (Keizer, van Lissa, Tiemeier, and Lucassen, 2019; Teubert and Pinquart, 2010). On a societal level unequal division of labor between spouses in the domestic sphere has been associated with persistent low fertility (Anderson and Kohler, 2015; Esping-Andersen, 2009; McDonald, 2000).

Higher educated women are known to spend less time on domestic work while higher educated men spend more time on domestic tasks (Coltrane, 2000), but the evidence largely comes from research that looks at housework as a whole or focuses on routine housework. Tertiary education is also linked with longer time spent on childcare by mothers and fathers (England and Srivastava, 2013; Guryan, Hurst, and Kearney, 2008). Sullivan, Billari, and Altintas (2014) find that differences in the amount of time fathers with and without college education invest in routine housework and childcare have become particularly large in recent years in the low fertility European countries (Spain, Italy, Germany, and Slovenia) compared to the rest of Europe, and interpret this as suggestive evidence for education being a vehicle driving the diffusion of more gender-equal norms in countries with conservative gender attitudes.

Gender inequality in Japan (among other East Asian countries) is particularly intractable, while at the same time it is a country with one of the best-educated populations in the world. Thus, the association between education and division of labor at home is of particular interest there. We employ high-quality time diary data to investigate the role

education plays when it comes to the division of labor examining different types of domestic work on weekends and weekdays in contemporary Japan.

In what follows, we first discuss types of domestic work and the documented effects of education on the domestic division of labor across the world. We then describe the societal context within which domestic division of labor takes place in Japan. Next, we present our results on Japanese data and discuss how these compare to patterns documented elsewhere.

TYPES OF DOMESTIC WORK

Domestic work is far from homogeneous. Past research has categorized house chores as feminine and masculine (Berk, 1985; Gager, Cooney, and Call, 1999; Kan and He, 2018; Shelton, 1990; Shelton and John, 1996; South and Spitze, 1994) according to gender stereotypes on domestic work. For instance, cooking and cleaning were usually classified as feminine (Twiggs, McQuillan, and Ferree, 1999), and vehicle maintenance and home repairs were usually considered to be masculine (Coltrane, 2000).

More recent research has classified housework based on the flexibility and frequency of the tasks, i.e., whether the tasks are routine or non-routine (Altintas and Sullivan, 2017; Kan, 2008a; Kan, Sullivan, and Gershuny, 2011). Cooking and cleaning, which are usually undertaken daily, are referred to as routine housework. Gardening and home maintenance are considered to be non-routine housework as they need not be performed as often and can be flexibly arranged over the week. Grocery shopping is considered to be routine as well as "gender-neutral" (Baxter, 2002; Craig, Powell, and Brown, 2015; Kan and He, 2018).

Care is another important category of domestic work. Several early studies classified care and parenting into housework (e.g. Ferree, 1990; Hochschild and Machung, 2012), but care behaviors depend on more factors than housework. Parents, for example, are influenced

by the ideals of childhood and parenthood and may see childcare as an investment in their children's future. Hence care requires a set of analyses that are distinct, but interrelated, with analysis of housework (Davis and Greenstein, 2013; Ishii-Kuntz and Coltrane, 1992).

Several researchers consider housework and care work as separate concepts and examine either housework (e.g. Lee and Waite Linda, 2005; Sayer, 2005; Shelton, 1990) or care work (Gimenez-Nadal and Molina, 2013). In this project, we take the view that housework and care work are distinct, but related concepts and will analyze them in separate models. We will use the term *domestic work* to refer to the sum of time spent on routine and non-routine housework, as well as care.

Gender plays a major role in the allocation of time one spends on domestic work. Research-based on time diary data has shown that women spend considerably more time on domestic work than men across the globe although men's contributions have been increasing over time (Altintas and Sullivan, 2017; Kan et al., 2011). The observed changes differ depending on the type of domestic work. In European and Anglophone countries the reduction of inequality in housework participation has been driven by non-routine housework (Kan et al., 2011). Both men and women spend more time with their children than before, but men's contribution has increased proportionately more than women's resulting in a smaller gender gap in childcare (Gauthier, Smeeding, and Furstenberg, 2004). This uneven progress indicates inherent differences in the ways men and women choose to allocate time by type of domestic work.

EDUCATION AND THE DOMESTIC DIVISION OF LABOR

Higher education is associated with increased investment in childcare for both men and women across a large number of countries with different cultural and institutional contexts,

including the United States (England and Srivastava, 2013; Guryan, Hurst, and Kearney, 2008), South Korea (Cha and Song, 2017), United Kingdom, Canada, Germany, Italy, and Norway (Sayer, Gauthier, and Furstenberg, 2004) and others. This behavior is consistent with an intensive parenting ideology that promotes heavy investment in childrearing among educated parents (Lareau, 2003).

In European and Anglophone countries, when it comes to housework, educational attainment appears to affect men's and women's contributions in opposite directions. Higher educated women do less housework, while higher-educated men do more (Coltrane, 2000), though evidence varies somewhat between societies and institutional contexts. Higher education is associated with lower routine housework contributions for Finnish women, but no increase in housework contributions is documented for men (Mietinen, 2001). In the UK and the US, higher-educated men used to spend more time on housework (including both routine and non-routine tasks) than men with lower levels of education in the 1970ies, but the gap disappeared in the early 2000s (Sullivan, 2010). In Germany and Israel, wives' higher education is associated with a more equal division of housework labor in couples (Lewin-Epstein, Stier, and Braun, 2006, p. 1158). Sullivan, Billari, and Altinatas (2014) found that fathers with a college education in European countries contribute more time to routine housework and childcare than their less educated counterparts.

These general patterns of childcare and housework participation, however, likely to vary between weekdays and weekends.

HEBDOMADAL CONSTRAINT

Variation in time spent on housework and care work by day of the week is well documented, particularly for employed men and women (Gupta and Sayer, 2015; Hook, 2017;

Kolpashnikova and Kan, 2020). On weekdays domestic work competes with paid work, while weekends are associated with greater flexibility. Kolpashnikova and Kan (2020) call this *hebdomadal constraint*.

Kolpashnikova and Kan (2020) look into hebdomadal housework patterns in Canada and find evidence of compensatory behaviors when it comes to routine housework, but not other types of housework. According to Kolpashnikova and Kan (2020) in Canada, these patterns are most plausibly explained with time availability, though gender deviance neutralization cannot be completely ruled out. Several studies using data from other developed countries find support for mechanisms beyond time availability. In the US women's domestic work patterns are influenced by their education, income, and employment hours on weekdays, but not on weekends when all US women "do gender" (Hook 2017). Evidence from France indicates that men and women 'do gender' on weekends by doing less and more housework respectively (Pailhé, Solaz, and Souletie, 2019). Yeung, Sandberg, Davis-Kean, and Hofferth (2001) find that US men increase time spent on childcare, but not routine housework on weekends, and their weekend childcare time is not associated with their income and employment hours.

The majority of the studies cited above suggest that gender norms play a greater role in determining weekend patterns of unpaid work compared to weekday patterns. Norms, especially those associated with parenting and gender equality, vary systematically with education (e.g. Du, Xiao, and Zhao, 2020; Sani & Treas, 2016). Consequently, we would expect that hebdomadal compensatory patterns vary systematically across educational groups, but no existing studies have looked at the associations between educational attainment and hebdomadal unpaid work patterns. It is also possible that some types of unpaid work are more amenable to compensatory behaviors than others and so observed compensatory patterns will

also vary by type of unpaid work. We will put these intuitions to the test using Japanese time use data, but first, we need to say a few words about the Japanese context.

UNPAID WORK IN JAPAN

Japan is characterized by high levels of educational attainment for both men and women. More women than men go on to tertiary education after high school. More than half of all Japanese women today go to universities. The gender gap in enrolment to 4-year universities was around 6% in 2018 favoring men and has been shrinking for decades (Gender Equality Bureau, 2019, p.18). At the same time, gender inequality in the labor market in contemporary Japan remains persistent. Women continue to form the bulk of precarious labor, there are few female senior managers, virtually no women sit on company boards, there is a large gender gap in wages, and maternal employment rates remain low (e.g. Estévez-Abe, 2013; Nemoto, 2016; Yu, 2009).

Some policies aimed to encourage equal employment opportunities for both men and women and to help parents (mostly mothers) to combine work and family have been introduced from 1990ies, but the effectiveness of these policies has been limited (e.g. Brinton and Mun, 2016). In 2003 Japan was ranked the last among 33 countries analyzed by Fuwa and Cohen (2007) in terms of public childcare availability and wives there shouldered the largest proportion of housework. In 2015 The Economist rated Japan as the third-worst economy to be a working mother in the OECD (The Economist Data Team, 2016), and in 2017 Japan was ranked 114th out of 144 countries in the Global Gender Gap Report, a testament to its low levels of gender equality. It is still common for women to quit full-time jobs upon childbearing and to return to the labor market only several years later, often into part-time, dead-end jobs (Shirahase, 2014). The proportion of full-time employed, married Japanese women has

stagnated for the past 30 years (Abe, 2011). The income gap between spouses, even within couples where both spouses work, is large. In 2000 the majority of Japanese wives in double-income couples earned 30% or less of what their husbands did. The large income gap between husbands and wives was in stark contrast with seven other developed countries Shirahase (2014, p. 60) analyzed (U.S., U.K., France, Germany, Italy, Sweden, Taiwan) in all of which majority of working wives earned at least 70% or more of their husbands' income. As a result of this inequality, married women with children continue to rely on their husbands' earnings as their careers remain precarious and marriage and childbearing tend to be followed by heavy domestic responsibilities.

Women's low income also means that Japanese men are under pressure to be the main breadwinners in their families. They work exceptionally long hours (OECD, 2021, employment section) which means, among other things, that they have physically little time for unpaid labor on weekdays. Any variation in men's domestic work contributions in Japan is likely to only be observable on weekends.

Wives continue to do most of the housework and care work in married couples. In 2016 married women spent nine times as long as married men did on housework and related activities weekly (Statistics Bureau of Japan, 2016, p. 4). The norms of intensive, maternal investment in children remain strong and in 2015 around 70% of unmarried men and women and 63% of married women believed that mothers should quit work while their children are young and focus on childcare (NIPSSR, 2015, p.85, 87). Notably, while Japanese husbands perform a more significant share of housework on weekends, their contribution is still dwarfed by that of their wives' on both weekdays and weekends (Kobayashi, Kobayashi, Okumura, and Usui, 2016).

In sum, Japan is characterized by extreme inequality between men and women in the labor market and at home despite the comparatively more equal access to education (Schwab et al., 2017).

In the next section, we will describe our data and methods. We will then continue with a detailed account of the patterns of contribution to different types of domestic work by Japanese men and women, describing weekdays and weekends separately. This description will be followed by the analysis of these patterns to establish how educational attainment influences the domestic division of labor with attention to the difference between weekdays and weekends.

DATA AND METHODS

Data

We analyze data from the 9th wave of the Survey on Time Use and Leisure Activities (STULA) that was collected in 2016. STULA is a time diary study of nationally representative cross-sectional samples conducted every five years from 1976 by the Statistical Bureau of Japan. The sample is selected through a two-stage stratified sampling method, where the primary sampling unit is the enumeration district (ED) of the Population Census, and the secondary sampling unit is the household. In 2016 all persons aged 10 and over in the households were asked to respond to the survey. The survey contains responses from 175,000 individuals residing in 55,484 households. Individuals are asked to complete time diaries on 2 consecutive days. The survey was carried out over 9 days in mid-October 2016 and the weekends are oversampled. In our analyses, we use weights to ensure that the sample is representative of the population and across days of the week.

Our analytic sample includes married, working age (20 to 60 years old) men and women, who live together. We dropped everyone currently in education (0.1% of the respondents in our sample[1]), as their time use patterns are likely to be very different from those currently in the labor market.

The final sample consists of 101,745 diary records from 51,612 married individuals belonging to 27,012 households (53,777 diaries were filled in by women and 47,968 diaries were filled in by men). In nearly all cases, the respondents completed time diaries on two consecutive days (less than 0.5% of the respondents returned a valid diary for only one day). The diaries report how the individuals were spending their time in 15-minute intervals. Survey data on time use is complemented with standard demographic and socio-economic indicators. Ninety-five percent of the respondents were administered questionnaire A, and five percent of the respondents were administered a more detailed questionnaire B. The demographic and socio-economic characteristics of interest for this paper were measured in the same way in both questionnaires. Respondents who received questionnaire A (50,206 respondents) were asked to categorize their activities into 20 pre-coded categories. Respondents who were administered questionnaire B (2,448 respondents) wrote down what they were doing in their own words. These were later coded by the Statistical Bureau staff into 84 categories. The sample contained roughly the same number of men and women.

Our analysis focused on the ways domestic work was shared within married couples depending on their completed level of education, with particular attention to different types of domestic work and making a distinction between weekdays and weekends.

[1] Japan is characterized by strong norms prescribing the sequence of life-course events, and few people marry before completing education (see Brinton 2011, ch1 for the discussion of this phenomenon).

Dependent variables

We merge the data from questionnaire A and questionnaire B, as both datasets offer advantages for the analysis. Questionnaire B responses enable us to distinguish between routine and non-routine housework. Questionnaire A was administered to a large sample enabling us to describe patterns of domestic work in a variety of couples, including the rarer matches, such as couples where husbands are not employed.

We created five continuous dependent variables to measure different types of domestic work using recorded primary activities. Following previous research on domestic work time in Western and East Asian countries (e.g. Kan and He, 2018; Kan, Sullivan and Gershuny, 2011; Sullivan, Gershuny and Robinson, 2018)6, we classify domestic work into three main types: routine housework, non-routine housework, and care. *Routine housework* is the sum of time spent on "laundry", "cleaning", "meal preparation", and "baking" and "shopping" by questionnaire B respondents. *Non-routine housework* refers to time spent on "gardening", "clothes making", "house repairs", "car-related care", "small repairs", "housework-related travel", "using administrative services", "using commercial services", and "other housework" by questionnaire B respondents. *Housework* time is spent on "routine housework" and "non-routine housework" by questionnaire B respondents and time recorded as spent on "shopping" and "housework" by questionnaire A respondents. *Care* refers to time spent on "childcare", "care for an adult family member" by questionnaire A respondents. For questionnaire B respondents "Care" time is the sum of time spent on "care for an adult family member", "helping a family member", "medical care for a baby", "looking after a baby", "playing with a baby", "spending time with a child", "helping a child with studying", "accompanying child", "pet care", and "dog walking". In our sample time spent on various childcare activities dwarves

all the other care responsibilities. *Domestic work* is the sum of time spent on *housework* and *care* by all respondents. All the variables were calculated based on the reported primary activities. Dependent variables referring to the time spent on various domestic work responsibilities are the total daily minutes spent on a given activity.

In addition to analyzing the factors predicting the total daily minutes individuals spent on domestic labor, we also estimate models with the individual share of the total time a given couple spends on domestic work as dependent variables.

Independent variables

Our key independent variable is educational attainment, which is recorded into 3 categories: high school or below (reference group), college or professional education, university education or above.

Another key independent variable is whether the diary day is a weekend or a weekday (weekday=0; weekend=1). We also include interactions between educational attainment and the weekend dummy to test if the educational gradient in housework, if any, may vary between weekday and weekend.

Control variables

We estimate regressions separately for men and women. We control for relevant covariates as follows: age (measured continuously), income (a continuous variable constructed using mid-points from 1-million yen bands available in the original survey), own and spouse's work statuses (categorical variables with 3 levels: “working more than 35 hours on a typical week (full-time)”, “less than 35 hours on a typical week (part-time)” or “did not have a job”), a dummy for an urban household, number of coresident children (distinguished by the

following age groups: “under 6s”, “ 6 to 9-year-olds”, “10 to 14-year-olds, and “15 to 19-year-olds”), and the number of adults (over 20 years of age) in the household.

Table 1a. Mean (SD) of Continuous Variables Used in Regressions

	Women	Men
Age	44.05	44.51
	(9.09)	(8.77)
Household income	757.21	766.53
	(371.35)	(364.31)
Number of children aged less than 6	0.35	0.38
	(0.66)	(0.67)
Number of children aged 6-9	0.24	0.26
	(0.50)	(0.52)
Number of children aged 10-14	0.26	0.28
	(0.55)	(0.57)
Number of children aged 15-19	0.23	0.25
	(0.51)	(0.53)
Number of adults in the household	2.47	2.43
	(0.83)	(0.81)
Weighted N	54113	47548

Table 1b. Proportion of Women and Men in Demographic Groups Used in Regressions

	Women	Men
Weekdays	0.71	0.71
Weekends	0.29	0.29
Works over 35 hours per week	31.88	89.42
Works less than 35 hours a week	38.59	9.17
Not working	29.53	1.41
Spouse works over 35 hours per week	86.46	32.22
Spouse works less than 35 hours a week	10.06	38.52
Spouse is not working	3.49	29.26
Own education		
High School or less	38.97	40.17
College or Professional School	39.47	16.09
University	21.56	43.74
Spouse’s education		
High School or less	40.81	37.75
College or Professional School	15.41	39.44
University	43.78	22.81
Weighted N	54113	47548

Analytic strategy

We start by presenting weekday and weekend means of our dependent variables separately for husbands' and wives', as well as wife's shares of overall time couples spend on different types of domestic work. We then estimate ordinary least squares (OLS) regressions on the five measures of domestic work constructed separately for men and women. In our models, we take account of the repeated observations of individuals (as each respondent filled in two diaries) when we calculate the standard error of the estimates. As an analytical strategy, we considered Tobit, SUR, and OLS regressions and choose to use OLS regressions for the following reasons.

First, although our dependent variables have many zeroes, these are real zeros, rather than a variable being censored at zero. In this case, it has been demonstrated that using OLS regression models is preferable to Tobit models, as the latter models would result in unrealistic estimates of a time budget of over 24-hours if we include all daily activities in nested models (Foster and Kalenkoski, 2013; Stewart, 2013).

Second, we have considered using Seemingly Unrelated regressions (SUR) to estimate both husbands' and wives' domestic time simultaneously. Wives' and husbands' time use and other characteristics are not completely independent of each other. This can affect the variances in domestic work time, as the sample is less varied than the case of a randomly drawn sample based on individuals rather than households. A drawback of the SUR regression, however, is that it does not allow us to take account of the repeated observations of individuals (each individual completed two diary records) when calculating the standard error. For robustness checking, we carried out SUR analyses to take account of the correlated error of

the husbands' and the wives' equations of the respective time on domestic work. The results and conclusions have not been changed. The results are available upon request.

All the analysis of routine and non-routine housework relied on the data from the questionnaire B sample because we can distinguish between these two types of housework only for these respondents. For all the other dependent variables, we relied on the pooled sample of questionnaire A and questionnaire B respondents. To test the differences in weekend and weekday time contributions by individuals' levels of educational attainment we interacted weekend dummy with the years in education measure. OLS estimates allow for the interpretation of results in minutes per day.

RESULTS

Routine housework is the most time-consuming part of domestic labor performed by a couple, and it is mostly done by women. The majority of women's domestic work time is spent on routine housework and the amount of routine housework they do varied little between weekends and weekdays. Women spend around 4 hours on an average day doing cooking, cleaning, laundry, or shopping. They spend on average half an hour on non-routine housework on weekdays on weekends. They report spending over an hour on care on weekdays and weekends. Men spent less than half an hour on all types of domestic work on weekdays. Their contributions ranged between the average of 18 minutes spent on routine housework and 4 minutes spent on non-routine housework. On weekends they contributed the most time to routine housework (more than an hour), followed by care work (30 minutes) and then non-routine housework (18 minutes). Men's and women's contributions to domestic work converged somewhat on weekends as men increased their contributions proportionately much more than women did. Moreover, while men spend more time on all types of domestic work

on weekends compared to weekdays, women spent a bit less time on care and a couple of extra minutes on routine and non-routine housework on weekends, compared to weekdays.

Table 2. Means (SD) of time spent on different types of domestic work by gender and the average share of couple's time wives spend on different types of domestic work

Questionnaire A respondents

	Men		Women		Women's share	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Domestic work	26.34	91.22	332.14	339.50	0.92	0.81
	(77.37)	(141.66)	(210.23)	(209.34)		
Housework	15.50	60.98	256.06	266.54	0.93	0.83
	(48.73)	(99.93)	(163.37)	(168.88)		
Care	10.83	30.24	76.08	72.96	0.88	0.75
	(51.53)	(96.78)	(140.34)	(144.70)		
Weighted N	17632	30002	21385	35916	19355	32525

Questionnaire B respondents

	Men		Women		Women's share	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Routine housework	18.33	66.91	239.01	250.59	0.92	0.82
	(48.26)	(102.54)	(145.18)	(156.33)		
Non-routine housework	4.10	17.67	29.16	33.11	0.84	0.68
	(25.12)	(59.01)	(77.34)	(76.18)		
Weighted N	1045	1650	1193	1886	1176	1836

The sharing patterns of routine housework, non-routine housework, and care display large weekend and weekday differences as well as gendered patterns. Women did between 84% and 93% of all types of domestic work within couples on weekdays. On weekends their share of non-routine housework fell to 68%, their share of care was 75%, and their share of routine housework was 82%. Tellingly, while men pitched in more on weekends, their share of time spent on unpaid labor at home never reached anywhere close to 50% (see Table 2).

Overall, there is clear evidence that domestic work is highly gendered in Japan, and different types of domestic work are gendered to a different extent. All domestic work is women's domain on weekdays, but the picture is more nuanced on weekends. Routine housework remains exclusively feminine work throughout the week, while care and non-routine housework are somewhat closer to being gender-neutral on weekends.

Turning to the OLS multivariate results and beginning with men's contributions (Tables 3 and 4), it is clear that own level of education plays a vital role in mediating men's domestic work participation. Models without interactions (Table 3) suggest that tertiary education leads to a slight increase in men's contributions to domestic work as a whole largely driven by their increased contributions to housework. The associations with care, routine, and non-routine housework are positive, but small and non-significant. Having a wife with university education is also associated with a slight increase in men's domestic work contributions. In these models, the weekend dummy has a large, positive, and highly significant association with men's time spent on all types of domestic work. Net of other factors, they spent 42 more minutes on housework on weekends and 21 more minutes on care, compared to weekdays. Analysis on the subsample of men for whom information about routine and non-routine housework contributions was collected indicates that men increased the time they spent on routine and

non-routine domestic tasks on weekends. The weekend increase in time spent on routine domestic tasks was considerably larger than the increase in time invested in non-routine tasks. This at least partially reflected the more time-consuming nature of routine housework.

Table 3. Men's domestic work contributions in minutes by type of domestic work

	Domestic Work	Housework	Routine Housework	Non-routine Housework	Care
Weekday (reference)					
Weekend	66.08***	45.28***	49.91***	13.95***	20.80***
	(1.88)	(1.19)	(3.49)	(1.87)	(1.42)
Own education					
High School or less (reference)					
College or Professional School	6.38**	3.31*	8.90	1.86	3.07
	(2.29)	(1.58)	(5.17)	(2.03)	(1.71)
University	6.03**	3.64**	5.25	0.62	2.40
	(1.92)	(1.20)	(4.00)	(1.60)	(1.50)
Spouse's education					
High School or less (reference)					
College or Professional School	2.17	-0.47	6.32	-1.40	2.64
	(1.83)	(1.20)	(3.40)	(1.99)	(1.43)
University	12.02***	4.08*	9.43*	-0.41	7.94***
	(2.59)	(1.68)	(4.67)	(2.15)	(1.81)
Age	-0.28*	-0.07	0.55**	0.18	-0.21**
	(0.11)	(0.08)	(0.20)	(0.13)	(0.08)
Works over 35 hours per week (reference)					
Works less than 35 hours a week	-5.75*	-3.27*	2.00	2.09	-2.47
	(2.63)	(1.60)	(7.82)	(2.82)	(1.78)
Non-employed	135.23***	74.59***	109.64*	83.37	60.64*
	(29.61)	(13.73)	(51.24)	(64.52)	(25.07)
Spouse works over 35 hours per week (reference)					
Spouse works less than 35 hours a week	-13.19***	-10.28***	-6.95	0.14	-2.91*
	(1.90)	(1.40)	(3.85)	(1.65)	(1.17)
Spouse is not working	-10.81***	-8.62***	-10.30**	0.95	-2.19
	(2.53)	(1.56)	(3.93)	(2.50)	(1.89)

Household income	0.00	0.00	0.00	0.01*	-0.00
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Number of children aged less than 6	28.20***	2.56*	9.06*	1.45	25.64***
	(2.54)	(1.20)	(3.53)	(1.58)	(2.07)
Number of children aged 6-9	-2.80	-0.94	-2.49	0.06	-1.85
	(1.45)	(0.96)	(2.61)	(1.61)	(1.03)
Number of children aged 10-14	-1.62	0.17	3.15	1.22	-1.79**
	(1.09)	(0.86)	(2.95)	(2.49)	(0.60)
Number of children aged 15-19	-1.79	-0.05	5.30	-0.20	-1.74***
	(1.52)	(1.43)	(3.31)	(1.27)	(0.43)
Number of adults in the household	-4.20***	-2.89***	-4.58*	-0.97	-1.30*
	(0.84)	(0.59)	(1.80)	(0.99)	(0.56)
Constant	36.49***	24.88***	-6.18	-7.77	11.61**
	(6.03)	(4.36)	(10.01)	(4.79)	(3.66)
Observations	45848	45848	2592	2592	45848
R^2	0.1635	0.1110	0.1329	0.0648	0.1200

Standard errors in parentheses
Source: 2016 Survey of Time Use and Leisure Activities
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Turning to models in Table 4, we have added the interactions between men's educational attainment and the weekend dummy. These models allow us to test if the increase in housework on weekends is different among the educational groups.

The interaction between own education and the weekend dummy has a positive and highly significant association for all types of domestic work for university educated men and for care work for men with college or professional school education. Including interactions into the model highlights the fact that while all men catch up on unpaid domestic work on weekends university-educated men increase their time on unpaid domestic work considerably more than all other men. To give an example, on weekends, men on average spend around 48 minutes more on various types of unpaid work at home. University-educated men on average added 37 extra minutes on top of that, almost doubling the total amount.

Table 4. Men's domestic work contributions in minutes with weekend interaction effects

	Domestic Work	Housework	Routine Housework	Non-routine Housework	Care
Weekday (reference)					
Weekend	48.55***	38.43***	41.42***	8.30**	10.12***
	(2.39)	(1.69)	(4.83)	(2.58)	(1.61)
Own education					
High School or less (reference)					
College or Professional School	4.19	3.71	10.51	-0.20	0.48
	(2.72)	(1.90)	(6.33)	(1.97)	(2.02)
University	-4.66*	-1.01	-1.27	-2.59	-3.66*
	(2.26)	(1.33)	(4.40)	(1.86)	(1.81)
Weekend X Own education interaction					
Weekend X College or Professional	7.99	-1.13	-6.61	6.91	9.11**
School	(4.64)	(3.08)	(10.76)	(6.02)	(3.34)
Weekend X University	36.86***	15.97***	22.85**	11.15**	20.89***
	(4.12)	(2.62)	(7.55)	(4.24)	(3.13)
Spouse's education					
High School or less	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)
College or Professional School	2.26	-0.42	5.91	-1.46	2.68
	(1.82)	(1.20)	(3.34)	(1.98)	(1.43)
University	12.05***	4.12*	9.98*	-0.15	7.94***
	(2.58)	(1.68)	(4.59)	(2.11)	(1.81)
Age	-0.25*	-0.05	0.55**	0.18	-0.20**
	(0.11)	(0.08)	(0.20)	(0.13)	(0.08)
Works over 35 hours per week	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)
Works less than 35 hours a week	-5.43*	-3.15*	2.03	2.18	-2.28
	(2.63)	(1.59)	(7.80)	(2.81)	(1.78)
Non-employed	135.08***	74.49***	109.64*	83.37	60.58*
	(29.70)	(13.82)	(52.00)	(64.38)	(25.05)

Spouse works over 35 hours per week	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)
Spouse works less than 35 hours a week	-12.68***	-10.06***	-7.14	0.11	-2.62*
	(1.89)	(1.40)	(3.82)	(1.65)	(1.17)
Spouse is not working	-10.42***	-8.47***	-10.37**	0.85	-1.96
	(2.53)	(1.56)	(3.91)	(2.48)	(1.89)
Household income	0.00	0.00	0.00	0.01*	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Number of children aged less than 6	28.34***	2.65*	8.87*	1.34	25.70***
	(2.53)	(1.20)	(3.46)	(1.56)	(2.06)
Number of children aged 6-9	-2.61	-0.85	-2.78	-0.05	-1.76
	(1.45)	(0.97)	(2.60)	(1.62)	(1.02)
Number of children aged 10-14	-1.61	0.18	3.68	1.37	-1.80**
	(1.09)	(0.86)	(2.91)	(2.47)	(0.61)
Number of children aged 15-19	-1.74	-0.02	4.85	-0.34	-1.72***
	(1.50)	(1.42)	(3.33)	(1.28)	(0.43)
Number of adults in the household	-4.18***	-2.89***	-4.82**	-1.03	-1.29*
	(0.84)	(0.59)	(1.81)	(0.99)	(0.56)
Constant	39.83***	26.01***	-3.02	-5.67	13.82***
	(6.09)	(4.39)	(10.21)	(4.83)	(3.73)
Observations	45848	45848	2592	2592	45848
R^2	0.1694	0.1137	0.1388	0.0685	0.1243

Standard errors in parentheses
Source: 2016 Survey of Time Use and Leisure Activities
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Control variables in the models behave similarly in Tables 3 and 4. Older age is associated with a decrease in domestic work contributions. Non-employed men spend considerably more time on all types of domestic work, compared to full-time employed men, while part-time employed men spent around 5 minutes less on the unpaid work in total, but this coefficient was only marginally significant. Men with part-time employed wives and non-employed wives reduce their domestic work contributions to a similar extent compared to men whose wives were in full-time employment. There is no clear pattern in household income effects. Every additional child under six years of age adds 28 minutes to men's overall domestic work contributions.

Having preschool children is associated with almost half an hour more time spent daily on care work and is also associated with a 3-minute increase in time spent on housework. Having children in older age groups does not appear to be substantively associated with different unpaid work patterns for men. Men with children aged 10 and older a few minutes less daily on care work compared to men with no children in this age group. Having additional adults (typically men's parents) in the household is associated with husbands spending less time on housework, except for non-routine housework, the coefficient for which is also negative, but insignificant. The association was particularly pronounced for routine housework. Each additional co-residing adult was associated with men spending roughly 5 minutes less on routine housework.

Turning to Tables 5 and 6, we can see that the pattern of associations between domestic work and education are very different for women. In models without interaction effects (Table 5), we can see that women spend more time on housework, especially non-routine housework, but less time on care on weekends. The two types of unpaid work offset each other in the model

analyzing total unpaid work time and the weekend dummy coefficient in that model was insignificant. Remarkably, education is positively associated with domestic work for women: tertiary education was associated with 18 to 24 minutes longer spent on domestic work. For university-educated women, this increase was driven exclusively by longer care work time. Educational attainment is not associated significantly with routine and non-routine housework when other factors in the models are held constant. Furthermore, in contrast with the results of men's models, women's domestic work time is not associated significantly with their spouse's levels of educational attainment.

Table 5. Women's domestic work contributions in minutes by type of domestic work

	Domestic Work	Housework	Routine Housework	Non-routine Housework	Care
Weekday (reference)					
Weekend	4.65	10.23***	14.43*	6.62*	-5.58**
	(2.97)	(2.47)	(6.32)	(3.28)	(2.02)
Own education					
High School or less (reference)					
College or Professional School	18.02***	5.51	9.73	0.42	12.50***
	(3.95)	(3.28)	(8.53)	(4.99)	(2.65)
University	24.18***	-1.75	-6.05	-2.51	25.93***
	(6.16)	(4.80)	(12.63)	(6.62)	(4.52)
Spouse's education					
High School or less (reference)					
College or Professional School	5.81	2.81	-3.38	0.88	3.00
	(5.44)	(4.41)	(10.82)	(5.32)	(4.08)
University	7.23	5.39	1.64	2.71	1.84
	(4.42)	(3.52)	(8.97)	(5.49)	(2.85)
Age	1.07***	2.96***	4.26***	0.21	-1.89***
	(0.28)	(0.22)	(0.54)	(0.33)	(0.20)
Works over 35 hours per week (reference)					
Works less than 35 hours a week	88.84***	78.30***	66.83***	7.84*	10.54***
	(4.13)	(3.37)	(8.53)	(3.97)	(2.44)
Non-employed	215.23***	160.40***	139.32***	28.08***	54.83***
	(5.05)	(93.95)	(10.75)	(6.62)	(4.00)
Spouse works over 35 hours per week (reference)					
Spouse works less than 35 hours a week	-9.30	-5.60	-35.59	22.01	-3.70
	(5.58)	(4.87)	(19.76)	(13.87)	(4.06)
Spouse is not working	-55.89***	-48.85***	-76.59***	5.90	-7.04
	(11.52)	(7.04)	(19.64)	(20.89)	(8.38)

Household income	-0.00	0.00	0.00	0.00	-0.01
	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)
Number of children aged less than 6	111.96***	0.78	12.52	-7.86*	111.18***
	(4.51)	(3.01)	(8.00)	(3.94)	(4.01)
Number of children aged 6-9	25.94***	24.71***	11.75	0.68	1.23
	(3.96)	(3.10)	(7.91)	(4.15)	(2.90)
Number of children aged 10-14	32.56***	41.43***	18.77**	-7.86**	-8.88***
	(3.09)	(2.76)	(7.01)	(3.03)	(1.93)
Number of children aged 15-19	37.76***	44.89***	28.53***	7.58	-7.13***
	(3.10)	(2.85)	(7.76)	(8.95)	(1.21)
Number of adults in the household	9.45***	7.44***	5.23	-2.23	2.00
	(2.11)	(1.73)	(4.95)	(1.98)	(1.18)
Constant	75.17***	-15.76	-48.60	10.77	90.93***
	(15.71)	(12.45)	(27.44)	(15.71)	(10.07)
Observations	52159	52159	2967	2967	52159
R^2	0.3020	0.1970	0.2028	0.0341	0.3953

Standard errors in parentheses
Source: 2016 Survey of Time Use and Leisure Activities
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In models of Table 6, we have added the interactions between education and whether the diary day is a weekend. The interactions between a women's education and the weekend dummy were largely insignificant. In other words, the changes in women's domestic work time on weekends do not vary according to their educational levels.

Table 6. Women's domestic work contributions in minutes with weekend interaction effects

	Domestic Work	Housework	Routine Housework	Non-routine Housework	Care
Weekday (reference)					
Weekend	11.53**	11.08**	15.19	-4.18	0.45
	(4.11)	(3.55)	(10.29)	(5.59)	(2.40)
Own education					
High School or less (reference)					
College or Professional School	21.56***	7.07	9.95	-3.35	14.49***
	(5.07)	(4.21)	(10.62)	(6.47)	(3.36)
University	27.00***	-3.49	-5.49	-9.30	30.49***
	(7.53)	(5.96)	(15.33)	(7.66)	(5.82)
Weekend X Own education interaction					
Weekend X College or Professional	-12.32	-5.55	-0.86	14.23	-6.77
School	(6.32)	(5.24)	(14.17)	(7.91)	(4.03)
Weekend X University	-9.57	5.87	-2.18	26.60**	-15.44*
	(8.63)	(7.15)	(18.14)	(8.87)	(6.56)
Spouse's education					
High School or less (reference)					
College or Professional School	5.85	2.82	-3.37	0.81	3.03
	(5.44)	(4.41)	(10.85)	(5.32)	(4.07)
University	7.21	5.35	1.62	2.89	1.86
	(4.42)	(3.52)	(8.98)	(5.52)	(2.86)
Age	1.06***	2.96***	4.26***	0.21	-1.89***
	(0.28)	(0.22)	(0.54)	(0.33)	(0.20)
Works over 35 hours per week (reference)					
Works less than 35 hours a week	88.77***	78.35***	66.84***	7.65	10.42***
	(4.13)	(3.37)	(8.55)	(3.95)	(2.44)

Non-employed	215.24***	160.48***	139.33***	27.95***	54.77***
	(5.05)	(3.95)	(10.76)	(6.59)	(3.99)
Spouse works over 35 hours per week (reference)					
Spouse works less than 35 hours a week	-9.34	-5.58	-35.68	23.22	-3.76
	(5.58)	(4.87)	(19.75)	(13.87)	(4.05)
Spouse is not working	-55.80***	-48.77***	-76.51***	5.15	-7.03
	(11.53)	(7.02)	(19.70)	(20.93)	(8.44)
household income continuous (calculated from midpoints)	-0.00	0.00	0.00	0.00	-0.01
	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)
Number of children aged less than 6	111.95***	0.83	12.54	-8.03*	111.12***
	(4.52)	(3.00)	(8.02)	(3.93)	(4.01)
Number of children aged 6-9	25.92***	24.76***	11.74	0.84	1.15
	(3.96)	(3.09)	(7.94)	(4.16)	(2.91)
Number of children aged 10-14	32.55***	41.49***	18.75**	-7.61*	-8.94***
	(3.09)	(2.76)	(7.01)	(2.99)	(1.93)
Number of children aged 15-19	37.80***	44.95***	28.51***	7.91	-7.14***
	(3.10)	(2.85)	(7.77)	(8.97)	(1.21)
Number of adults in the household	9.45***	7.44***	5.23	-2.23	2.00
	(2.11)	(1.73)	(4.95)	(1.99)	(1.18)
Constant	73.34***	-16.31	-48.80	13.33	89.65***
	(15.81)	(12.54)	(27.66)	(15.68)	(10.08)
Observations	52159	52159	2967	2967	52159
R^2	0.3022	0.1972	0.2028	0.0373	0.3956

Standard errors in parentheses
Source: 2016 Survey of Time Use and Leisure Activities
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

We should note also that all women irrespective of their educational attainment contribute very large amounts of time to housework on both weekends and weekdays. On weekends all women spend on average 11 minutes more on housework, compared to weekdays, presumably busy with catch up housework.

Control variables for women also behave similarly in models with and without interactions. Women spend 3 minutes more on housework with every year of age and roughly 2 minutes less on care work. There is a clear employment gradient when it comes to domestic work contributions for women. Non-employed women spend much more time on all types of domestic work than part-time employed women. Part-time employed women spend considerably more time on all types of domestic work than full-time employed women. Having a non-employed husband leads to the reduction in time women spent on housework, especially routine housework. There is no clear pattern in the association between household income on women's domestic work contributions. Additional children are associated with a heavy domestic workload for women irrespective of children's age, but the increase in domestic workload is especially heavy (almost 2 hours a day) for mothers with preschool children. Each additional co-resident adult is associated with 9 minutes more spent on unpaid work for women.

Previous models looked at the time all married men and women invest into unpaid domestic labor irrespectively of how much their spouses were contributing. Yet, different families may have different ideas about how much time should be spent on domestic work. So, it is instructive to analyze the patterns of sharing domestic work within couples. In Tables 7 and 8 we look at the ways the day of the week, and educational attainment affect women's share of domestic work responsibilities within couples. In models without interactions (Table 7), weekends are associated with women having a smaller share of all

types of domestic work. Although both women and men increase their time on domestic work on weekends, men's increase is larger than women's and leads to a decrease in women's overall share. Furthermore, university education is associated with a slightly lower share of wives' time spent on housework, especially routine housework, but not on care work. Husbands' higher educational attainment is also associated with a significantly lower wives' share of housework time. Taking together, these results indicate that higher education is a key factor to improve gender equality in the housework, but not care work.

Table 7. Wives' share of domestic work contributions

	Domestic Work	Housework	Routine Housework	Non-routine Housework	Care
Weekday (reference)					
Weekend	-0.108***	-0.101***	-0.101***	-0.163***	-0.135***
	(0.003)	(0.004)	(0.009)	(0.025)	(0.008)
Own education					
High School or less (reference)					
College or Professional School	-0.000	-0.000	-0.017	0.039	0.014
	(0.004)	(0.004)	(0.009)	(0.030)	(0.011)
University	-0.019**	-0.020**	-0.040**	-0.008	0.011
	(0.006)	(0.006)	(0.015)	(0.044)	(0.012)
Spouse's education					
High School or less (reference)					
College or Professional School	-0.019***	-0.012*	-0.019	-0.041	-0.029*
	(0.005)	(0.005)	(0.015)	(0.045)	(0.014)
University	-0.020***	-0.018***	-0.014	0.010	-0.031**
	(0.004)	(0.004)	(0.010)	(0.031)	(0.011)
Age	0.001**	0.001**	0.001	-0.003	-0.002*
	(0.000)	(0.000)	(0.001)	(0.002)	(0.001)
Works over 35 hours per week (reference)					
Works less than 35 hours a week	0.069***	0.073***	0.062***	0.045	0.068***
	(0.005)	(0.005)	(0.012)	(0.037)	(0.013)
Non-employed	0.088***	0.088***	0.085***	0.105**	0.115***
	(0.005)	(0.006)	(0.013)	(0.035)	(0.012)
Spouse works over 35 hours per week (reference)					
Spouse works less than 35 hours a week	-0.008	-0.009	-0.009	-0.029	-0.004
	(0.006)	(0.006)	(0.024)	(0.054)	(0.014)
Spouse is not working	-0.209***	-0.201***	-0.207***	-0.378***	-0.298***
	(0.022)	(0.022)	(0.040)	(0.086)	(0.062)

household income continuous (calculated from midpoints)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Number of children aged less than 6	-0.008 (0.005)	0.003 (0.005)	-0.003 (0.011)	-0.052 (0.034)	-0.009 (0.007)
Number of children aged 6-9	0.011*** (0.003)	0.010* (0.004)	0.018* (0.009)	0.016 (0.031)	0.019** (0.007)
Number of children aged 10-14	0.016*** (0.003)	0.017*** (0.003)	0.008 (0.009)	-0.048 (0.029)	0.006 (0.008)
Number of children aged 15-19	0.019*** (0.003)	0.017*** (0.003)	0.008 (0.009)	-0.031 (0.033)	0.018 (0.011)
Number of adults in the household	0.012*** (0.002)	0.012*** (0.002)	0.010 (0.005)	0.014 (0.021)	0.014* (0.006)
Constant	0.815*** (0.018)	0.812*** (0.018)	0.851*** (0.046)	0.929*** (0.131)	0.854*** (0.033)
Observations	49957	49395	2870	1301	15539
R^2	0.1325	0.1190	0.1352	0.0984	0.1004

Standard errors in parentheses
Source: 2016 Survey of Time Use and Leisure Activities
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In models of Table 8, we have included interactions between the weekend dummy and educational levels.

The interactions between women's tertiary education and weekend dummy are negative and significant for care work and overall domestic work models, suggesting that the reduction in women's share of domestic work is driven by more equal sharing of care work in families where wives have tertiary education.

Table 8. Wives' share of domestic work contributions with weekend interaction effects

	Domestic Work	Housework	Routine Housework	Non-routine Housework	Care
Weekday (reference)					
Weekend	-0.090***	-0.091***	-0.106***	-0.139***	-0.092***
	(0.006)	(0.006)	(0.013)	(0.042)	(0.014)
Own education					
High School or less (reference)					
College or Professional School	0.006	0.004	-0.021	0.056	0.027*
	(0.005)	(0.005)	(0.011)	(0.038)	(0.013)
University	-0.007	-0.015	-0.040*	-0.016	0.033*
	(0.007)	(0.008)	(0.018)	(0.057)	(0.015)
Weekend X Own education interaction					
Weekend X College or Professional	-0.022**	-0.015	0.013	-0.058	-0.048**
School	(0.007)	(0.008)	(0.019)	(0.055)	(0.018)
Weekend X University	-0.041***	-0.020	-0.001	0.017	-0.079***
	(0.010)	(0.011)	(0.027)	(0.073)	(0.021)
Spouse's education					
High School or less (reference)					
College or Professional School	-0.019***	-0.012*	-0.019	-0.042	-0.029*
	(0.005)	(0.005)	(0.015)	(0.045)	(0.014)
University	-0.020***	-0.018***	-0.014	0.010	-0.031**
	(0.004)	(0.004)	(0.010)	(0.031)	(0.011)
Age	0.001**	0.001**	0.001	-0.003	-0.002*
	(0.000)	(0.000)	(0.001)	(0.002)	(0.001)
Works over 35 hours per week (reference)					
Works less than 35 hours a week	0.069***	0.073***	0.062***	0.044	0.067***
	(0.005)	(0.006)	(0.012)	(0.037)	(0.013)
Non-employed	0.088***	0.088***	0.085***	0.105**	0.115***
	(0.005)	(0.006)	(0.013)	(0.035)	(0.012)

Spouse works over 35 hours per week (reference)					
Spouse works less than 35 hours a week	-0.008	-0.009	-0.009	-0.033	-0.005
	(0.006)	(0.006)	(0.024)	(0.054)	(0.014)
Spouse is not working	-0.209***	-0.201***	-0.206***	-0.383***	-0.297***
	(0.022)	(0.022)	(0.040)	(0.086)	(0.063)
household income continuous (calculated from midpoints)	-0.000	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Number of children aged less than 6	-0.008	0.003	-0.003	-0.054	-0.009
	(0.005)	(0.005)	(0.011)	(0.034)	(0.007)
Number of children aged 6-9	0.011**	0.010*	0.018*	0.015	0.018**
	(0.003)	(0.004)	(0.009)	(0.031)	(0.007)
Number of children aged 10-14	0.016***	0.017***	0.008	-0.048	0.007
	(0.003)	(0.003)	(0.009)	(0.029)	(0.008)
Number of children aged 15-19	0.019***	0.017***	0.008	-0.033	0.017
	(0.003)	(0.003)	(0.009)	(0.033)	(0.011)
Number of adults in the household	0.012***	0.012***	0.010	0.013	0.014*
	(0.002)	(0.002)	(0.005)	(0.021)	(0.006)
Constant	0.811***	0.809***	0.852***	0.931***	0.845***
	(0.017)	(0.018)	(0.045)	(0.131)	(0.034)
Observations	49957	49395	2870	1301	15539
R^2	0.1336	0.1194	0.1354	0.0999	0.1026

Standard errors in parentheses
Source: 2016 Survey of Time Use and Leisure Activities
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Control variables in the models explaining the share of time wives spend on domestic work (Tables 7 and 8) behave very similarly in models with and without interactions. Part-time employed women and non-employed women contribute a larger share of couple's time than women in full-time employment. Wives with non-employed husbands contribute a lower share of time to domestic work than wives of full-time workers. The share of wives of part-time employed men is no different from that of wives with men who have full-time jobs. Household income has no clear association with unpaid work sharing within couples. Additional children in all age groups are associated with wives shouldering a larger share of unpaid work. Having additional adults in the household also leads to an increase in wives' share in housework and care work.

CONCLUSION

This paper is the first to document in detail the domestic division of labor between husbands and wives on all major types of domestic work (routine, non-routine, and care work) on both weekends and weekdays. It highlights the important role of education in the domestic division of labor in contemporary Japan. To recap, we have found that educational attainment is associated differently with men's and women's domestic work, with different types of unpaid work and the associations are also differ between weekends or weekdays. Concurring with previous studies, we found that domestic work is mostly women's work in Japan. There are some differences depending on the type of domestic work involved, but overall women's contributions dwarf men's and no type of domestic work can be defined as masculine or even gender-neutral in Japan. Women take responsibility for the major share of all types of domestic work, and on weekdays domestic work is almost exclusively women's domain. On weekends men display compensatory behaviors spending close to an hour longer on domestic work

compared to weekdays. Women increase their housework time by 10 minutes on weekends and do not increase their care time. Echoing Canadian findings by Kolpashnikova and Kan (2020) observed hebdomadal housework patterns for both men and women, and childcare patterns for men only are most consistent with time availability explanation. These findings imply that policies that facilitate flexible working and reducing work hours may help improve gender equality in the domestic division of labor.

As in other societies, education plays an important role mediating gender inequality at home. Men's virtually non-existent involvement in domestic work on weekdays, however, means that the role of men's education in Japan is hard to detect if we do not look at weekends and weekdays separately. We find that educated men contribute considerably more time to housework and care on weekends when they have greater flexibility. For women, the weekday-weekend pattern is less pronounced. Rather tertiary education is associated with dramatic increases in time women spend on care time across all days of the week. Within couples, the educated husbands' larger weekend unpaid work contributions are associated with wives taking responsibility for a lower share of domestic work on weekends than wives of men with less education. These patterns suggest that for both Japanese men and women socialization through education may be associated with different behaviors at home. University educated men may hold and act upon more egalitarian values when it comes to sharing unpaid work, while women with tertiary education seem to hold values that are associated with investing more time into care work. As in our data childcare time is the largest component of care time our findings indicate an association between education and intensive parenting values, which is well documented across the developed countries (e.g. Lareau, 2003; Sani & Treas, 2016).

From a policy perspective, our findings show increasing men's flexibility on weekdays through, perhaps, capping work hours, could play an important role in reducing women's share of domestic work. At the moment men, especially men with university education, do help out more at home on weekends, but weekend contributions, are less effective than weekday help at home in alleviating women's conflict between work and family. Women with career ambitions may continue to see opting out of marriage and parenthood altogether as the best way to achieve work-life balance. Their chances of sharing domestic work equally, or even to get substantive help with domestic work on weekdays within marriage are small. The findings of this study portray a dim prospect for gender equality in marriages in contemporary Japan.

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