



Time Dedicated to Unpaid Housework and Caregiving in Costa Rica: Does Greater Household Income Imply a More Equal Gender Distribution?

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Abstract

Using Costa Rica's annual nationally representative household survey, *Encuesta Nacional de Hogares* (ENAHOG), this study explores how household income and poverty are associated with gender differences in time spent on unpaid housework and caregiving in Costa Rica, 2011-2014. We find a considerable difference in men's and women's average time spent in unpaid work, with women dedicating considerably more time. While women's time in unpaid work is weakly linked to household income, men exhibit a stronger negative association between income and unpaid work, albeit with minimal differences in magnitude across income brackets. When individual and household characteristics are considered, men's and women's estimated time allocation remains relatively consistent across the income distribution, suggesting insensitivity to variations in income or poverty status. Gender disparities persist regardless of income quintiles, poverty levels, age, and household structures. These findings underscore the stark contrast in time allocation between genders, emphasizing the need for further examination of societal norms and structural factors shaping unpaid labor dynamics.

Keywords: time use; gender division of labor; households; work; Costa Rica

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1 Introduction

Unpaid housework and caregiving help secure households' basic needs and are critical to the well-being of families and communities. This work may include everyday routine household maintenance, such as cleaning, child and elder care, preparing food, laundry, and shopping. In

poorer rural communities, it may also include fetching water, gathering fuel wood, and subsistence farming.

Although the gender gap varies by country, an established finding for many countries studied in the time use literature is that women spend more time on unpaid housework and caregiving than men on average (Floro 1995; Bardasi and Wodon 2006; Wittenberg 2009; Budlender 2010; Qi and Dong 2019; Rodgers 2023). This finding appears to hold for Costa Rica (Jimenez-Fontana 2015; 2016; 2019).

Our study complements previous studies by investigating how household income and poverty status are associated with time allocation of non-remunerated housework and caregiving of men and women using time use panel data from Costa Rica's annual nationally representative household survey, Encuesta Nacional de Hogares (ENAH) from 2011 to 2014.¹ Our first hypothesis is that women spend significantly more time on unpaid housework and caregiving after controlling for other demographic characteristics. Consistent with existing literature, we find a significant difference between men's and women's average weekly time dedicated to unpaid housework and caregiving. The conservative estimate shows that women spend 21 hours a week on average more time on housework and 6 to 8 hours a week on average more time on caregiving than men.² Our second hypothesis is that time spent on unpaid housework and care labor is negatively associated with household income. Economic poverty limits a household's ability to secure goods and services from the market. Individuals earning low hourly wages must work longer hours in both paid and unpaid activities in order to secure basic needs than those with higher incomes. High-income households can allocate less time to unpaid work as they can purchase market substitutes for this unpaid work. However, the daily time constraint of twenty-four hours and impact of low wages must be considered as well. Those with the lowest hourly wages may have to work many additional hours in paid work to reach a basic income reducing their time available for unpaid work. Therefore, it is possible to observe lower levels of unpaid work in households with adult members fully employed at low wages compared to higher-income households. Given the role of unemployment and underemployment in low-income households in Costa Rica, we still expect to find an overall negative relationship between unpaid work and income. In our regression analysis, we find that for both men and women, living below the poverty line is associated with more time spent on unpaid household and care work. However, when investigating at the income quintile level, for women we find only small variation in time spent on care work across the income distribution. Women's time spent on unpaid housework is slightly more sensitive to income changes than care work. For men, we find more statistically significant differences between the higher quintiles and lower income quintiles for both unpaid housework and care work, but the differences are minimal.

Our findings reveal that gender gaps in unpaid work do not disappear with higher levels of income. During the 2011-2014 period, household gender norms in Costa Rica were clearly strong, sticky, and pervasive. While policymakers should prioritize alleviating the constraints of the lowest-income households, closing gender gaps in time, pay, and power requires interventions that impact households across the entire income distribution.

¹ The data constraints only enabled us to study women and men, and thus our analysis that follows the constraints of the gender binary. We do acknowledge the existence of genders beyond this binary and look forward to data collection processes in the future that would enable richer analysis beyond two genders.

² We explain in the results section below why this gender time use gap is a conservative estimate. The actual gender time use gap is likely larger.

2 Literature Review

Jimenez-Fontana (2015) investigates men's and women's time spent on unpaid household work by education using data from the 2004 Multi-purpose Household Survey (*Encuesta de Hogares de Propósitos Múltiples*), finding that more educated women spend less time cooking and cleaning, but more time on household management, which includes buying groceries, clothes, medicines, and paying bills. In two later studies, Jimenez-Fontana (2016; 2019) uses the Time Use Survey of the Metropolitan Area of Costa Rica data from 2011, also finding that women in metropolitan areas spend more time relative to men on unpaid housework and caregiving. Interestingly, this trend does not appear to be changing among the younger generation (Jimenez-Fontana 2016).

The unequal division of unpaid labor within households matters in that it can result in gender differences in access to opportunities, resources, and income, as well as differences in well-being (Antonopoulos 2009; Cook and Razavi 2012; Qi and Dong 2018; Rodgers 2023). For one, women's greater time burden in unpaid work compared to men often means they have fewer uninterrupted hours available to dedicate to income-earning activities, which can lead to fewer opportunities in paid labor than men and a weaker attachment to the paid labor force. This limits women's earning potential and reduces women's ability to save and accumulate assets as compared to men (Antonopoulos 2009). In many contexts, research also suggests women's greater unpaid work burden results in fewer uninterrupted hours available for rest and relaxation compared to men as well as a greater likelihood of stress from juggling multiple tasks. This is particularly the case for women in poorer households, who often do not have access to resources to hire domestic help or to purchase market substitutes in order to reduce non-remunerated household work and caregiving time (Floro 1995; Bardasi and Wodon 2006; Kizilirmak and Memis 2009; Qi and Dong 2018; Rodgers 2023).

The simultaneity between time use and income creates challenges for researchers attempting to establish a causal relationship. While one directional causality is difficult to measure, understanding the magnitude of the association between income and time use is still critically important for policy makers. The association between a household member's income relative to their spouse or partner and time use has been studied in the context of the U.S. and is situated within a broader debate about how gender is performed (Bertrand et al. 2015; Hook 2019; Martell and Roncolato 2020). Fewer studies have considered the relationship between household income and time use. Schneider and Hastings (2017) examine the relationship between income inequality in the U.S. and time use and find a large gap in spending on market substitutes for unpaid household labor between high and low-socioeconomic households. To our knowledge, we are the first to closely examine the relationship between household income and time use in Costa Rica.

The context of Costa Rica is critical to consider as part of this investigation. Infrastructure such as clean water and sanitation, social security measures, and social provisions such as affordable care services can help mitigate the burden of non-remunerated work activities and can reduce the likelihood that individuals, particularly women, face time poverty (Bardasi and Wodon 2006; Cook and Razavi 2012). As an upper-middle-income country, nearly 96% of households in Costa Rica have access to electricity, 78% have access to potable water, and 92% have a primary school near their home (Sánchez-Hernández and Trejos-Solórzano 2014). Poorer households receive means-tested non-contributory pensions. Those in paid formal employment and their families have access to public healthcare services and benefit from a guaranteed pension (Martínez Franzoni and Sánchez Ancochea 2014).

Maternity leave entitles women, who have worked for six months of the twelve months before the birth, to four months of paid leave provided 50% by the Caja Costarricense del Seguro Social and 50% by the employer (ILO 2010; Asamblea Legislativa de la República de Costa Rica 1943). In the event of separation from a spouse or partner, women generally are assumed to be the primary caregivers of the children and typically receive a pension from the father to maintain the children's same level of economic well-being.

By helping to either reduce the time needed in unpaid labor or to balance paid and unpaid work time, these provisions reduce the likelihood of women facing time poverty. However, provisions attached to paid formal employment do not cover the most vulnerable in the population, such as poor women working in informal employment. Evidence suggests that the concentration of women from poor households in informal employment is in part related to the greater ability to combine unpaid and paid work (Mitra 2005; Chen et al. 2005; Kucera and Roncolato 2008; Roncolato and Radchenko 2016). Unfortunately, informal employment is also often characterized by low pay and precarious forms of employment (Chen et al. 2005; Kucera and Roncolato 2008). Additionally, informal employment often does not have the same entitlements to social security and protection that are often linked to paid work in the formal labor market (Antonopoulos 2009).

It is estimated that about 40% of women ages 15 to 64 years in Costa Rica are employed in paid labor, and 35% of women's employment is informal (Trejos, Mata, and Oviedo 2014). The majority of domestic service jobs, which primarily employ women from poorer households pay 144,000 colones (about 270 US dollars in 2014) monthly on average and are typically informal (Trejos, Mata, and Oviedo 2014). Additionally, women are more likely to be financially dependent on others than men. In 2010, 30% of women (45% of women in rural communities) compared to 10% of men (12% of men in rural communities) ages 15 years and older who are not studying have no monetary income of their own in Costa Rica (Economic Commission for Latin America and the Caribbean cited in United Nations 2013).

3 Data

The study uses data from the Encuesta Nacional de Hogares (ENAH) for 2011, 2012, 2013, and 2014, which is available from the Instituto Nacional de Estadística y Censos (INEC) de Costa Rica. The ENAH is nationally representative and based on the sampling frame from the 2000 National Population Census. It comprises 1,120 enumeration areas with twelve households per enumeration area, resulting in approximately 13,440 households each year. About 75% of the households overlap from one year to the other and thus the data can be used as a panel. The survey, implemented every July, asked one respondent for information on all household members regarding social-demographic characteristics. The survey also inquires about the employment status and hours worked in unpaid labor for the week for household members 12 years and older.³ The final sample used in this study includes all men and women

³ Specifically, the survey asks: in the past week how many hours did you dedicate to (1) washing, ironing, cooking, cleaning, and other tasks of the household, (2) domestic tasks in other households without pay or in-kind, (3) caring for children, elderly, and other people without pay or in-kind/trade, (4) production of agriculture or livestock exclusively for the consumption of the household, (5) production of agriculture or livestock exclusively for the consumption of the household, (6) repairing of the house or other activities on your land related to the construction for your home, (7) sewing/stitching for the home or own use, and (8) community service or volunteer work.

18 years and older from households with information for two or more years of the panel data. It comprises individuals from 11,009 households and a total of 62,701 observations.⁴

Each type of time use data has its pros and cons. The stylized weekly recall method used in the ENAHO survey is a method that is easily integrated into household surveys and has the potential strength of capturing historical trends (Juster and Stafford 1991; Juster, Ono, and Stafford 2003). An advantage of weekly time use data found in ENAHO over daily time diaries is that the stylized recall method data better captures long to medium-term time trends versus specific daily routines. It also prevents the problem of having to account for weekend days and other days that may not be representative of a “typical” day for an individual (Frazis and Stewart 2012).

The major disadvantage of the stylized recall method is that it tends to provide overestimations of time use relative to the time diary or experiential sampling method (Ilahi 2000; Juster, Ono, and Stafford 2003). Respondents tend to over report activities that are consistent with social norms and values and are reflective of their preferred self-image but underreport activities that may reflect negatively on their image (Juster, Ono, and Stafford 2003; Kan and Pudney 2008). Kan and Pudney (2008) also note that activities that are more strenuous or difficult may be over-reported. The stylized recall method does tend to underreport activities that seemed unimportant or took little time, such as small home repairs (Juster, Ono, and Stafford 2003). The recall method may lead to over-reporting of total time spent in unpaid housework and caregiving activities, as often different activities overlap, such as household tasks and childcare (Ilahi 2000).

Childcare time is a challenge in all data collection methods because childcare is often an activity done simultaneously with others. Estimates of time spent on childcare typically are higher using the stylized recall method due in part to errors in time diary methods. Many original time diaries asked individuals to report only primary activities so many women may report cleaning the house for instance and fail to mention she was also watching a child during this time (Folbre 2006). Increasingly, time diaries allow individuals to report two or more activities at a given time. Although the ENAHO does not ask specifically for overlapping or simultaneous activities, it does inquire about the total time spent on any given activity. The data suggest that there were likely simultaneous activities as some women estimated total weekly time is high. We consider this to be indicative of the high work burden that some women face rather than measurement error (see Floro (1995) and Floro and Miles (2003) for more discussion).

Another challenge for the analysis of data collected from household surveys like the ENAHO is that proxy individuals in some cases answered the questions for other members of the household. The potential for misinformation is a concern that is controlled for in the analysis. Because measurement errors in the “stylized” time use data may bias group average measures such as sex, age, and marital status, and because of the potential bias due to proxy respondents, we do not provide descriptive statistics of the raw time use variables of household work and care work. Instead, to reduce the potential biases, we estimate average weekly time use in housework and care labor with a set of regression equations (Kan and Pudney 2008).

⁴ There are 14,176 observations in 2011, 20,418 observations in 2012, 18,434 observations in 2013, and 9,367 observations in 2014. There are 15,498 individuals (30,996 observations) with information across two years, 8,201 individuals (24,603 observations) with information across three years, and 1,699 individuals (6,796 observations) with information across all four years.

4 Empirical model

While not all the individuals match across years within the panel, creating a balanced panel from an unbalanced panel reduces efficiency. Instead, an unbalanced panel is used to estimate individuals' time dedicated to household work and care work.⁵ A Hausman test suggests that a fixed effects model is most appropriate. Since individuals' time dedicated to different activities is intra-dependent, the errors between the two regression equations are correlated across the equations for a given individual. As such, to improve estimator efficiency, the recent time use studies use seemingly unrelated system equations (SURs) (see Kimmel and Connelly (2007) and Martel and Roncolato (2016), for instance). Since our analysis consists of multiple household members, the standard errors are correlated across individuals within the same household making SURs less appropriate in this case. Additionally, both equations contain the same set of regressors. And thus, even though the errors are correlated across equations, the system reduces to individual models. For time spent on unpaid household work, we estimate

$$y_{it} = \boldsymbol{\varphi}_{it}\beta_1 + \boldsymbol{\psi}_{it}\beta_2 + \alpha_i + \epsilon_{it}, \quad [\text{Eq. 1}]$$

where y_{it} is the time spent on unpaid household work reported for the week prior to the day of survey for individual i observed in year t for $i = 1..N_t$; β_1 and β_2 are parameters to be estimated; $\boldsymbol{\varphi}_{it}$ is a vector of individual characteristics for individual i observed in year t ; $\boldsymbol{\psi}_{it}$ is a vector of household characteristics for individual i observed in year t ; α_i is the group-specific constant term and ϵ_{it} is the error term. There are N_t individuals for $t = 2011, 2012, 2013, \text{ and } 2014$.

A parallel regression predicts time spent on unpaid care labor. We do not address censoring at zero as reports of no time spent in any of these categories represent classical measurement error and not censoring (Frazis and Stewart 2012).

The regressions are run for men and women separately. The vector of individual controls includes age and its square, marital status, if the individual has been married previously, if the individual is designated as the "household head" or is part of the "primary couple" in the household, level of educational attainment, and whether the data comes from a proxy respondent rather than the individual.⁶ The household characteristics include gross household income in the last year; whether there are children in the household ages 2 years and younger, ages 3 to 6 years, and ages 7 to 11 years; and indicators for the household structure. Households are defined as households with (1) one adult, (2) two adults who are a "couple," (3) multiple adults with the presence of a couple, and (4) multiple adults without a couple. All regressions include individual fixed effects which means that our estimate is a within-individual estimate of the time the individual spent, on average, on housework/caregiving over the time of the study. We use the models with individual fixed effects for ease of estimation of a single predicted outcome per individual to group and compare across income quintiles. However, as a robustness check, we estimate a fixed-effects panel regression model with both individual and time-fixed effects, controlling for unobserved heterogeneity at the individual

⁵ We include in household work the time dedicated to household chores such as washing, ironing, cooking, cleaning, and other tasks of their own household, as well as time dedicated to repairing/construction of the house, and sewing/stitching for the home or personal use. We tested and found no statistical differences in the gender gap across income strata for each of these concrete activities separately, except for household chores.

⁶ The ENAHO allows the household to designate the person who serves as the household head and to indicate if there is a joint household head shared by two members of the household.

level and time-specific effects. The results of this estimation are remarkably similar to the individual-fixed effects model (see Appendix A2).⁷

Gross household income is the sum of income from all household members, remittances from members outside of the household, returns on investments as well as any additional public and private transfers. Labor market outcomes such as earnings are in part the product of the intra-household distribution of labor, there are theoretical reasons for suspecting that weekly earnings may be endogenous. This potential endogeneity poses an empirical difficulty for researchers interested in estimating the impact of income on household time use. To correct for this potential endogeneity, researchers may use instrumental variables to predict the exogenous effect of earnings on time use. However, given that Hersch and Stratton (1997) find estimates from instrumental variables and estimates from ordinary least squares (OLS) regressions of wages on time work to be nearly equivalent, suggesting that earnings endogeneity does not bias time use estimates, we proceed with total gross household income in our regressions.⁸ Still given that we cannot isolate the magnitude of the causal relationship, we interpret the relationship between time use and income in the results below to be one of association.

In addition to gross household income, we explore differences in men's and women's time dedicated to unpaid housework and caregiving by household poverty status. We use the official national poverty line, which is estimated by the INEC using the ENAHO data. A household below the poverty line does not have enough income to meet the needs for an adequate standard of living considering household size, the region, rural and urban differences in the cost of living, and changes over time.

5 Results

5.1 Descriptive statistics

Table 1 presents the distribution and income characteristics for all four household structures in Costa Rica in 2014. Only 17% of households are couple households with or without children younger than 18 years. The majority of households are extended family households consisting of parents or other relatives and the couple (45%) or extended families without the couple (25%). The least common type of household is households with only one adult (13%).

About 34% of all households were below the poverty line in 2014. This share is similar among households with only a single adult (33%), households with one adult couple (32%), and households with extended families with a couple (32%). In contrast, 41% of extended families without a couple are below the poverty line.

⁷ Notice that whether the household is located in a rural or urban setting is time invariant and thus captured by individual fixed effects.

⁸ Researchers also often replace income with wealth as wealth portrays a more permanent status of economic wellbeing than income. However, since wealth captures little variation across time, it is difficult to use in the fixed effects module. Nonetheless, we also regressed time use on wealth using a wealth index each year and obtained similar estimates of time use.

Table 1. Household types and income in Costa Rica, 2014

Household type	Observations	Distribution (%)	Mean monthly income (colones)	Share below poverty line (%)
All households	12,175	100	906,125 (1,106,579)	34 (0.63)
Single adult household	1,585	13	458,958 (609,589)	33 (0.61)
Couple adult households (2 adults)	2,056	17	869,017 (1,177,598)	32 (0.61)
Multiple adult households with couple (3 or more adults)	5,484	45	1,127,636 (1,270,876)	32 (0.60)
Multiple adult households without couple (2 or more adults)	3,050	25	765,237 (802,544)	41 (0.68)

Source: Authors' elaboration with ENAHO 2014 data.

Notes: All statistics refer to the household. Income is the gross income expressed in current *colones*, the Costa Rican currency. The poverty line is defined by country standards in accordance with the INEC, Costa Rica. Standard deviation in parentheses

Table 2 presents summary statistics of the sample in 2014. Men and women are on average 42 and 43 years old. About 57% of men and 53% of women are married, while 9% of men and 21% of women were previously married. Primary school is the highest education level of 48% of men and 45% of women, while 15% of men and 16% of women have completed high school. Around 20% of men and 23% of women live with children of ages 7-11 in the household. About 15% of men and 19% of women live in households with children of ages 3 to 6 years old.

Table A1 in the appendix shows the mean characteristics for men and women by type of household. Single adult households are formed predominantly by older men (52 years on average) and women (57 years on average) who were previously married (53% and 69%, respectively). Extended family households are more likely to include young children than other types of households.⁹ Parents of young children likely rely on other family members for support. Within extended family households, children may be the responsibility of the parents as well as the other relatives living within the household.

⁹ To corroborate that this result is not driven by the panel sample, or the sample used in this study, we used the full sample data of ENAHO 2018 and replicated the household structures developed here. The results from that exercise provide similar patterns as the ones shown here.

Table 2. Descriptive statistics of adult men and women in Costa Rica, 2014.

Variable	All households	
	Men	Women
Observations	13,297	14,134
Age	41.74 (17.19)	42.81 (17.37)
Married or common union	0.57 (0.50)	0.53 (0.50)
Previously married	0.09 (0.29)	0.21 (0.41)
Primary school completed	0.48 (0.50)	0.45 (0.50)
Secondary school completed	0.15 (0.36)	0.16 (0.36)
Completed at least some undergraduate	0.16 (0.37)	0.19 (0.39)
Completed at least some postgraduate	0.01 (0.12)	0.01 (0.12)
Children 0-2 years old in household	0.12 (0.32)	0.14 (0.35)
Children 3-6 years old in household	0.15 (0.36)	0.19 (0.39)
Children 7-11 years old in household	0.20 (0.40)	0.23 (0.42)
Proxy survey respondent	0.66 (0.47)	0.43 (0.49)

Source: Authors' elaboration with ENAHO 2014 data.

Note: Standard deviation in parentheses.

Table 3 presents employment information based on whether the household is above or below the poverty line. The difference in employment for both men and women living in households below the poverty line compared to those living in households above the poverty line is considerable: 28% fewer women living in households below the poverty line are employed and 24% fewer men living in households below the poverty line are employed compared to those living in households above the poverty line. Of those employed, both men and women, but particularly women, living in households below the poverty line are more likely to be employed in informal employment as their primary job than those living in households above the poverty line.¹⁰

¹⁰ Employment is considered informal if the employee's social security contributions are not paid by the employer.

Table 3. Employment status of men and women across the poverty line in Costa Rica, 2014

	Panel A: Men	
	Household above poverty line	Household at or below poverty line
Observations	10,311	2,986
Employed (%)	80 (0.40)	56 (0.50)
Unemployed (%)	3 (0.18)	13 (0.34)
Share of employed in informal employment (%)	22 (0.41)	44 (0.50)
	Panel B: Women	
	Household above poverty line (%)	Household at or below poverty line (%)
Observations	10,432	3,702
Employed	47 (0.50)	19 (0.39)
Unemployed	4 (0.19)	9 (0.28)
Share of employed in informal employment	33 (0.47)	69 (0.46)

Source: Authors' elaboration with ENAHO 2014 data.

Notes: Standard deviation in parentheses. Poverty line is defined by country standards according to INEC.

6 Results

The regressions predicting time spent on housework and caregiving for men and women across the income distribution are presented in Table 4. The key findings are (1) there is a considerable gender difference in the time men and women dedicate to unpaid housework and caregiving, (2) the time spent in unpaid care work varies little across the income distribution for women but not for men, (3) women in the third and fourth income quintiles spend slightly less time on average per week on unpaid housework than women in the lowest quintile, *ceteris paribus*, and (4) men in all four higher income quintiles spend slightly less time on unpaid housework on average per week than men in the lowest income quintile, *ceteris paribus*.

For men, hours dedicated to unpaid housework and caregiving are negatively associated with income; indicating that men living in lower-income households spend more time on unpaid housework and care work. However, the difference in time dedicated to these activities per week across the income quintiles is minimal. The difference is a little more than 1 hour per week for housework and a little more than 30 minutes on average per week for caregiving. For women, only in the middle of the income distribution is the association between household income and time in unpaid work statistically significant; the estimates suggest that women living in the fourth income quintile households spend about 1 hour less time on unpaid housework and caregiving on average than women in the lowest quintile.

Other factors correlate with income and with the time men and women spend in unpaid housework and care work, such as their age, marital status, the presence of young children in the house, and the household structure. Using the estimates with the full set of regressors in Table 4, Figure 1 presents the average time spent on unpaid housework and care work for each income quintile. The average time spent on total unpaid work is highest for men in the lowest quintile and highest for women in the second quintile.

Table 4. Predicting women’s and men’s time spent on unpaid housework and caregiving by income quintiles using individual fixed effects, 2011-2014

	(1)	(2)	(3)	(4)
	Women’s weekly housework hours	Men’s weekly housework hours	Women’s weekly caregiving hours	Men’s weekly caregiving hours
Household Income Quintiles				
Quintile 2	-0.356 (0.409)	-0.727*** (0.210)	-0.052 (0.383)	-0.176 (0.162)
Quintile 3	-0.949** (0.445)	-0.860*** (0.225)	-0.387 (0.416)	-0.470*** (0.174)
Quintile 4	-0.861* (0.497)	-1.059*** (0.248)	-0.811* (0.465)	-0.533*** (0.191)
Quintile 5	-0.827 (0.596)	-0.912*** (0.294)	-0.911 (0.558)	-0.621*** (0.227)
Age	0.067 (0.244)	-0.071 (0.115)	-0.214 (0.229)	0.117 (0.089)
Age squared	-0.004* (0.002)	0.001 (0.001)	0.002 (0.002)	-0.002* (0.001)
Married or common union	1.781** (0.892)	-0.225 (0.507)	0.495 (0.835)	-0.036 (0.391)
Previously married	-1.651** (0.669)	-0.364 (0.429)	-0.172 (0.626)	-0.243 (0.331)
“Household head” or part of the “primary couple”	0.167 (0.886)	-0.055 (0.491)	1.112 (0.829)	0.258 (0.379)
Secondary school completed	0.359 (0.722)	-0.425 (0.344)	0.950 (0.676)	0.142 (0.266)
Completed at least some undergraduate	-0.121 (0.972)	-0.519 (0.468)	0.859 (0.910)	-0.070 (0.361)
Completed at least some postgraduate	-0.718 (1.849)	0.006 (0.869)	-0.452 (1.731)	0.913 (0.670)
Children 0-2 years old in household	0.436 (0.489)	-0.131 (0.252)	9.683*** (0.458)	1.953*** (0.195)
Children 3-6 years old in household	0.175 (0.504)	-0.420 (0.260)	4.796*** (0.472)	0.351* (0.201)
Children 7-11 years old in household	0.035 (0.476)	-0.515** (0.248)	1.986*** (0.445)	0.220 (0.192)

	(1)	(2)	(3)	(4)
	Women's weekly housework hours	Men's weekly housework hours	Women's weekly caregiving hours	Men's weekly caregiving hours
Household Type				
Couple adult	3.281*** (1.151)	-3.713*** (0.667)	-1.647 (1.078)	-0.037 (0.514)
Multiple adults w/couple	3.390*** (1.080)	-3.709*** (0.647)	1.571 (1.011)	0.795 (0.499)
Multiple adults w/o couple	2.500*** (0.845)	-2.404*** (0.612)	1.251 (0.790)	0.617 (0.473)
Proxy respondent	-3.473*** (0.257)	-1.938*** (0.131)	-2.150*** (0.241)	-0.876*** (0.101)
Observations	56,265	53,513	56,265	53,513
Individual FE	yes	yes	yes	yes
F-statistics	13.515	16.481	34.405	11.621
p-value	0.000	0.000	0.000	0.000

Source: authors' calculations with ENAHO 2011-2014 data.

Notes: The first income quintile is the income category of reference. Quintiles were defined based on the monthly gross household income of 2014. Standard errors are in parentheses. Statistical significance level: * p<.10, ** p<.05, *** p<.01

Women's disproportionate amount of time spent on both housework and care work relative to men in their same income bracket is evident across all income quintiles. The predicted time use indicates that women 18 years and older spend on average between 24 and 27 hours per week in housework and between 7 and 9 hours per week in care work across the income distribution. In comparison, men spend between 4 and 6 hours in housework per week and between 1 and 2 hours of care work per week.

Figure 2 presents the average time spent on both time use categories across different age cohorts for men and women. Again, women's disproportionate amount of time spent on both housework and caregiving relative to men in the same age cohort is evident across all age cohorts. Men's time contribution to housework remains around 5 hours on average per week. For women, time spent on both care work and housework is highest from 18 to 35 years of age.

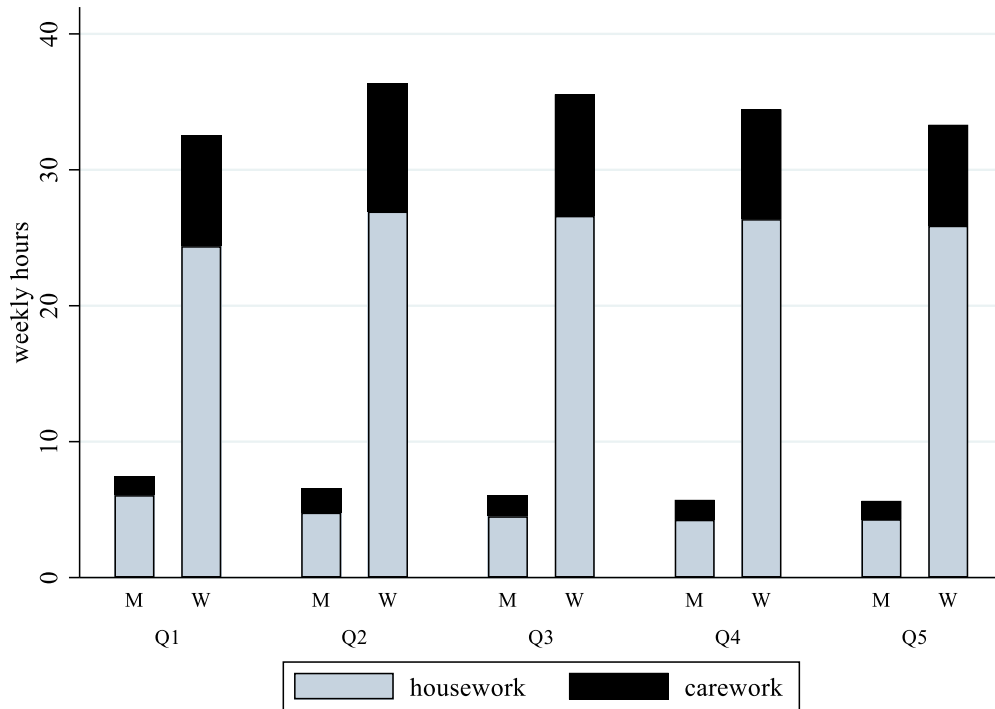


Figure 1. Women and men’s average estimated time spent on unpaid housework and caregiving across income quintiles in Costa Rica

Note: Predicted hours from equation (1) and estimates of Table 4 including the full set of regressors and individual fixed effects. M stands for men, W stands for women, Q1-Q5 denotes the five income quintiles. Differences in time, in both housework and care work, between men and women are statistically significant at the 95% confidence level.

Source: Authors’ elaboration with ENAHO 2011-2014 data.

When age and income are mapped together (not shown here but available upon request), time spent on unpaid care work appears to peak later in life for women in the higher income quintiles than for women in households in the lower wealth quintiles. This suggests younger individuals in higher-income households may have more time to dedicate to education, paid work, or leisure and they may be more likely to wait to marry and have children than women in poorer households. The largest gaps in time use between men and women appear to be between the ages of 20 and 30 years for individuals in the lower quintile households and slightly later (between the ages 25 and 35 years) for men and women in the highest income households.

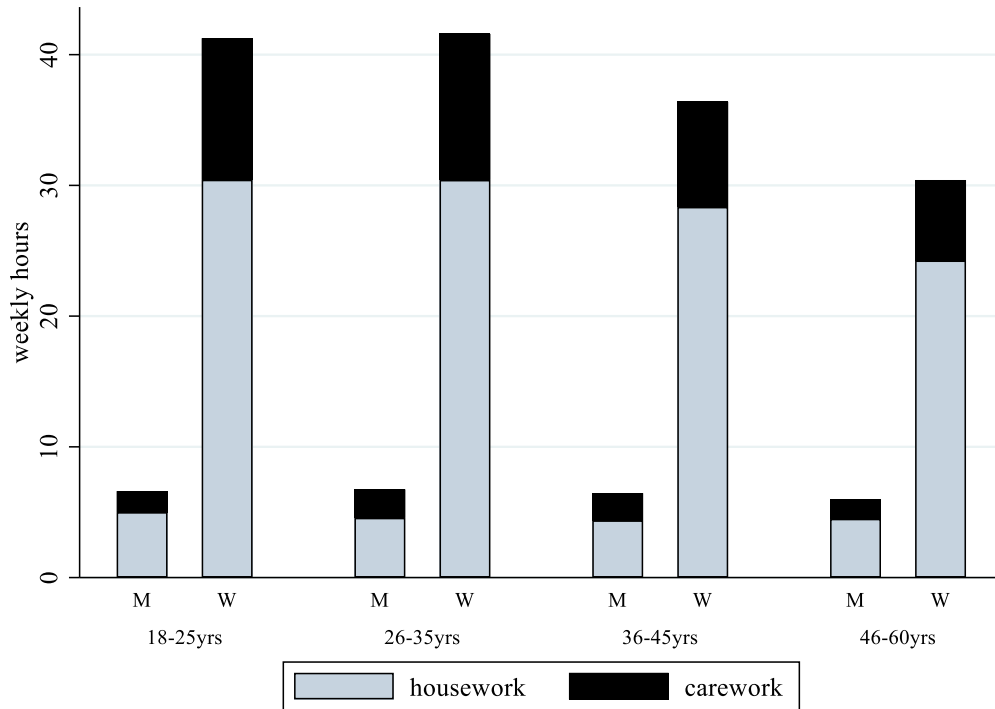


Figure 2. Women and men’s average estimated time spent on unpaid housework and caregiving across age cohorts in Costa Rica

Note: Predicted hours from equation (1) and estimates of Table 4 including the full set of regressors and individual fixed effects. M stands for men, W stands for women. Differences in time, in both housework and care work, between men and women are statistically significant at the 95% confidence level.

Source: Authors’ elaboration with ENAHO 2011-2014 data.

Table 5 presents the same regressions of equation (1) but with the official poverty line instead of income quintiles. The time estimates are similar to the income quintile regressions. Men and women living in households below the poverty line spend more time in housework and caregiving on average compared to those who are in households not in poverty; however, the average difference is less than 1 hour per week for men and women. Using the estimates and the full set of regressors from Table 5, the predicted time use estimates by household structure are presented in Table 6. These results corroborate that the difference in time spent on housework and caregiving for men and women in households below the poverty line is consistent across different household types. It also shows again the stark difference between men and women in time spent on housework and care work regardless of the household structure and poverty level.

Table 5. Predicting women and men’s time spent on unpaid housework and caregiving by poverty level using individual fixed effects, 2011-2014

	(1)	(2)	(3)	(4)
	Women’s weekly housework hours	Men’s weekly housework hours	Women’s weekly caregiving hours	Men’s weekly caregiving hours
Household is below the poverty line	0.701** (0.342)	0.592*** (0.173)	0.577* (0.320)	0.492*** (0.133)
Age	0.056 (0.244)	-0.086 (0.115)	-0.232 (0.229)	0.108 (0.089)
Age squared	-0.004* (0.002)	0.001 (0.001)	0.002 (0.002)	-0.002* (0.001)
Married or common union	1.774** (0.891)	-0.228 (0.507)	0.494 (0.834)	-0.046 (0.391)
Previously married	-1.642** (0.669)	-0.373 (0.429)	-0.158 (0.626)	-0.251 (0.331)
“Household head” or part of the “primary couple”	0.201 (0.885)	-0.024 (0.491)	1.166 (0.828)	0.282 (0.379)
Secondary school completed	0.345 (0.722)	-0.425 (0.344)	0.935 (0.676)	0.138 (0.266)
Completed at least some undergraduate	-0.135 (0.972)	-0.521 (0.468)	0.836 (0.910)	-0.071 (0.361)
Completed at least some postgraduate	-0.736 (1.849)	0.009 (0.869)	-0.512 (1.730)	0.910 (0.670)
Children 0-2 years old in household	0.373 (0.490)	-0.193 (0.253)	9.626*** (0.458)	1.910*** (0.195)
Children 3-6 years old in household	0.119 (0.504)	-0.464* (0.260)	4.742*** (0.472)	0.316 (0.201)
Children 7-11 years old in household	-0.014 (0.476)	-0.552** (0.249)	1.942*** (0.446)	0.187 (0.192)
<i>Household Type</i>				
Couple adult	3.116*** (1.147)	-3.854*** (0.666)	-1.773* (1.074)	-0.136 (0.514)
Multiple adults w/couple	3.146*** (1.068)	-3.943*** (0.644)	1.364 (1.000)	0.643 (0.497)
Multiple adults w/o couple	2.303*** (0.839)	-2.601*** (0.611)	1.124 (0.785)	0.491 (0.471)
Proxy respondent	-3.487*** (0.257)	-1.933*** (0.130)	-2.167*** (0.240)	-0.869*** (0.101)
Observations	56,265	53,513	56,265	53,513
Individual FE	yes	yes	yes	yes
F-statistics	15.998	19.018	40.786	13.974
p-value	0.000	0.000	0.000	0.000

Source: Authors’ calculations with ENAHO 2011-2014 data.

Note: Poverty line is defined by country standards according to INEC. Standard errors are in parentheses. Statistical significance level: * p<.10, ** p<.05, *** p<.01

Table 6. Predicted means by household type in Costa Rica, 2011-2014

	All Households		Single Adult		Couple adult - 2 adults only		Multiple adults with couple		Multiple adults without couple	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Housework										
Households above national poverty line	4.63*** (1.60)	25.77*** (6.77)	9.01*** (0.81)	17.32*** (7.57)	4.32*** (1.03)	26.84*** (5.49)	3.96*** (0.98)	27.86*** (5.22)	5.69*** (1.00)	22.66*** (7.46)
Households below national poverty line	5.10 (1.51)	26.61 (6.95)	9.64 (0.75)	18.34 (7.20)	5.01 (1.01)	25.14 (6.20)	4.49 (1.01)	29.27 (5.83)	6.18 (0.96)	24.63 (7.14)
Care work										
Households above national poverty line	1.37*** (1.25)	7.72*** (4.92)	0.58*** (1.31)	4.54*** (1.32)	0.51* (1.08)	3.44*** (1.66)	1.70*** (1.19)	9.45*** (5.09)	1.23*** (1.11)	7.21*** (4.30)
Households below national poverty line	1.96 (1.54)	10.17 (6.14)	0.92 (1.20)	5.08 (1.34)	0.45 (1.30)	3.63 (1.56)	2.47 (1.36)	12.22 (5.90)	1.72 (1.34)	10.52 (5.88)

Source: Authors' calculations with ENAHO 2011-2014 data.

Notes: The poverty line is defined by country standards according to INEC. Standard errors are in parentheses. Stars show the significance level (* p<.10, ** p<.05, *** p<.01) of a two-tailed t-test between households above and below the poverty line.

There are some additional key findings from the results shown in Tables 4 and 5. Compared to single women, married women spend on average more time on housework. Both men and women spend on average more time on caregiving when they have young children; however, for men the difference is minimal. For men, it is between 1 and 2 hours a week additional on average when the child is an infant to 2 years old, and decreases as the children get older. In comparison, the impact of having a small child increases women's time on caregiving substantially depending on the age of the children.

Men's and women's housework vary by household type. Women spend more than 2 to 3 additional hours per week in couple and extended family households than women who live alone. Men in extended family and couple households spend about 2 to 4 fewer hours than men who live alone.

The control variable for whether a proxy reported the individual's time is negative and significant for both men and women, the magnitude for women however is greater. For housework, the magnitude is more than 1.5 times greater for women than men, and for care work is almost 2.5 times greater for women than men. This indicates that women's unpaid time use is more underreported than men's when reported by someone else in the household. It is likely the case, that the gender time use gap that we find is a conservative estimate of the actual time use gap.¹¹

¹¹ We conducted robustness checks with and without data declared by proxies, and the results remain robust. The findings using data declared by proxies versus all data show similar magnitude, sign, and significance. Similarly, results using data declared by non-proxies compared to all data exhibit similar magnitude and sign,

7 Robustness

As a robustness check, we replace the income quintiles with the natural log of household income as the independent variable. The results (not shown here but available upon request) are consistent with the findings in Table 4, that the strongest association is the negative correlation between men's housework time and household income.

We recognize that it is not just access to income that matters for unpaid work, but rather the nature of work that generates this income which impacts how individuals allocate their time. Above we cite the literature examining the association between informal employment and women's ability to combine this work with unpaid household and care labor. Informality, however, is closely correlated with income, so we are unable to include both in the same regression without significant concerns about multicollinearity. We, therefore, ran a separate set of regressions on the subsample of individuals who are working and designated informal status as the independent variable of interest (results available upon request). We also note that there is an issue with endogeneity between informal employment and unpaid housework and care labor, as having a high unpaid work burden likely influences selection into informal versus formal employment. We thus emphasize again these results demonstrate association rather than causation. For women, we find a very strong positive association between being an informal worker and the amount of unpaid housework and care labor (2.3 hours and 1.4 hours a week, respectively). We expect that some women are constrained to choose informal over formal employment because of pre-existing unpaid housework and caregiving time commitments. Additionally, empirical literature in other contexts finds that women in informal employment do more simultaneous paid and unpaid work compared to women in formal employment (Mitra 2005; Roncolato and Radchenko 2016). This seems to hold for Costa Rica as there is strong positive association between unpaid housework and caregiving time and being informally employed. For men, we do not find a significant association between paid informal employment and time spent in housework and only find a very small (less than a half-hour) positive association with time spent in care labor.

8 Discussion and Conclusion

Costa Rica's annual nationally representative household survey, ENAHO, data enabled us to investigate the relationship between men's and women's time use patterns and household income. There is a considerable difference in women's and men's average time spent on unpaid housework and caregiving. Overall, women's time spent on housework and caregiving is only weakly associated with household income. For men, we find a stronger negative association between income and unpaid work than for women, but only a small difference in hours dedicated to these activities across the income distribution.

The results suggest that men's and women's average time dedicated to housework and caregiving does not vary much across the income distribution. Holding all else constant, men living in households with greater income in Costa Rica appear to spend only slightly less time on unpaid housework and care work. Similarly, women living in households above the poverty line spend only slightly less time on caregiving, and while the estimated time spent in unpaid

but significance varies when the sample size of the non-proxy group decreases. Despite the robustness of the results, as more than half of the data come from proxy respondents, we prioritize more precise estimates with the total sample rather than reducing it to only non-proxy responses.

work by the upper-income quintiles is slightly greater than the bottom quintile, we also do not find much difference across the income distribution. This all suggests, again, that men's and women's average time spent in unpaid work is not particularly sensitive to variations in income or poverty status.

There may be different competing factors at play. One might expect there to be a non-linear relationship between household income and women's care work. High-income households may choose to have only one parent or primary caregiver working thus enabling the other parent or other caregivers in the household to spend more time on childcare. We may also see the alleviation of this time obligation in the higher-income households through the use of time-saving household technologies, and to a greater extent through the ability to hire domestic work and childcare providers to complete the necessary tasks. Analyzing the specific choice sets that each household faces is beyond the scope of the paper, but future research should investigate this question, particularly the intersection between class and gender social norms.

Our results do reveal a very clear and stark difference between men's and women's average time spent on housework and caregiving in Costa Rica. We find the difference between men's and women's time spent in housework and care work to be statistically and economically significant across all income quintiles, poverty levels, and regardless of age brackets and household structures.

Unpaid work obligations may prevent women, in particular, from being able to work in higher-paying employment due to long or inflexible hours, difficult or lengthy commutes, or restrictive family leave policies. The descriptive statistics suggest women's employment rate is particularly low for households below the national poverty line and when employed, women in low-income households are most likely to be engaged in informal employment. Policy interventions could focus on increasing job quality and employment opportunities for women within the paid formal sector. The policy inventions cannot solely focus on women, however. There is important work to be done regarding changing cultural attitudes with regard to who is responsible for unpaid housework and care work.

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References

- Antonopoulos, R. (2009). The unpaid care work-paid work connection. Geneva: International Labour Organization (ILO Working Paper No. 86). Downloaded from: <https://www.ilo.org/media/340286/download> [accessed: May 2024]
- Asamblea Legislativa de la República de Costa Rica. (1943). *Código de Trabajo Ley no. 2 de 27 de agosto de 1943 y sus reformas*. Costa Rica. Available at: <https://www.tse.go.cr/pdf/normativa/codigodetrabajo.pdf> [accessed: May 2024]

- Bardasi, E. and Wodon, Q. (2006). Measuring Time Poverty and Analyzing its Determinants: Concepts and Application to Guinea. *Economics Bulletin* 10(12):1-7.
- Bertrand, M., Kamenica, E. and Pan J. (2015). Gender identity and relative income within households. *The Quarterly Journal of Economics* 130(2): 571-614.
<https://doi.org/10.1093/qje/qjv001>
- Budlender, D. (2010). *Time Use Studies and Unpaid Care Work*. New York: Routledge.
- Chen, M., Vanek, J., Lund, F., Heintz, J., Jhabvala, R. and Bonner, C. (2005). *Progress of the World's Women 2005: Women, Work and Poverty*. New York: United Nations Women. Downloaded from: <https://www.unwomen.org/en/digital-library/publications/2005/1/progress-of-the-world-s-women-2005-women-work-and-poverty> [accessed: May 2024]
- Cook, S. and Razavi, S. (2012). *Work and Welfare Revisiting the Linkages from a Gender Perspective*. Geneva: United Nations Research Institute for Social Development. (UNRISD Research Paper No. 2012-7) Downloaded from: <https://www.unrisd.org/en/library/publications/work-and-welfare-revisiting-the-linkages-from-a-gender-perspective> [accessed: May 2024]
- Floro, M. (1995). Economic Restructuring, Gender and the Allocation of Time. *World Development* 23(11): 1913-1929.
[https://doi.org/10.1016/0305-750X\(95\)00092-Q](https://doi.org/10.1016/0305-750X(95)00092-Q)
- Floro, M. and Miles, M. (2003). Time use, work and overlapping activities: evidence from Australia. *Cambridge Journal of Economics* 27(6): 881-904.
<https://doi.org/10.1093/cje/27.6.881>
- Folbre, N. (2006). Measuring care: Gender, empowerment, and the care economy. *Journal of Human Development* 7(2): 183-199.
<https://doi.org/10.1080/14649880600768512>
- Frazis, H. and Stewart, J. (2012). How to Think About Time-Use Data: What Inferences Can We Make About Long- and Short-Run Time Use from Time Diaries? *Annals of Economics and Statistics* 105-106: 231-245.
- Hersch, J. and Stratton, L. S. (1997). Housework, Fixed Effects, and Wages of Married Workers. *Journal of Human Resources* 32(2): 285-307.
- Hook, J. L. (2017). Women's housework: New tests of time and money. *Journal of Marriage and Family* 79(1): 179-198. <https://doi.org/10.1111/jomf.12351>
- International Labour Organization (ILO). (2010). *Maternity at Work: A Review of National Legislation. Findings from the ILO Database of Conditions of Work and Employment Laws*. Second edition. Geneva: International Labour Organization. Downloaded from: <https://www.ilo.org/publications/maternity-work-review-national-legislation-second-edition> [accessed: May 2024]
- Ilahi, N. (2000). *The Intra-household Allocation of Time and Tasks: What Have We Learnt from the Empirical Literature?* Washington, DC: World Bank Group. (Working Paper Series No. 13, Report No. 20785). Downloaded from: <https://documents1.worldbank.org/curated/pt/582561468765855017/pdf/multi-page.pdf> [accessed: May 2024]
- Jiménez-Fontana, P. (2015). Analysis of non-remunerated production in Costa Rica. *The Journal of the Economics of Ageing* 5: 45-53.
<https://doi.org/10.1016/j.jeoa.2014.09.004>
- Jiménez-Fontana, P. (2016). Challenges to materialize the gender dividend time use profiles in Costa Rica. *Población y Salud en Mesoamérica* 13(2):67-91.
<http://dx.doi.org/10.15517/psm.v13i2.21748>

- Jiménez-Fontana, P. (2019). Gender Gaps in Costa Rica: Analysis of Time Use and Labor Income by Education. In: B.P. Urdinola and J.A. Tovar (eds.). *Time Use and Transfers in the Americas*. Springer, pp. 77-96. https://doi.org/10.1007/978-3-030-11806-8_5
- Juster, T. and Stafford, F. (1991). The Allocation of Time: Empirical Findings, Behavioral Models, and Problems of Measurement. *Journal of Economic Literature* 29(2): 471-522.
- Juster, T., Ono, H. and Stafford, F. (2003). An Assessment of Alternative Measures of Time Use. *Sociological Methodology* 33(1): 19-54. <https://doi.org/10.1111/j.0081-1750.2003.t01-1-00126.x>
- Kan, M. Y. and Pudney, S. (2008). Measurement Error in Stylized and Diary Data on Time Use." *Sociological Methodology*, 38(1): 101-132. <https://doi.org/10.1111/j.1467-9531.2008.00197.x>
- Kimmel, J., and Connelly, R. (2007). Mothers' Time Choices Caregiving, Leisure, Home Production, and Paid Work. *Journal of Human Resources* 42(3): 643-681. <https://doi.org/10.3368/jhr.XLII.3.643>
- Kizilirmak, B., and Memis, E. (2009). The Unequal Burden of Poverty on Time Use. New York: Levy Economics Institute. (Working Paper No. 572). Downloaded from: <https://www.levyinstitute.org/publications/the-unequal-burden-of-poverty-on-time-use> [accessed: May 2024]
- Kucera, D. and Roncolato, L. (2008). Informal Employment: Two Contested Policy Issues. *International Labour Review* 147(8):321-348. <https://doi.org/10.1111/j.1564-913X.2008.00039.x>
- Martínez Franzoni, J., and Sánchez Ancochea, D. (2014). The Double Challenge of Market and Social Incorporation: Progress and Bottlenecks in Latin America. *Development Policy Review* 32(3): 275-298. <https://doi.org/10.1111/dpr.12055>
- Martell, M. E., and Roncolato, L. (2020). Share of Household Earnings and Time Use of Women in Same-Sex and Different-Sex Households. *Eastern Economic Journal* 46: 414-437. <https://doi.org/10.1057/s41302-019-00145-4>
- Mitra, A. (2005). Women in the Urban Informal Sector: Perpetuation of Meagre Earnings. *Development and Change* 36(2): 291-316. <https://doi.org/10.1111/j.0012-155X.2005.00412.x>
- Qi, L., and Dong, X. (2018). Gender, Low-Paid Status, and Time Poverty in Urban China. *Feminist Economics* 24(2): 171-193. <https://doi.org/10.1080/13545701.2017.1404621>
- Rodgers, Y. V. and Meulen, D. (2023). Time Poverty: Conceptualization, Gender Differences, and Policy Solutions. *Social Philosophy and Policy* 40(1): 79-102. <http://dx.doi.org/10.2139/ssrn.4286895>
- Roncolato, L. and Radchenko, N. (2016). Women's Labor in South Africa: Time Spent Doing Simultaneous Paid and Unpaid Work. *International Journal of Time Use Research* 13(1): 58-90. <https://doi.org/10.13085/eIJTUR.13.1.58-90>
- Sánchez-Hernández, L. and Trejos-Solórzano, J. D. (2014). *Atlas de Carencias Críticas en Costa Rica, a la luz del Censo del 2011*. Costa Rica: Universidad de Costa Rica.
- Schneider, D., and Hastings, O.P. (2017). Income Inequality and Household Labor. *Social Forces* 96(2): 481-506. <https://doi.org/10.1093/sf/sox061>
- Trejos, J. D., Mata, C. and Oviedo, L. (2014). Gender Equity in Taxation in Latin America and the Caribbean Project: the case of Costa Rica. (Unpublished manuscript). Washington DC: Inter-American Development Bank.

United Nations. (2013). *A Look at Grants: Support and Burden for Women. Annual Report 2012*. Chile: Gender Equality Observatory of Latin America and the Caribbean. Downloaded from: <https://oig.cepal.org/en/documents/gender-equality-observatory-latin-america-and-caribbean-annual-report-2012-look-grants> [accessed: May 2024]

Wittenberg, M. (2009). *Lazy Rotten Sons? Relatedness, Gender and the Intra-Household Allocation of Work and Leisure in South Africa*. Southern Africa Labour and Development Research Unit, University of Cape Town. (SALDRU Working paper No. 28). Downloaded from: <http://hdl.handle.net/11090/27> [accessed: May 2024]

Appendix

Table A1. Descriptive statistics of adult men and women across household types in Costa Rica, 2014

Variable\Household Type	Single adult		Couple adult - 2 adults only		Multiple adults with couple		Multiple adults without couple	
	Men	Women	Men	Women	Men	Women	Men	Women
Observations	734	851	1,991	1,983	7,977	7,262	2,595	4,038
Age	51.85 (16.94)	56.64 (16.87)	50.96 (16.04)	47.33 (15.26)	40.14 (16.29)	38.90 (15.65)	36.71 (17.12)	44.73 (18.99)
Married or common union	0.06 (0.23)	0.03 (0.18)	0.99 (0.08)	0.99 (0.08)	0.66 (0.47)	0.72 (0.45)	0.11 (0.31)	0.08 (0.28)
Previously married	0.53 (0.50)	0.69 (0.46)	0.00 (0.07)	0.01 (0.08)	0.04 (0.19)	0.05 (0.22)	0.21 (0.41)	0.49 (0.50)
Primary school completed	0.41 (0.49)	0.39 (0.49)	0.47 (0.50)	0.44 (0.50)	0.49 (0.50)	0.46 (0.50)	0.48 (0.50)	0.43 (0.50)
Secondary school completed	0.09 (0.29)	0.10 (0.30)	0.11 (0.31)	0.13 (0.34)	0.16 (0.37)	0.17 (0.37)	0.18 (0.38)	0.17 (0.37)
Completed at least some undergraduate	0.15 (0.36)	0.18 (0.38)	0.15 (0.36)	0.18 (0.38)	0.17 (0.37)	0.20 (0.40)	0.16 (0.37)	0.17 (0.37)
Completed at least some postgraduate	0.02 (0.13)	0.02 (0.15)	0.02 (0.14)	0.02 (0.14)	0.01 (0.12)	0.01 (0.12)	0.01 (0.09)	0.01 (0.11)
Children 0-2 years old in household	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.17 (0.37)	0.19 (0.40)	0.09 (0.28)	0.15 (0.36)
Children 3-6 years old in household	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.22 (0.42)	0.25 (0.44)	0.11 (0.31)	0.20 (0.40)
Children 7-11 years old in household	0.00 (0.06)	0.08 (0.28)	0.13 (0.33)	0.13 (0.33)	0.26 (0.44)	0.28 (0.45)	0.13 (0.33)	0.22 (0.41)
Proxy survey respondent	0.15 (0.36)	0.16 (0.36)	0.53 (0.50)	0.32 (0.47)	0.72 (0.45)	0.48 (0.50)	0.71 (0.45)	0.45 (0.50)

Source: Authors' elaboration with ENAHO 2014 data.

Note: Standard deviation in parentheses.

Table A2. Predicting women’s and men’s time spent on unpaid housework and caregiving by income quintiles using individual and time fixed effects, 2011-2014

	(1)	(2)	(3)	(4)
	Women’s weekly housework hours	Men’s weekly housework hours	Women’s weekly caregiving hours	Men’s weekly caregiving hours
Household Income Quintiles				
Quintile 2	-0.366 (0.409)	-0.705*** (0.210)	-0.054 (0.383)	-0.164 (0.162)
Quintile 3	-0.910** (0.444)	-0.848*** (0.225)	-0.387 (0.416)	-0.474*** (0.174)
Quintile 4	-0.743 (0.497)	-1.033*** (0.248)	-0.812* (0.466)	-0.532*** (0.192)
Quintile 5	-0.675 (0.595)	-0.883*** (0.295)	-0.912 (0.558)	-0.628*** (0.227)
Age	0.555** (0.268)	-0.050 (0.125)	-0.226 (0.251)	0.046 (0.096)
Age squared	-0.006** (0.002)	0.001 (0.001)	0.002 (0.002)	-0.001 (0.001)
Married or common union	1.827** (0.891)	-0.188 (0.507)	0.465 (0.835)	-0.029 (0.391)
Previously married	-1.635** (0.669)	-0.311 (0.429)	-0.207 (0.628)	-0.210 (0.331)
“Household head” or part of the “primary couple”	0.171 (0.884)	-0.070 (0.491)	1.113 (0.829)	0.238 (0.379)
Secondary school completed	0.532 (0.721)	-0.405 (0.344)	0.954 (0.676)	0.139 (0.266)
Completed at least some undergraduate	0.099 (0.972)	-0.494 (0.468)	0.852 (0.911)	-0.082 (0.362)
Completed at least some postgraduate	-0.498 (1.848)	-0.028 (0.869)	-0.457 (1.733)	0.863 (0.670)
Children 0-2 years old in household	0.393 (0.488)	-0.141 (0.252)	9.689*** (0.458)	1.951*** (0.195)
Children 3-6 years old in household	0.144 (0.503)	-0.425 (0.260)	4.800*** (0.472)	0.360* (0.201)
Children 7-11 years old in household	-0.066 (0.475)	-0.533** (0.248)	1.993*** (0.446)	0.229 (0.192)
Household Type				
Couple adult	3.266*** (1.150)	-3.711*** (0.666)	-1.638 (1.078)	-0.021 (0.514)
Multiple adults w/couple	3.315*** (1.079)	-3.723*** (0.647)	1.585 (1.012)	0.807 (0.499)
Multiple adults w/o couple	2.538*** (0.843)	-2.408*** (0.612)	1.255 (0.791)	0.615 (0.473)

	(1)	(2)	(3)	(4)
	Women's weekly housework hours	Men's weekly housework hours	Women's weekly caregiving hours	Men's weekly caregiving hours
Proxy respondent	-3.416*** (0.257)	-1.936*** (0.131)	-2.155*** (0.241)	-0.880*** (0.101)
Observations	56,265	53,513	56,265	53,513
Individual FE	yes	yes	yes	yes
Time FE	yes	yes	yes	yes
F-statistics	14.825	14.828	29.741	10.658
p-value	0.000	0.000	0.000	0.000

Source: authors' calculations with ENAHO 2011-2014 data.

Notes: First income quintile is the income category of reference. Quintiles were defined based on the monthly gross household income of 2014. Standard errors are in parentheses. Statistical significance level: * p<.10, ** p<.05, *** p<.01