Gendered Time Allocation Within the Household: individual and social aspects

Maria Victoria Garcia Rosa*
Flaviane Souza Santiago †
Kênia Barreiro de Souza ‡

Abstract

Gender-based time allocation in Brazil reveals women predominantly handle household chores while men focus on paid labor. Analyzing couples' time use through Seemingly Unrelated Regressions (SUR), our study confirms gender disparities. Factors like education, young children's presence, and female unemployment heavily influence women's time allocation. We employ a framework categorizing families into egalitarian, traditional, and non-traditional based on domestic responsibility distribution. Even in more egalitarian setups, women's involvement in domestic activities is intricately linked to maternal roles and educational attainment. This underscores the complex interplay between gender dynamics, familial structures, and socio-economic factors in shaping time allocation within households.

Keywords: Household time allocation; Labor market; Gender roles; Domestic chores; Seemingly Unrelated Regressions.

JEL Code: D10; D13; J16.

*Ph.D. student in Economics at the Federal University of Juiz de Fora.
†Professor at the Department of Economics at the Federal University of Juiz de Fora.
‡Professor at the Department of Economics at the Federal University of Paraná.

1 INTRODUCTION

Until 1950, women carried out activities of goods production and services almost exclusively within the household. From that decade onward, an exponential increase in female labor force participation began. This change was driven by factors such as increased educational level, reduced fertility, and the urbanization process, among others (BIANCHI et al., 2000; MAIA; LIRA, 2002; GOLDIN, 1990; FERRANT; PESANDO; NOWACKA, 2014; BROWNING; CHIAPPORI; WEISS, 2014).

Despite the greater female labor force participation, no vast changes were observed regarding the time allocated to household chores, which continue to be carried out mainly by women (MELO; CONSIDERA; SABBATO, 2007; MACIEL, 2008; DEGRAFF; ANKER, 2015). According to the 2023 Continuous National Household Sample Survey (PNADC), carried out by the Brazilian Institute of Geography and Statistics (IBGE) in Brazil, women spend approximately twice as much time on household chores as men. Similar allocations are observed for the United States (BIANCHI et al., 2000; BRINES, 1994; GREENSTEIN, 2000).

The Organization for Economic Co-operation and Development (OECD) says that the analysis of the intrahousehold division of domestic chores is an important factor in helping to understand inequalities in the labor market (FERRANT; PESANDO; NOWACKA, 2014). The division of intrahousehold time may be related to gender norms, where there is a pattern of what is considered female or male activities (AGARWAL, 1997; PEARSE; CONNELL, 2016).

Several studies have elucidated the complex dynamics of time allocation within households. Several studies have shown that the presence of children, especially preschool-aged children, can change household dynamics (LUNDBERG, 1988; APPS; REES, 1996; FENGDAN et al., 2016). The effect observed is a high increase in the time allocated to domestic chores by women. Other important factors that affect household time allocation are age, education, wage, and educational differences between spouses (APPS; REES, 1996; DONNI; MOREAU, 2007; FENGDAN et al., 2016).

Among the analyses carried out for Brazil, the literature has evaluated couples' time allocation to home production or the labor market, and the analysis of household chores has been significantly limited. According to Madalozzo, Martins and Shiratori (2010), one important determinant that contributes to reducing the time allocated by women to domestic chores is family income. On the other hand, there are some papers analyzing time allocation in the labor market. The main variables are region, educational level, the presence of children in the household, the age difference between spouses, the sex ratio[1], and wage (MACIEL, 2008; FERNANDES; SCORZAFAVE, 2009; GONÇALVES; MENEZES-FILHO, 2015; SILVA; CUNHA, 2020).

[1] The sex ratio in Fernandes and Scorzafave (2009) is defined as the ratio between the total of men with the same characteristics as the husband and the corresponding total of men and women from a given region.

Bearing in mind the disparities related to the time allocation at home and its impacts on aspects of female work, this study aims to analyze the determining factors of this allocation between domestic chores and the labor market. To achieve this objective, this paper uses PNADC data from 2016 to 2019. The theoretical framework on which this paper is based is developed by Donni and Matteazzi (2018), who developed a collective household model that allows for nonparticipation in the labor market. This framework was chosen since there is a high female unemployment rate in Brazil. It also makes use of the Seemingly Unrelated Regression (SUR) methodology.

The analysis was carried out for Brazil. The country has the highest Gross Domestic Product (GSD) in Latin America and a Human Development Index of 0.754 according to the Atlas of Human Development in Brazil (2021). However, despite these favorable indicators, the Gender Inequality Index (GII) for the country is 0.390, ranking 94th among 170 nations (PNUD, 2021). This index analyses gender inequality by considering factors such as health, empowerment, and the labor market, indicating that there are still severe barriers to overcome.

In contrast to previous studies, evaluating the theme of domestic tasks or the job market for Brazil, as in Maciel (2008), Fernandes and Scorzafave (2009), and Silva and Cunha (2020), this paper endeavors to enrich the scholarly discourse on the subject. A distinctive facet of our approach lies in acknowledging that the decision-making process regarding time allocation for household chores and labor market engagement is interlinked. In this regard, we align ourselves with the conceptual framework presented by Lahga and Moreau (2007), originally formulated for Germany. In addition, an analysis is also performed considering gender norms, where we analyze the determinants considering nontraditional, egalitarian, and traditional families. Here, women perform fewer domestic chores in nontraditional families. In egalitarian families, women perform between 40% and 60% of domestic chores, while in traditional households, women are responsible for more than 60% of domestic chores.

2 METHODOLOGY

The intrahousehold decision of the couple's labor supply and household chores can be estimated using the Donni and Matteazzi (2018) collective decision model, in which the family is composed of two individuals with rational and potentially different preferences. Decisions are made through interactions between the couple and produce responses that are Pareto efficient. Some exogenous factors can affect the family's decision process, named distribution factors by Bourguignon et al. (1993).

In the present work, the distribution factors used are the difference between the couple's years of study, used in works such as Maciel (2008), Gonçalves and Menezes-Filho (2015) and Fengdan et al. (2016) and the age difference, used in Vermeulen (2005), Maciel (2008), Fernandes and Scorzafave (2009) and Hendy and Sofer (2009). Differences in the couple's educational

level can affect the intrafamily decision-making process but not individual preferences since the individual's educational level itself is an individual choice, but not the spouse's educational level. In the present work, the difference in education increases with women's education level, thus, it is expected that it will affect women's labor supply in a positive way and men's labor supply negatively. When there is an increase in the educational difference, there is an increase in the bargaining power of women in the household. In turn, the age difference can be analyzed in terms of the marital market (BERGSTROM; LAM, 1991). The variable increases with the increase in the wife's age compared to her husband, thus, if the woman is older in comparison to her husband, there is a reduction in her bargaining power in the household, since, according to the marriage market, there is a reduction in your opportunity to get out of the marriage (WOOLLEY, 2003).

Considering that there is a simultaneity in the intrafamily decision of labor supply, the estimation of Seemingly Unrelated Regression (SUR) is carried out to verify the determinants of labor supply and time allocation in domestic chores. The SUR model, developed by Zellner (1962), considers that the decisions of one partner have effects on the decisions of the other, even if there is no information available that makes it possible to measure this relationship.

The SUR model can be represented as follows:

$$Y_j = X_j\beta_j + \varepsilon_j \;\; j = 1, 2, ..., k \tag{1}$$

where

$$\varepsilon_j = \left[\varepsilon_1^{'}, \varepsilon_2^{'}, ..., \varepsilon_k^{'}\right]$$

and

$$E\left[\varepsilon_j\right] = 0$$

with $E\left[\varepsilon_{jt}\varepsilon_{ls}^{'}\right] = \sigma_{jl}$ if $t = 0$, and 0, otherwise, in addition $E\left[\varepsilon_j\varepsilon_l^{'}\right] = \sigma_{jl}I_T$.

It is assumed that, to estimate Y_j, a total of T observations are used, making it possible to estimate the parameters β_j of k equations, using the set X_j of independent variables. Each equation has Z_k regressors for a total of $Z = \sum_{j=1}^{k} Z_j$. Furthermore, the assumption is also made that the data is well behaved[2] and that the errors (ε_j) are not correlated.

In the present work, it is possible to specify four regressions ($k = 4$) to estimate the intrahousehold time allocation according to the representation given by (1), two for the time allocated to household chores and two for the time allocated to the labor market.

[2] For more details on well-behaved data, see Greene (2003).

Some endogeneity issues need to be addressed. For working individuals, hourly wages are computed as the ratio of labor earnings to hours of work. For nonworking individuals, wages are missing and have to be imputed from a wage equation. To reduce potential endogeneity, the full sample is used in the application of the Heckman (1979) procedure, after this, the wages of all individuals are predicted. After this, we replace the missing values for the predicted wages.

3 DATA AND SAMPLE

The method chosen to collect time use is determined depending on the survey purpose. Some ways to collect the data are through direct observation, self-reports, or interviews. Each of the instruments used has advantages and disadvantages (DESA, 2004). The database used in the present work is the Continuous National Household Sample Survey (PNADC) of the Brazilian Institute of Geography and Statistics (IBGE), from 2016 to 2019. The PNADC sample is constructed as a rotating panel, where the household is interviewed for one month and leaves the sample for two consecutive months, this procedure is repeated five times. Although the survey is not a time diary, it has stylized questions about the time allocated to household chores and caring for people. Thus, respondents are asked how much time was allocated to household chores or caring for people in the last week. This question was asked only at the time of the last interview and is available only for 2016-2019, which justifies the period chosen.

Among the problems generated by this type of questionnaire, stylized questions may underestimate the time women spend caring for children since people may not classify it as work or because it is reported only when it is performed as the main activity. Additionally, respondents may have difficulty remembering what they have done during the period mentioned in the question and may overestimate activities that are perceived as socially "good" or acceptable (MATULEVICH; VIOLLAZ, 2019; SUH, 2016; FLORO; MILES, 2003). Another limitation of the PNADC is that each household may have only one respondent, which means that one person could answer the questionnaire for another. Thus, there may be an under-reporting of hours for the non-responders. Despite the limitations mentioned, the PNADC is the only database that has information about the time allocated to household chores in Brazil.

We selected couples in which both members were between 20 and 60 years old. The age range of 20 to 60 was chosen to avoid bias caused by the fact that very young couples may be studying and, therefore, not working in the market. In addition, couples older than 60 years are more likely to be retired and, therefore, are not offering market work hours. Finally, people who answered that they did not have a job but had a positive wage, who had a job but did not have a wage, and couples who declared zero hours in domestic chores and the labor market were removed from the sample.

We excluded households with more than one family living together, given that the collective model is directed to only two decision-makers. The analyses are carried out for families

with and without children as proposed by Blundell, Chiappori and Meghir (2005), to verify the robustness of the results since children can be considered a public good within the household, and these goods are not separable in the couple utility functions.

Table 1 presents the descriptive statistics of data. The following can be observed: a total of 224,048 couples were included, without sample weight. Before sample selection, 370,952 couples were included. When considering domestic chores, while men allocate, on average, 9.82 weekly hours on it, the time allocated by women in this activity is approximately 19.662 hours per week. In the labor market, men work approximately 43.41 hours a week while women dedicate 37.73 hours in the labor market.

Table 1 – Descriptive Statistics

Variable	Mean	SD	Min.	Max.	Mean	SD	Min.	Max.	Dif.
	Men				Women				
Hou_dc[1]	9,8205	8,8789	0	120	19,662	12,513	0	120	-13.7997***
Hou_lm[2]	43,418	10,320	1	120	37,737	12,052	1	120	16.8170***
Age	41,193	9,212	20	60	38,583	8,927	20	60	3.0659***
Household's head	0,721	0,448	0	1	0,279	0,448	0	1	0.4689***
Incomplete Primary	0,236	0,425	0	1	0,160	0,366	0	1	0.0746***
Primary	0,094	0,292	0	1	0,075	0,263	0	1	0.0066***
Incomplete High School	0,058	0,233	0	1	0,051	0,220	0	1	-0.0036***
High School	0,347	0,476	0	1	0,358	0,479	0	1	-0.0344***
Incomplete Undergraduate	0,047	0,211	0	1	0,052	0,223	0	1	-0.0087***
Undergraduate	0,204	0,403	0	1	0,295	0,456	0	1	-0.0514***
White	0,497	0,500	0	1	0,514	0,500	0	1	-0.0092***
Urban	0,912	0,283	0	1	0,912	0,283	0	1	-
Nº of children	1,288	1,004	0	10	1,288	1,004	0	10	-
Teenager	0,327	0,469	0	1	0,327	0,469	0	1	-
Teenager_f	0,177	0,381	0	1	0,177	0,381	0	1	-
Children≤ 3	0,169	0,374	0	1	0,169	0,374	0	1	-
Elderly	0,013	0,113	0	1	0,013	0,113	0	1	-
Income	19,277	25,783	0,100	1.114,022	15,644	20,360	0,060	1.082,128	2.3577***
Income[2]	1.036,353	7.183,056	0,010	1.241.045	659,269	6.202,998	0,004	1.171.001	377,083***
Non-Work Income	400.3342	2127.124	0	178243.5	265.3719	1308.188	0	111402.2	124.8825***
Unemployment Rate	0.0409	0.0324	0	0.3333	0.0409	0.0324	0	0.3333	-
Age Dif.	-2,610	5,847	-37	35	-2,610	5,847	-37	35	-
Education Dif.	1,041	3,271	-16	16	1,041	3,271	-16	16	-
Northeast	0,199	0,399	0	1	0,199	0,399	0	1	-
Southeast	0,464	0,499	0	1	0,464	0,499	0	1	-
South	0,187	0,390	0	1	0,187	0,390	0	1	-
Midwest	0,090	0,286	0	1	0,090	0,286	0	1	-
2017	0,248	0,432	0	1	0,248	0,432	0	1	-
2018	0,254	0,435	0	1	0,254	0,435	0	1	-
2019	0,255	0,436	0	1	0,255	0,436	0	1	-
Observations	224,048*								

Note: 1: Total hours dedicated to caring for people and/or household chores in the week. 2: Weekly working hours spent on all jobs.*Observations are presented as the number of couples without sample weight.
Source: Survey results based on PNADC data, 2016-2019 (IBGE, 2020).

4 RESULTS AND DISCUSSION

For adequate use of the SUR method, the estimated equation errors cannot be correlated. Thus, to analyze the viability of the model, the error correlation matrix was estimated and the Breusch-Pagan test was performed, which must be significant to reject the null hypothesis that the covariance matrix is diagonal (BREUSCH; PAGAN, 1980). The test results, presented in Table 13 in Appendix A, are significant at the 1% level, supporting the suitability of the SUR

method.

The presence of children at home, especially young children, has direct implications for the use of parents' time. This circumstance may incentivize women to specialize in household chores, reducing their time dedicated to the labor market compared to men. Additionally, children are regarded as a form of public good within the household, and these goods are inseparable in couples' utility functions (BLUNDELL; CHIAPPORI; MEGHIR, 2005). To ensure the robustness of our results, we also conduct an analysis exclusively focusing on childless couples, and the outcomes of this analysis are presented in Section 4.1.2. Furthermore, we introduce a dummy variable with a value of one for couples with children aged three years or younger [3].

Table 2 presents the results obtained with the SUR model and the coefficients, in general, were significant. The sample size was 224,047 couples. An increase in educational level contributes to a decrease in the time dedicated by women to domestic chores and to an increase in the time allocated to the labor market. For men, the higher the educational level is, the greater the amount of time dedicated to both activities. These results corroborate the results obtained in Madalozzo, Martins and Shiratori (2010) for household chores and in Maciel (2008) and Silva and Cunha (2020) for the labor market, where the higher the educational level is, the less time is spent on household chores and more time is spent in the labor market.

Being white reduces the time dedicated to domestic chores and increases the time spent in the labor market for both women and men. Similar results are obtained for women living in urban areas. On the other hand, men living in urban areas increase their time spent on domestic chores. The higher the number of children in the household is, the more time women spend on domestic chores and the less time spent in the market. For men, the results are significant only for increasing time spent in the labor market and are similar to the results of Apps and Rees (1996), Lahga and Moreau (2007), Fengdan et al. (2016), Lundberg (1988) and Silva and Cunha (2020). Additionally, the presence of children aged three years or younger increases the time assigned to domestic chores for both women and men. However, only for women is there a reduction in the time spent committed to the labor market.

The presence of children aged three years or younger amplifies the time that women allocate to domestic chores by approximately 31%. In parallel, men experience an increase of approximately 25% in their engagement with domestic tasks under the same circumstances. For the time allocated to the labor market, women reduce it by approximately 47%. The presence of a teenager in the household contributes to reducing the time devoted to domestic chores and increasing the time allocated to the labor market.

Concerning the presence of an elderly person in the household, there is a small increase

[3] The age of three years is defined once, since 2013, the mandatory age for registration of children in Basic Education in Brazil is 4 years old, according to Law nº 12.796 and, although is not possible to observe which child is attending school, the age cutoff partially captures this effect.

in the amount of time dedicated to domestic chores and a greater reduction in the amount of time devoted to the labor market for the couple. These results may be explained by the fact that people do not consider caring for elderly people as domestic chores. Finally, the female unemployment rate in the stratum contributes to the increase in time allocated to domestic chores and reduces the amount of time dedicated to the labor market for both men and women.

Table 2 – Couple's time allocation

	Women		Men	
Variables	Chores	Market	Chores	Market
Age	0.0111***	-0.0141***	-0.0310***	-0.158***
	(0.00406)	(0.00533)	(0.00249)	(0.00446)
Household's head	0.103	0.963***	0.339***	0.479***
	(0.0704)	(0.0921)	(0.0435)	(0.0777)
Incomplete Primary	1.205***	3.503***	0.0682	3.773***
	(0.229)	(0.311)	(0.112)	(0.211)
Primary	0.609**	7.130***	0.715***	5.915***
	(0.247)	(0.334)	(0.126)	(0.235)
Incomplete High School	0.333	7.759***	0.997***	5.892***
	(0.260)	(0.352)	(0.137)	(0.255)
High School	-0.661***	11.85***	1.345***	6.849***
	(0.237)	(0.319)	(0.121)	(0.224)
Incomplete Undergraduate	-2.460***	14.62***	2.081***	6.773***
	(0.275)	(0.371)	(0.152)	(0.283)
Undergraduate	-5.517***	23.90***	1.899***	8.775***
	(0.254)	(0.341)	(0.136)	(0.251)
White	-0.181***	1.273***	-0.525***	1.486***
	(0.0667)	(0.0906)	(0.0405)	(0.0762)
Urban	-0.877***	6.121***	0.536***	2.573***
	(0.0980)	(0.128)	(0.0604)	(0.108)
Nº of children	1.627***	-1.292***	0.0156	0.0875**
	(0.0360)	(0.0471)	(0.0222)	(0.0396)
Teenager	-1.232***	2.328***	-0.763***	1.078***
	(0.0977)	(0.128)	(0.0603)	(0.108)
Teenager_f	-0.877***	0.415***	-0.335***	0.00237
	(0.108)	(0.142)	(0.0669)	(0.120)
Children≤3	5.850***	-4.745***	2.317***	-0.132
	(0.0913)	(0.120)	(0.0564)	(0.101)
Elderly	0.959***	-3.913***	1.024***	-4.462***
	(0.223)	(0.292)	(0.138)	(0.246)
Work income_m	-0.0155***	0.00526***	-0.0204***	-0.0327***
	(0.00150)	(0.00196)	(0.00124)	(0.00227)
Work income_w	0.0306***	-0.307***	-0.000700	0.0352***
	(0.00325)	(0.00434)	(0.00147)	(0.00264)
Work income^2	-8.73e-05***	0.000579***	1.28e-05***	2.99e-05***
	(8.80e-06)	(1.20e-05)	(1.93e-06)	(3.65e-06)
Non Work Income	4.41e-05***	-0.000401***	9.52e-05***	-0.000798***
	(1.02e-05)	(1.34e-05)	(6.32e-06)	(1.13e-05)
Unemployment Rate	8.656***	-41.07***	3.644***	-12.09***
	(1.009)	(1.322)	(0.623)	(1.114)
Education Dif.	0.0349***	-0.0841***	0.0754***	0.189***
	(0.0101)	(0.0133)	(0.00651)	(0.0117)
Age Dif.	-0.0150***	0.0957***	-0.0206***	-0.0830***
	(0.00548)	(0.00718)	(0.00346)	(0.00618)
Northeast	2.654***	0.285*	-0.454***	-1.945***
	(0.130)	(0.170)	(0.0803)	(0.143)
Southeast	3.687***	4.199***	1.022***	2.275***
	(0.126)	(0.165)	(0.0779)	(0.139)
South	1.297***	5.693***	1.345***	2.105***
	(0.143)	(0.188)	(0.0886)	(0.159)
Midwest	-0.0146	3.999***	-0.784***	2.895***
	(0.157)	(0.205)	(0.0968)	(0.173)
2017	0.143	0.201*	0.313***	-0.429***
	(0.0873)	(0.114)	(0.0539)	(0.0964)
2018	0.824***	0.113	0.465***	-0.212**
	(0.0874)	(0.114)	(0.0540)	(0.0964)
2019	0.992***	0.196*	0.564***	0.00762
	(0.0880)	(0.115)	(0.0543)	(0.0971)
Constant	18.87***	10.08***	8.948***	35.02***
	(0.317)	(0.422)	(0.181)	(0.328)
Observations	224,047	224,047	224,047	224,047
R^2	0.079	0.154	0.035	0.079

Note: *Significant at 10%; **Significant at 5%; ***Significant at 1%. Observations are represented as the number of couples, with sample expansion.
Source: Survey results based on PNADC data, 2016-2019 (IBGE, 2022).

4.1 Heterogeneity Analysis

In understanding the intricate dynamics shaping the allocation of time within couples between household responsibilities and participation in the labor market, exploring heterogeneity becomes pivotal. This section delves into the diverse facets influencing this allocation. By dissecting the impact of societal expectations and norms related to gender, we aim to uncover the nuanced effects on time allocation. Additionally, this analysis extends beyond gender roles, examining variations among childless couples, single individuals, households devoid of elderly members – considering the influential role of elderly people in domestic chores and childcare – and households where at least one member is engaged in informal work, a sector known for its distinctive flexibility in time management.

4.1.1 Gender Roles

The division of intrahousehold time allocation may also be related to gender norms, where there is a pattern of what is considered female and male activities (AGARWAL, 1997; PEARSE; CONNELL, 2016). Thus, the variables that determine couples' time allocation may be different between households with very distinct time allocation patterns. Factors such as similar incomes between couples, higher education levels, and low influence of gender norms contribute to household task allocation being more egalitarian or nontraditional (SEIZ, 2021; AMÁBILE, 2022).

The household division according to gender norms is carried out as follows: initially, the total time the household spends on household chores is counted, adding the time each individual in the couple allocates to such activity. Households in which the woman performs up to 40% of domestic activities are considered nontraditional; households in which the woman performs between 40% and 60% of domestic activities are considered egalitarian, and households in which the woman performs more than 60% of domestic activities are considered as traditional. According to this classification, approximately 72.83% of the sample comprises traditional households, approximately 22.90% of the households are egalitarian, and 4.26% of the households are nontraditional.

Table 3 presents the descriptive statistics by household type according to the gender norms defined above. For traditional households, men spend approximately 7 hours a week on domestic chores while women spend approximately 26 hours. When considering egalitarian households, both men and women dedicate approximately 16 weekly hours to this activity. Finally, for nontraditional households, men spend close to 17 hours on domestic chores and women spend approximately 6 hours a week. These descriptive results suggest that the increase observed in the men's domestic chores, and the decrease in time devoted to the labor market are small and not proportional even in more egalitarian households.

Table 3 – Descriptive statistics by household type

	Traditional		Egalitarian		nontraditional	
	Mean		Mean		Mean	
Variables	Men	Women	Men	Women	Men	Women
Hou_dc	7.3714	26.6130	16.1347	16.9878	17.8458	6.7406
Hou_lm	38.1303	16.1174	34.6533	30.9151	29.63043	31.9057
Age	41.7247	38.5733	41.2228	38.4009	42.3236	39.3830
Household's head	0.7307	0.2692	0.7371	0.2628	0.7928	0.2071
Incomplete Primary	0.3909	0.3142	0.2514	0.1843	0.2792	0.1978
Primary	0.1013	0.0988	0.0918	0.0750	0.1013	0.0777
Incomplete High School	0.0592	0.0654	0.05480	0.0520	0.0577	0.0515
High School	0.2741	0.3200	0.3270	0.3297	0.3140	0.3253
Incomplete Undergraduate	0.0255	0.03577	0.0491	0.0543	0.0455	0.0487
Undergraduate	0.0996	0.1364	0.1983	0.2865	0.1717	0.2780
White	0.3884	0.3901	0.4573	0.4850	0.4247	0.4640
Urban	0.6980	0.6980	0.8176	0.8176	0.8226	0.8226
Nº of children	1.5094	1.5094	1.2284	1.2284	1.2082	1.2082
Teenager	0.3527	0.3527	0.2844	0.2844	0.2909	0.2909
Teenager_f	0.1927	0.1927	0.1528	0.1528	0.1523	0.1523
Children≤3	0.2088	0.2088	0.1826	0.1826	0.1573	0.1573
Elderly	0.02106	0.0210	0.0219	0.0219	0.0246	0.0246
Work income	15.0092	11.6905	18.2764	15.5152	18.4541	16.0068
Work Income^2	610.5552	284.6467	944.7211	614.3798	1086.3560	656.894
Non-Work Income	310.9447	259.4503	560.9162	260.7960	733.7740	277.1732
Unemployment Rate	0.0409	0.0409	0.0410	0.04109	0.0407	0.0407
Age Dif.	-3.1514	-3.1514	-2.8219	-2.8219	-2.9406	-2.9406
Education Dif.	1.0215	1.0215	1.0084	1.0084	1.2212	1.2212
Northeast	0.3354	0.3354	0.2234	0.2234	0.2703	0.2703
Southeast	0.2660	0.2660	0.2946	0.2946	0.2709	0.2709
South	0.1682	0.1682	0.2460	0.2460	0.2045	0.2045
Midwest	0.1101	0.1101	0.1092	0.1092	0.1099	0.1099
2017	0.2522	0.2522	0.2549	0.2549	0.2567	0.2567
2018	0.2512	0.2512	0.2502	0.2502	0.2117	0.2117
2019	0.2416	0.2416	0.2576	0.2576	0.2180	0.2180
Observations	163,014	163,014	52,929	52,929	8,104	8,104

Source: Survey results based on PNADC data, 2016-2019 (IBGE, 2020).

Tables 4 to 6 present the results for couples by household type. The results for our complete sample and for traditional households are quite similar (which is expected since most of the families are traditional). Regarding educational level, an undergraduate degree contributes to a decrease in the amount of time dedicated by women to home production and to an increase in the amount of time allocated to the labor market. For men, the higher the educational level is, the greater the amount of time dedicated to both activities.

The main differences between genders and across household types are concentrated on variables directly related to care, i.e., number of children, children under the age of three years, teenagers, and elderly individuals. Again, for our complete sample and for traditional households, the results are similar. With the increase in the number of children, women's work in domestic chores increases, and their time in the labor market decreases. With an increase in the number of children, men also decrease their market labor supply and increase their domestic labor (but approximately 13 times less than women). If the child is a teenager, both, men, and women can reduce household chores (but not less than the effect of having one child). For couples, having a

teenage child is also significant for increasing the amount of time devoted to the labor market. When the teenager is a female, all these effects intensify, indicating that female teenagers spend more time on household chores than do their male counterparts.

The female unemployment rate by stratum has also a significant contribution to the couple's time allocation. For women, there is an increase the in time allocated to domestic chores and a reduction in the labor market of approximately 4.2 hours a week. For men, there is also an increase in the time dedicated to home production and a reduction in the time spent on the labor market.

Regardless of the female unemployment rate, for all the models, the variable with the most important effect on time allocation is the presence of at least one child under three years old. For our complete sample, having a child under this age increases household chores by approximately 5 and 2 hours for women and men respectively. At the same time, women reduce the amount of time devoted to the labor market by approximately 4 hours but this result is not significant for men. When we consider traditional households, these results intensify, women, with at least one child under three, spend approximately 5 hours and 96 minutes more on household chores, while their partners increase on average 2 hours on the same tasks. For hours allocated to the labor market, the effect for women is a decrease of approximately 4 hours and 55 minutes, whereas it is not significant for men. Like in the complete sample, the presence of elderly people results in a small increase in household chores but reduces the amount of time devoted to the labor market for both, men, and women. This result reinforces the indication that people may not see caring for elderly individuals as a household chore, however, this may be the case, as they are reducing the time devoted to the labor market.

Table 4 – Couples' time allocation in traditional households

	Women		Men	
Variables	Chores	Market	Chores	Market
Age	-0.00945*	0.0602***	-0.0353***	-0.135***
	(0.00489)	(0.00617)	(0.00208)	(0.00495)
Household's head	-0.425***	1.359***	0.0733**	0.696***
	(0.0829)	(0.104)	(0.0354)	(0.0843)
Incomplete Primary	0.911***	3.131***	-0.0298	4.009***
	(0.248)	(0.335)	(0.0840)	(0.215)
Primary	0.558**	6.222***	0.325***	6.413***
	(0.269)	(0.362)	(0.0957)	(0.243)
Incomplete High School	0.355	6.794***	0.375***	6.446***
	(0.284)	(0.382)	(0.105)	(0.267)
High School	-0.378	10.78***	0.504***	7.326***
	(0.260)	(0.346)	(0.0926)	(0.232)
Incomplete Undergraduate	-2.009***	14.34***	0.713***	7.856***
	(0.310)	(0.415)	(0.123)	(0.312)
Undergraduate	-4.994***	25.21***	0.812***	9.326***
	(0.287)	(0.380)	(0.108)	(0.268)
White	-0.164**	1.576***	-0.207***	1.201***
	(0.0767)	(0.104)	(0.0324)	(0.0831)
Urban	-0.178	5.008***	0.0724	3.304***
	(0.110)	(0.139)	(0.0470)	(0.112)
Nº of children	1.374***	-0.979***	0.100***	-0.0816*
	(0.0418)	(0.0525)	(0.0178)	(0.0423)
Teenager	-1.362***	2.607***	-0.475***	0.989***
	(0.113)	(0.142)	(0.0483)	(0.115)
Teenager_f	-0.801***	0.285*	-0.294***	-0.203
	(0.125)	(0.156)	(0.0533)	(0.127)
Children≤3	5.962***	-4.552***	2.004***	-0.146
	(0.108)	(0.135)	(0.0460)	(0.109)
Elderly	0.726***	-3.259***	0.711***	-3.805***
	(0.263)	(0.331)	(0.113)	(0.268)
Work income_m	-0.0187***	0.00336	-0.0119***	-0.0455***
	(0.00180)	(0.00227)	(0.00103)	(0.00254)
Work income_w	0.0808***	-0.501***	-0.000877	0.0456***
	(0.00447)	(0.00585)	(0.00144)	(0.00344)
Work income^2	-0.000184***	0.00100***	6.79e-06***	3.59e-05***
	(1.31e-05)	(1.79e-05)	(1.40e-06)	(3.63e-06)
Non Work Income	0.000101***	-0.000481***	4.71e-05***	-0.000807***
	(1.41e-05)	(1.78e-05)	(6.04e-06)	(1.44e-05)
Unemployment Rate	7.166***	-42.46***	3.492***	-9.770***
	(1.179)	(1.481)	(0.504)	(1.198)
Education Dif.	-0.0310***	-0.0133	0.00268	0.235***
	(0.0117)	(0.0147)	(0.00528)	(0.0126)
Age Dif.	-0.00280	0.0700***	-0.0291***	-0.0700***
	(0.00647)	(0.00813)	(0.00283)	(0.00674)
Northeast	2.498***	0.440**	-0.199***	-2.684***
	(0.152)	(0.191)	(0.0649)	(0.154)
Southeast	4.064***	4.333***	0.788***	2.134***
	(0.149)	(0.188)	(0.0637)	(0.152)
South	1.758***	5.389***	0.884***	2.455***
	(0.171)	(0.216)	(0.0734)	(0.175)
Midwest	-0.447**	4.693***	-0.537***	2.732***
	(0.185)	(0.233)	(0.0791)	(0.188)
2017	0.0952	0.138	0.187***	-0.485***
	(0.103)	(0.130)	(0.0442)	(0.105)
2018	0.829***	-0.163	0.310***	-0.358***
	(0.103)	(0.130)	(0.0442)	(0.105)
2019	1.206***	-0.446***	0.291***	-0.00432
	(0.105)	(0.131)	(0.0447)	(0.106)
Constant	21.72***	6.813***	7.632***	35.15***
	(0.361)	(0.468)	(0.144)	(0.351)
Observations	163,014	163,014	163,014	163,014
R^2	0.067	0.151	0.040	0.093

Note: *Significant at 10%; **Significant at 5%; ***Significant at 1%. Observations represented in number of couples, with sample expansion.
Source: Survey results based on PNAD data, 2016-2019 (IBGE, 2020)

Moving to egalitarian and nontraditional households, we can see important changes. First, the level of education explains a much smaller part of the time allocated for both, men, and women. Second, the number of children also has smaller effects (compared to the full sample and traditional households) for egalitarian households, and it is significant only for women's domestic production for nontraditional households. Third, the presence of a teenager seems to be more important for reducing household chores and increasing time in the labor market for males in egalitarian and nontraditional households. Fourth, for egalitarian households, having children under three years of age has very similar effects on domestic production for men and women, increasing domestic work by approximately four hours. However, the reduction in the labor market is still greater for women. Fifth, as expected, for nontraditional households, having children under three years of age and having an elderly individual have more effects on hours devoted to household chores for men than women.

Table 5 – Couples' time allocation in egalitarian households

	Women		Men	
Variables	Chores	Market	Chores	Market
Age	0.00812	-0.0815***	0.0108*	-0.235***
	(0.00604)	(0.00957)	(0.00568)	(0.00956)
Household's head	0.272**	1.138***	-0.360***	0.676***
	(0.111)	(0.171)	(0.104)	(0.172)
Incomplete Primary	-0.380**	7.360***	-0.319***	3.552***
	(0.152)	(0.693)	(0.121)	(0.581)
Primary	-0.527***	11.92***	-0.466***	6.516***
	(0.171)	(0.730)	(0.142)	(0.622)
Incomplete High School	-0.587***	12.51***	-0.434***	7.442***
	(0.183)	(0.758)	(0.154)	(0.657)
High School	-0.853***	15.14***	-0.596***	9.194***
	(0.182)	(0.697)	(0.155)	(0.595)
Incomplete Undergraduate	-0.907***	14.84***	-0.603***	9.511***
	(0.203)	(0.759)	(0.177)	(0.673)
Undergraduate	-1.311***	20.08***	-0.895***	12.36***
	(0.209)	(0.719)	(0.183)	(0.634)
White	-0.0920***	1.218***	-0.0925***	1.324***
	(0.0340)	(0.163)	(0.0321)	(0.165)
Urban	-0.838***	6.829***	-0.550***	1.479***
	(0.179)	(0.281)	(0.169)	(0.283)
Nº of children	1.119***	-0.520***	1.050***	-0.196**
	(0.0600)	(0.0929)	(0.0565)	(0.0935)
Teenager	-1.307***	1.948***	-1.340***	1.430***
	(0.164)	(0.253)	(0.155)	(0.255)
Teenager_f	-0.531***	-0.0422	-0.471***	0.464
	(0.185)	(0.284)	(0.174)	(0.287)
Children≤3	4.138***	-2.673***	3.756***	-0.745***
	(0.144)	(0.223)	(0.136)	(0.224)
Elderly	1.762***	-6.138***	1.578***	-6.056***
	(0.355)	(0.546)	(0.334)	(0.551)
Work income_m	-0.0248***	0.0158***	-0.0255***	-0.0261***
	(0.00220)	(0.00352)	(0.00217)	(0.00506)
Work income_w	-0.0169***	-0.141***	-0.0163***	0.0289***
	(0.00293)	(0.00630)	(0.00264)	(0.00451)
Work income^2	-1.67e-07	0.000216***	2.17e-06	4.28e-05***
	(2.85e-06)	(1.48e-05)	(2.15e-06)	(1.20e-05)
Non Work Income	5.82e-05***	-0.000450***	6.15e-05***	-0.000712***
	(1.25e-05)	(1.93e-05)	(1.18e-05)	(1.95e-05)
Unemployment Rate	7.812***	-33.08***	6.576***	-18.58***
	(1.645)	(2.537)	(1.548)	(2.557)
Education Dif.	-0.00146	-0.0607**	-0.0578***	0.390***
	(0.0162)	(0.0265)	(0.0154)	(0.0273)
Age Dif.	-0.0103	0.0989***	0.00211	-0.133***
	(0.00870)	(0.0134)	(0.00837)	(0.0138)
Northeast	1.070***	2.265***	0.969***	-1.444***
	(0.216)	(0.333)	(0.203)	(0.335)
Southeast	1.832***	5.332***	1.726***	2.522***
	(0.199)	(0.310)	(0.187)	(0.313)
South	0.747***	5.540***	0.739***	2.612***
	(0.216)	(0.343)	(0.203)	(0.347)
Midwest	-0.624**	4.652***	-0.559**	2.821***
	(0.250)	(0.385)	(0.235)	(0.388)
2017	-0.0425	0.170	-0.00619	0.212
	(0.139)	(0.214)	(0.131)	(0.215)
2018	0.340**	0.641***	0.341***	0.422**
	(0.138)	(0.213)	(0.130)	(0.214)
2019	0.355***	0.807***	0.466***	0.782***
	(0.138)	(0.212)	(0.129)	(0.214)
Constant	15.72***	13.66***	14.85***	33.26***
	(0.392)	(0.868)	(0.370)	(0.803)
Observations	52,929	52,929	52,929	52,929
R^2	0.053	0.120	0.050	0.100

Note: *Significant at 10%; **Significant at 5%; ***Significant at 1%. Observations represented in number of couples, with sample expansion.
Source: Survey results based on PNAD data, 2016-2019 (IBGE, 2020)

Table 6 – Couples' time allocation in nontraditional households

	Women		Men	
Variables	Chores	Market	Chores	Market
Age	-0.0230**	0.0284	-0.0355*	-0.168***
	(0.00918)	(0.0252)	(0.0204)	(0.0294)
Household's head	-0.869***	3.018***	3.051***	0.688
	(0.179)	(0.483)	(0.399)	(0.569)
Incomplete Primary	-0.357	3.866**	-1.186	2.369
	(0.389)	(1.578)	(0.757)	(1.574)
Primary	-0.586	8.852***	-2.371***	3.469**
	(0.426)	(1.678)	(0.845)	(1.693)
Incomplete High School	-0.926**	9.745***	-2.807***	2.249
	(0.456)	(1.782)	(0.921)	(1.828)
High School	-0.944**	13.45***	-3.095***	4.186**
	(0.424)	(1.595)	(0.859)	(1.629)
Incomplete Undergraduate	-1.182**	14.44***	-4.312***	4.818**
	(0.480)	(1.805)	(0.991)	(1.888)
Undergraduate	-1.250***	20.22***	-4.739***	6.529***
	(0.469)	(1.683)	(0.982)	(1.791)
White	0.0671	0.988**	-0.278	2.848***
	(0.105)	(0.431)	(0.236)	(0.500)
Urban	0.0270	8.557***	-0.420	0.106
	(0.270)	(0.732)	(0.602)	(0.862)
Nº of children	0.457***	0.150	0.913***	-0.110
	(0.0887)	(0.240)	(0.198)	(0.282)
Teenager	-0.268	1.471**	-0.812	-0.927
	(0.238)	(0.643)	(0.532)	(0.758)
Teenager_f	-1.171***	0.995	-3.125***	3.377***
	(0.269)	(0.725)	(0.600)	(0.855)
Children≤3	2.770***	-6.373***	6.241***	-0.436
	(0.233)	(0.627)	(0.518)	(0.739)
Elderly	0.439	-1.835	2.963***	-6.326***
	(0.499)	(1.344)	(1.112)	(1.586)
Work income_m	-0.0194***	0.0166*	-0.0471***	-0.00646
	(0.00335)	(0.00906)	(0.0106)	(0.0197)
Work income_w	-0.0265***	-0.294***	-0.0425***	0.0617***
	(0.00654)	(0.0244)	(0.00953)	(0.0139)
Work income^2	4.71e-05	0.00164***	-5.98e-06	0.000158***
	(3.33e-05)	(0.000142)	(2.66e-05)	(5.88e-05)
Non Work Income	8.59e-05***	-0.000163***	0.000213***	-0.000817***
	(1.88e-05)	(5.07e-05)	(4.19e-05)	(5.97e-05)
Unemployment Rate	11.92***	-7.427	26.21***	-34.34***
	(2.422)	(6.536)	(5.402)	(7.712)
Education Dif.	0.0578**	-0.187***	-0.0841	-0.163**
	(0.0240)	(0.0662)	(0.0537)	(0.0780)
Age Dif.	-0.00762	0.0629*	-0.0821***	0.0155
	(0.0127)	(0.0342)	(0.0286)	(0.0408)
Northeast	0.851***	0.173	1.453**	0.230
	(0.293)	(0.791)	(0.654)	(0.933)
Southeast	1.161***	2.116***	2.269***	0.781
	(0.279)	(0.757)	(0.622)	(0.892)
South	1.068***	3.376***	1.417**	-0.509
	(0.314)	(0.864)	(0.703)	(1.021)
Midwest	0.184	1.880*	-0.564	1.009
	(0.358)	(0.966)	(0.799)	(1.140)
2017	1.454***	-0.333	3.437***	-3.172***
	(0.196)	(0.528)	(0.436)	(0.622)
2018	1.401***	0.124	3.812***	-2.164***
	(0.205)	(0.553)	(0.457)	(0.653)
2019	1.533***	1.197**	3.864***	-4.231***
	(0.202)	(0.546)	(0.450)	(0.643)
Constant	6.254***	13.17***	15.24***	34.71***
	(0.651)	(2.059)	(1.435)	(2.296)
Observations	8,104	8,104	8,104	8,104
R^2	0.081	0.132	0.101	0.073

Note: *Significant at 10%; **Significant at 5%; ***Significant at 1%. Observations represented in number of couples, with sample expansion.
Source: Survey results based on PNAD data, 2016-2019 (IBGE, 2020)

4.1.1.1 Counterfactual Scenario

What if all households adopted an egalitarian behavior? The egalitarian model was employed to forecast the time couples spend on domestic chores and in the labor market. These estimates were subsequently compared to the predictions from the general model and are presented in Table 7. In a hypothetical scenario in which all households follow egalitarian practices, women would potentially decrease the time allocated to home production by approximately 26%, while men might increase their contribution by approximately 69%. In terms of participation in the labor market, women's engagement increased by approximately 42%, while men might reduce their involvement by only approximately 10%.

Examining the potential impact of these changes on the overall wage mass, the revised estimated hours were calculated and multiplied by the respective hourly wages. The findings suggest that the total male wage mass could decrease by approximately 7%, while the female wage mass might increase by approximately 66%. Ultimately, this shift could lead to a collective increase in the total wage mass, reaching close to 16%.

Thus, the results suggest that transitioning toward an egalitarian household model presents promising prospects not only for gender equality but also for the economy. A potential decrease in women's time spent on home production, combined with a potential increase in men's involvement in domestic chores, represents a crucial change in traditional gender roles. This new configuration would allow women to increase their participation in the workforce, enabling greater economic independence and expanding opportunities for career growth.

From an economic perspective, the expected increase in female wage mass can boost economic activity. While the redistribution of time between genders might marginally affect male wage mass, the overall collective rise in total wage mass promises a substantial increase in income circulation within the economy and may stimulate consumption and investment.

Table 7 – Counterfactual Scenario

Wage Mass				
	Men	Women	Total	Variation
General Model	131816888	65727208	197544096	0.00%
Traditional	137133008	52486156	189619164	-4.01%
Egalitarian	121508504	109269792	230778296	16.82%
Non Traditional	113232448	104662496	217894944	10.30%

Source: Survey results based on PNAD data, 2016-2019 (IBGE, 2020)

4.1.2 Childless couples

The presence of young children generates an incentive for women to specialize in household chores and reduce the time allocated in the labor market compared to men, as shown in Table 8. Furthermore, children can be considered a public good within the household and these goods are not separable in couples' utility functions (BLUNDELL; CHIAPPORI; MEGHIR, 2005).

Furthermore, the most important differences between women and men were concentrated in variables related to children. Thus, to analyze the robustness of the results, the analysis is also performed considering only childless couples.

In this case, the coefficients observed for time devoted to the labor market are more similar between genders, but an incomplete high school education already contributes to women's reduced time on home production. The results for the presence of elderly people are similar to the results for the couple.

Table 8 – Childless Couple's Time Allocation

	Women		Men	
Variables	Chores	Market	Chores	Market
Age	0.105***	-0.106***	0.0252***	-0.166***
	(0.00580)	(0.00955)	(0.00402)	(0.00813)
Household's head	0.311***	0.718***	0.540***	0.0531
	(0.118)	(0.194)	(0.0833)	(0.168)
Incomplete Primary	0.499	4.627***	-0.0368	5.025***
	(0.338)	(0.570)	(0.205)	(0.430)
Primary	-0.183	8.994***	0.500**	7.416***
	(0.381)	(0.643)	(0.235)	(0.491)
Incomplete High School	-0.700*	8.995***	1.134***	6.929***
	(0.422)	(0.711)	(0.262)	(0.547)
High School	-1.854***	13.84***	1.119***	8.200***
	(0.356)	(0.597)	(0.222)	(0.461)
Incomplete Undergraduate	-3.762***	14.81***	1.312***	7.654***
	(0.416)	(0.699)	(0.275)	(0.571)
Undergraduate	-5.924***	23.63***	1.037***	10.42***
	(0.385)	(0.643)	(0.251)	(0.518)
White	-0.178	1.284***	-0.421***	1.462***
	(0.113)	(0.192)	(0.0790)	(0.166)
Urban	-1.558***	6.199***	0.355***	1.299***
	(0.168)	(0.277)	(0.119)	(0.239)
Elderly	0.609**	-3.431***	0.848***	-3.383***
	(0.267)	(0.438)	(0.188)	(0.379)
Work income_m	-0.0168***	0.0137***	-0.0281***	-0.0405***
	(0.00272)	(0.00447)	(0.00272)	(0.00563)
Work income_w	-0.0101*	-0.281***	-0.00877***	0.0127**
	(0.00518)	(0.00865	(0.00268)	(0.00542)
Work income^2	5.80e-07	0.000354***	2.17e-05***	6.86e-05***
	(1.03e-05)	(1.75e-05)	(5.22e-06)	(1.10e-05)
Non Work Income	0.000120***	-0.000638***	0.000135***	-0.000987***
	(1.70e-05)	(2.79e-05)	(1.20e-05)	(2.41e-05)
Unemployment Rate	12.53***	-46.06***	6.522***	-18.56***
	(1.720)	(2.823)	(1.211)	(2.443)
Education Dif.	0.108***	-0.117***	0.0774***	0.216***
	(0.0176)	(0.0290)	(0.0126)	(0.0254)
Age Dif.	-0.0450***	0.122***	0.0288***	-0.106***
	(0.00872)	(0.0143)	(0.00609)	(0.0123)
Northeast	1.541***	0.703*	-0.250	-2.295***
	(0.237)	(0.390)	(0.167)	(0.337)
Southeast	1.350***	4.409***	0.725***	1.691***
	(0.229)	(0.377)	(0.162)	(0.326)
South	0.133	4.666***	1.018***	0.991***
	(0.253)	(0.416)	(0.178)	(0.360)
Midwest	-0.580**	3.370***	-0.787***	2.465***
	(0.272)	(0.447)	(0.192)	(0.387)
2017	0.0412	-0.263	0.0572	-0.203
	(0.150)	(0.245)	(0.105)	(0.213)
2018	0.192	-0.00883	0.0429	0.186
	(0.149)	(0.244)	(0.105)	(0.212)
2019	-0.0940	0.196	-0.0167	0.288
	(0.149)	(0.245)	(0.105)	(0.212)
Constant	17.39***	13.12***	7.245***	36.13***
	(0.489)	(0.811)	(0.333)	(0.679)
Observations	48,792	48,792	48,792	48,792
R^2	0.085	0.168	0.017	0.104

Note: *Significant at 10%; **Significant at 5%; ***Significant at 1%. Observations represented in number of couples, with sample expansion.
Source: Survey results based on PNADC data, 2016-2019 (IBGE, 2022).

4.1.3 Singles

Our third robustness check was to estimate the model for single women and men, so that the time devoted to home production and the labor market are assumed to be correlated only for the same individual. In this case, for childless individuals, the results in Table 9 are more similar across genders, except that the educational level is significant for reducing time dedicated to home production, while it is not significant for men and urban women, who spend less time on household chores and more on the labor market than other women. Both results are non-significant for single men.

However, the results in Table 10, for the complete sample, show that the maternity penalty is again greater for women. Single mothers expend nearly 1 hour and 40 minutes more on domestic chores by child, an additional 6 hours if at least one child is under three, and 1 hour and 48 minutes less if the child is a female teenager. At the same time, they reduce their hours in the labor market, but less than they do proportionately (implying they are giving up leisure time). On the other hand, single fathers spend nearly 15 minutes more on domestic chores by child, an additional 1 hour and 21 minutes if at least one child is under three, and 2 hours and 39 minutes less if the child is a female teenager. Children also reduce men's hours devoted to the labor market, but only by 32 minutes a week. Additionally, suppose that a single man has an elderly individual in the household. In that case, his time devoted to domestic chores is reduced by 1 hour and 41 minutes, while for women there is an increase in domestic chores by approximately 3 hours and 20 minutes. This result may indicate that single fathers may have more support than single mothers, especially if they are raising a child.

Table 9 – Childless Single's Time Allocation

	Women		Men	
Variables	Chores	Market	Chores	Market
Age	0.170***	-0.143***	0.107***	-0.104***
	(0.00781)	(0.0120)	(0.00469)	(0.00937)
Incomplete Primary	1.167***	3.685***	0.0305	5.391***
	(0.414)	(0.637)	(0.234)	(0.468)
Primary	0.848*	9.162***	0.00207	8.479***
	(0.477)	(0.734)	(0.275)	(0.550)
Incomplete High School	1.444**	8.322***	-0.0565	9.018***
	(0.561)	(0.863)	(0.308)	(0.615)
High School	-0.0900	13.48***	0.217	10.31***
	(0.423)	(0.651)	(0.249)	(0.497)
Incomplete Undergraduate	-1.404***	11.89***	-0.303	7.444***
	(0.524)	(0.806)	(0.316)	(0.631)
Undergraduate	-3.111***	22.48***	-0.847***	13.49***
	(0.452)	(0.695)	(0.276)	(0.553)
White	0.506***	0.523**	0.0269	0.167
	(0.168)	(0.259)	(0.107)	(0.215)
Urban	-1.214***	4.385***	0.0730	-0.0219
	(0.328)	(0.505)	(0.146)	(0.291)
Elderly	3.695***	-6.197***	-1.224***	-4.535***
	(0.192)	(0.295)	(0.144)	(0.288)
Work income_w	-0.0499***	-0.205***	-0.0448***	-0.0145***
	(0.00632)	(0.00972)	(0.00280)	(0.00559)
Work income^2	4.73e-05***	0.000305***	1.52e-05***	3.53e-06
	(1.29e-05)	(1.98e-05)	(1.93e-06)	(3.86e-06)
Non Work Income	0.000155***	-0.00173***	8.43e-05***	-0.00154***
	(2.66e-05)	(4.09e-05)	(1.92e-05)	(3.84e-05)
Unemployment Rate	8.055***	-39.82***	5.656***	-20.25***
	(2.441)	(3.755)	(1.525)	(3.049)
Northeast	1.319***	-0.0412	0.452**	-2.916***
	(0.354)	(0.544)	(0.203)	(0.405)
Southeast	1.496***	3.149***	0.891***	1.029***
	(0.341)	(0.525)	(0.196)	(0.391)
South	0.190	1.816***	0.350	0.236
	(0.382)	(0.588)	(0.225)	(0.450)
Midwest	-0.686*	3.379***	-0.794***	1.993***
	(0.408)	(0.628)	(0.241)	(0.483)
2017	-0.00616	-1.025***	0.268**	-0.941***
	(0.218)	(0.336)	(0.135)	(0.269)
2018	0.550**	-1.696***	0.301**	-1.611***
	(0.216)	(0.332)	(0.134)	(0.269)
2019	0.281	-1.532***	0.0597	-1.844***
	(0.214)	(0.329)	(0.134)	(0.269)
Constant	10.24***	22.99***	8.014***	33.55***
	(0.690)	(1.062)	(0.368)	(0.736)
Observations	25,149	25,149	37,822	37,822
R^2	0.106	0.234	0.034	0.104

Note: *Significant at 10%; **Significant at 5%; ***Significant at 1%. Observations represented in number of couples, with sample expansion.
Source: Survey results based on PNADC data, 2016-2019 (IBGE, 2022).

Table 10 – Single's Time Allocation

	Women		Men	
Variables	Chores	Market	Chores	Market
Age	0.0541***	-0.129***	0.0949***	-0.125***
	(0.00567)	(0.00804)	(0.00451)	(0.00889)
Incomplete Primary	0.627**	3.467***	0.219	4.905***
	(0.279)	(0.395)	(0.216)	(0.427)
Primary	-0.0956	8.423***	0.208	7.499***
	(0.312)	(0.442)	(0.252)	(0.497)
Incomplete High School	0.674*	8.163***	0.0948	7.888***
	(0.346)	(0.490)	(0.281)	(0.555)
High School	-0.704**	12.37***	0.395*	9.361***
	(0.284)	(0.403)	(0.229)	(0.453)
Incomplete Undergraduate	-2.082***	12.43***	-0.0530	7.086***
	(0.366)	(0.518)	(0.296)	(0.585)
Undergraduate	-4.097***	20.13***	-0.597**	12.19***
	(0.304)	(0.430)	(0.257)	(0.507)
White	0.0153	0.748***	0.0203	0.319
	(0.111)	(0.157)	(0.0988)	(0.195)
Urban	-0.951***	5.888***	0.106	0.201
	(0.198)	(0.280)	(0.133)	(0.263)
Nº of children	1.658***	-0.849***	0.249***	0.542***
	(0.0575)	(0.0815)	(0.0879)	(0.174)
Teenager	-0.183	1.822***	0.773***	1.571***
	(0.167)	(0.236)	(0.262)	(0.517)
Teenager_f	-1.860***	0.696***	-2.652***	0.777
	(0.188)	(0.266)	(0.298)	(0.589)
Children≤3	6.854***	-5.964***	1.360***	-0.894*
	(0.221)	(0.314)	(0.275)	(0.542)
Elderly	3.330***	-6.754***	-1.691***	-4.547***
	(0.162)	(0.229)	(0.133)	(0.263)
Work income_w	-0.0294***	-0.122***	-0.0445***	-0.0124**
	(0.00304)	(0.00431)	(0.00255)	(0.00503)
Work income^2	4.48e-06***	2.08e-05***	1.55e-05***	2.89e-05***
	(7.93e-07)	(1.12e-06)	(1.85e-06)	(3.65e-06)
Non Work Income	0.000350***	-0.00165***	0.000101***	-0.00102***
	(1.87e-05)	(2.64e-05)	(1.40e-05)	(2.77e-05)
Unemployment Rate	8.875***	-47.35***	5.588***	-18.56***
	(1.556)	(2.204)	(1.412)	(2.787)
Northeast	2.488***	-0.896***	0.489***	
	(0.218)	(0.308)	(0.182)	(0.359)
Southeast	2.910***	3.598***	1.078***	1.049***
	(0.212)	(0.300)	(0.176)	(0.348)
South	1.447***	2.542***	0.505**	0.360
	(0.243)	(0.345)	(0.204)	(0.402)
Midwest	-0.185	3.423***	-0.573***	1.859***
	(0.262)	(0.372)	(0.219)	(0.431)
2017	0.316**	-0.721***	0.326***	-1.024***
	(0.142)	(0.202)	(0.124)	(0.244)
2018	0.715***	-1.277***	0.325***	-1.219***
	(0.141)	(0.200)	(0.124)	(0.244)
2019	0.898***	-1.233***	0.117	-1.605***
	(0.140)	(0.199)	(0.124)	(0.244)
Constant	15.00***	21.06***	8.258***	34.50***
	(0.463)	(0.657)	(0.343)	(0.677)
Observations	70,440	70,440	46,370	46,370
R^2	0.084	0.195	0.033	0.091

Note: *Significant at 10%; **Significant at 5%; ***Significant at 1%. Observations represented in number of couples, with sample expansion.
Source: Survey results based on PNAD data, 2016-2019 (IBGE, 2020)

4.1.4 Robustness

Two final robustness checks were performed: considering only couples without an elderly individual (who could help the family or create the need for additional time caring); and couples who have one or both[4] spouses in informal jobs (for which working hours are more flexible and women tend to be concentrated). The results are very similar to those for the general sample and traditional households.

[4] Results available under request due to size constraints.

Table 11 – Couples' time allocation without elderly individuals in the household

	Women		Men	
Variables	Chores	Market	Chores	Market
Age	0.0102**	-0.0115**	-0.0307***	-0.158***
	(0.00408)	(0.00535)	(0.00250)	(0.00444)
Household's head	0.0935	0.963***	0.340***	0.520***
	(0.0711)	(0.0931)	(0.0438)	(0.0779)
Incomplete Primary	1.181***	3.447***	0.0861	3.834***
	(0.237)	(0.321)	(0.115)	(0.214)
Primary	0.592**	7.086***	0.714***	5.944***
	(0.254)	(0.344)	(0.128)	(0.238)
Incomplete High School	0.301	7.731***	1.020***	5.945***
	(0.267)	(0.361)	(0.139)	(0.258)
High School	-0.682***	11.81***	1.368***	6.923***
	(0.244)	(0.329)	(0.123)	(0.227)
Incomplete Undergraduate	-2.472***	14.58***	2.139***	6.829***
	(0.281)	(0.380)	(0.154)	(0.285)
Undergraduate	-5.531***	23.80***	1.961***	8.727***
	(0.261)	(0.351)	(0.138)	(0.254)
White	-0.165**	1.277***	-0.517***	1.430***
	(0.0674)	(0.0915)	(0.0409)	(0.0764)
Urban	-0.917***	6.185***	0.528***	2.613***
	(0.0991)	(0.130)	(0.0610)	(0.109)
Nº of children	1.638***	-1.314***	0.0306	0.0912**
	(0.0364)	(0.0477)	(0.0224)	(0.0398)
Teenager	-1.214***	2.291***	-0.778***	1.074***
	(0.0983)	(0.129)	(0.0606)	(0.108)
Teenager_f	-0.919***	0.469***	-0.339***	0.00699
	(0.109)	(0.142)	(0.0671)	(0.119)
Children≤3	5.832***	-4.705***	2.299***	-0.129
	(0.0915)	(0.120)	(0.0564)	(0.100)
Work income_m	-0.0166***	0.00571***	-0.0201***	-0.0321***
	(0.00156)	(0.00204)	(0.00125)	(0.00229)
Work income_w	0.0314***	-0.304***	-0.000494	0.0346***
	(0.00329)	(0.00440)	(0.00149)	(0.00265)
Work income^2	-8.67e-05***	0.000568***	1.22e-05***	2.69e-05***
	(8.82e-06)	(1.21e-05)	(2.00e-06)	(3.78e-06)
Non Work Income	4.50e-05***	-0.000404***	8.80e-05***	-0.000785***
	(1.06e-05)	(1.39e-05)	(6.55e-06)	(1.17e-05)
Unemployment Rate	8.978***	-41.68***	3.808***	-11.33***
	(1.020)	(1.336)	(0.628)	(1.118)
Education Dif.	0.0309***	-0.0857***	0.0739***	0.192***
	(0.0103)	(0.0135)	(0.00659)	(0.0118)
Age Dif.	-0.0184***	0.107***	-0.0200***	-0.0855***
	(0.00556)	(0.00728)	(0.00351)	(0.00625)
Northeast	2.680***	0.302*	-0.454***	-1.953***
	(0.131)	(0.172)	(0.0808)	(0.144)
Southeast	3.688***	4.207***	1.019***	2.267***
	(0.127)	(0.167)	(0.0785)	(0.140)
South	1.329***	5.718***	1.338***	2.194***
	(0.145)	(0.190)	(0.0893)	(0.159)
Midwest	-0.00509	4.025***	-0.776***	2.856***
	(0.158)	(0.207)	(0.0975)	(0.173)
2017	0.161*	0.186	0.332***	-0.468***
	(0.0882)	(0.116)	(0.0544)	(0.0967)
2018	0.832***	0.127	0.485***	-0.264***
	(0.0883)	(0.116)	(0.0544)	(0.0968)
2019	1.032***	0.161	0.557***	-0.0274
	(0.0889)	(0.116)	(0.0548)	(0.0975)
Constant	18.90***	10.01***	8.887***	34.90***
	(0.324)	(0.431)	(0.183)	(0.331)
Observations	219,253	219,253	219,253	219,253
R^2	0.080	0.154	0.035	0.072

Note: *Significant at 10%; **Significant at 5%; ***Significant at 1%. Observations represented in number of couples, with sample expansion.
Source: Survey results based on PNADC data, 2016-2019 (IBGE, 2022).

Table 12 – Couples' time allocation with one informal employment

	Women		Men	
Variables	Chores	Market	Chores	Market
Age	-0.0125***	0.0745***	-0.0280***	-0.150***
	(0.00442)	(0.00562)	(0.00266)	(0.00500)
Household's head	0.0221	1.281***	0.273***	0.535***
	(0.0762)	(0.0968)	(0.0462)	(0.0867)
Incomplete Primary	1.312***	3.127***	0.0547	3.625***
	(0.236)	(0.311)	(0.114)	(0.223)
Primary	0.849***	6.362***	0.703***	5.749***
	(0.256)	(0.336)	(0.129)	(0.253)
Incomplete High School	0.715***	6.868***	0.926***	5.702***
	(0.271)	(0.355)	(0.142)	(0.276)
High School	-0.126	10.48***	1.284***	6.769***
	(0.245)	(0.320)	(0.123)	(0.239)
Incomplete Undergraduate	-2.116***	14.01***	2.041***	6.868***
	(0.290)	(0.379)	(0.159)	(0.311)
Undergraduate	-5.564***	24.48***	1.871***	9.103***
	(0.265)	(0.345)	(0.140)	(0.270)
White	-0.204***	1.513***	-0.557***	1.709***
	(0.0728)	(0.0958)	(0.0436)	(0.0855)
Urban	-0.544***	5.193***	0.472***	2.388***
	(0.103)	(0.130)	(0.0621)	(0.117)
Nº of children	1.560***	-1.015***	-0.0125	0.137***
	(0.0383)	(0.0487)	(0.0232)	(0.0436)
Teenager	-1.145***	2.058***	-0.681***	1.130***
	(0.105)	(0.134)	(0.0637)	(0.120)
Teenager_f	-0.875***	0.336**	-0.391***	-0.0834
	(0.117)	(0.148)	(0.0707)	(0.133)
Children≤3	5.765***	-4.534***	2.229***	0.0681
	(0.0992)	(0.126)	(0.0601)	(0.113)
Elderly	0.747***	-3.339***	1.018***	-4.054***
	(0.229)	(0.291)	(0.139)	(0.260)
Work income_m	-0.0164***	0.00739***	-0.0212***	-0.0286***
	(0.00155)	(0.00197)	(0.00127)	(0.00245)
Work income_w	0.0244***	-0.292***	0.000576	0.0406***
	(0.00347)	(0.00450)	(0.00152)	(0.00287)
Work income^2	-7.11e-05***	0.000536***	1.35e-05***	2.55e-05***
	(9.04e-06)	(1.20e-05)	(1.94e-06)	(3.84e-06)
Non Work Income	4.62e-05***	-0.000428***	0.000124***	-0.000927***
	(1.13e-05)	(1.43e-05)	(6.83e-06)	(1.28e-05)
Unemployment Rate	7.137***	-41.42***	3.243***	-11.87***
	(1.081)	(1.374)	(0.655)	(1.231)
Education Dif.	0.00817	-0.0186	0.0704***	0.193***
	(0.0108)	(0.0137)	(0.00677)	(0.0128)
Age Dif.	0.00839	0.0190**	-0.0205***	-0.0847***
	(0.00589)	(0.00749)	(0.00364)	(0.00684)
Northeast	2.807***	-0.0436	-0.515***	-2.133***
	(0.135)	(0.171)	(0.0817)	(0.153)
Southeast	4.432***	1.957***	0.910***	1.785***
	(0.132)	(0.168)	(0.0801)	(0.151)
South	2.056***	3.275***	1.266***	1.612***
	(0.153)	(0.194)	(0.0926)	(0.174)
Midwest	0.335**	2.488***	-0.876***	2.701***
	(0.166)	(0.211)	(0.100)	(0.189)
2017	0.142	0.234*	0.308***	-0.457***
	(0.0947)	(0.120)	(0.0574)	(0.108)
2018	0.792***	0.244**	0.397***	-0.180*
	(0.0946)	(0.120)	(0.0574)	(0.108)
2019	1.033***	0.318***	0.521***	-0.00217
	(0.0953)	(0.121)	(0.0578)	(0.109)
Constant	19.83***	5.927***	9.017***	34.35***
	(0.334)	(0.431)	(0.188)	(0.358)
Observations	199,414	199,414	199,414	199,414
R^2	0.079	0.149	0.033	0.078

Note: *Significant at 10%; **Significant at 5%; ***Significant at 1%. Observations represented in number of couples, with sample expansion.
Source: Survey results based on PNADC data, 2016-2019 (IBGE, 2022).

5 FINAL CONSIDERATIONS

This article aimed to analyze the determinants of intrahousehold time allocation between household chores and the labor market for Brazilian couples. The results obtained with the SUR model suggest, in general, that factors such as education and the presence of children in the household (especially young children) are the main determinants of women's time allocation. An increase in schooling contributes to a reduction in the time spent on household chores and an increase in the time spent in the labor market, while the presence of young children in the household has the opposite effect. For men, the presence of young children has a smaller impact on the time dedicated to household chores, while factors such as education and region of residence are relevant for determining the allocation of time at home production. To emphasize the robustness of the results obtained, the analysis was also performed for subsamples of childless couples, singles, households without an elderly person, and households where one or both couples' members were in informal employment. Overall, the results are similar.

Considering different attitudes toward gender norms is reflected in time allocation as traditional, egalitarian, or nontraditional. The main differences between genders and across household types are concentrated on variables directly related to care, i.e., number of children, children under the age of three years, teenagers, and elderly individuals. For traditional households, women work more at home with more children and reduce their time in the labor market with more children than egalitarian and nontraditional households. Although men spend more time in home production in egalitarian and nontraditional households, the time spent in the labor market shows only a small change.

The ongoing gender revolution, although it has contributed to a significant increase in the presence of women in the workforce, remains incomplete. This is because, despite notable advances toward equality in the workplace (although there are still many inequalities to be overcome), women continue to assume a disproportionate share of domestic responsibilities. The greater attribution of household chores to women has several consequences, whether in terms of health, such as greater perceived stress and fatigue (EEK; AXMON, 2015), in terms of work, with less female insertion in the labor market (MELO; CONSIDERA; SABBATO, 2007) or even in the macroeconomic sphere, since talent may be wasted, which may limit the country's economic growth (HSIEH et al., 2019). Thus, the gender-based division of labor contributes to the perpetuation of women's disadvantage to structural and cultural forces that are mutually reinforcing at different levels (CHAFETZ, 1988).

Our results show that if all households behaved in more egalitarian terms, the benefit would not be just for women but also for the economy. A potential decrease in women's time spent on home production and a potential increase in men's involvement in domestic chores represents a crucial change in traditional gender roles. This new configuration would allow women to increase their participation in the workforce, enabling greater economic independence

and expanding opportunities for career growth. It would also increase the wage mass, stimulating consumption and investment.

Bibliography

AGARWAL, B. Bargaining and gender relations: Within and beyond the household. *Feminist economics*, Taylor & Francis, v. 3, n. 1, p. 1–51, 1997.

AMÁBILE, F. Three essays about migration, gender and family economic. Udelar. FCS, 2022.

APPS, P. F.; REES, R. Labour supply, household production and intra-family welfare distribution. *Journal of Public Economics*, Elsevier, v. 60, n. 2, p. 199–219, 1996.

BERGSTROM, T. C.; LAM, D. The two-sex problem and the marriage squeeze in an equilibrium model of marriage markets. 1991.

BIANCHI, S. M. et al. Is anyone doing the housework? trends in the gender division of household labor. *Social forces*, Oxford University Press, v. 79, n. 1, p. 191–228, 2000.

BLUNDELL, R.; CHIAPPORI, P.-A.; MEGHIR, C. Collective labor supply with children. *Journal of political Economy*, The University of Chicago Press, v. 113, n. 6, p. 1277–1306, 2005.

BOURGUIGNON, F. et al. Intra household allocation of consumption: A model and some evidence from French data. *Annales d'Economie et de Statistique*, JSTOR, p. 137–156, 1993.

BREUSCH, T. S.; PAGAN, A. R. The Lagrange multiplier test and its applications to model specification in econometrics. *The review of economic studies*, Wiley-Blackwell, v. 47, n. 1, p. 239–253, 1980.

BRINES, J. Economic dependency, gender, and the division of labor at home. *American Journal of sociology*, University of Chicago Press, v. 100, n. 3, p. 652–688, 1994.

BROWNING, M.; CHIAPPORI, P.-A.; WEISS, Y. *Economics of the Family*. [S.l.]: Cambridge University Press, 2014.

CHAFETZ, J. S. The gender division of labor and the reproduction of female disadvantage: Toward an integrated theory. *Journal of family issues*, Sage Publications, v. 9, n. 1, p. 108–131, 1988.

DEGRAFF, D. S.; ANKER, R. Gênero, mercados de trabalho e o trabalho das mulheres. *Séries Demográficas*, v. 2, p. 163–197, 2015.

DESA, U. World economic and social survey 2004: International migration. *United Nations Department of Economic and Social Affairs (UN DESA), New York, UN*, 2004.

DONNI, O.; MATTEAZZI, E. Collective decisions, household production, and labor force participation. *Journal of Applied Econometrics*, Wiley Online Library, v. 33, n. 7, p. 1064–1080, 2018.

DONNI, O.; MOREAU, N. Collective labor supply a single-equation model and some evidence from French data. *Journal of Human Resources*, University of Wisconsin Press, v. 42, n. 1, p. 214–246, 2007.

EEK, F.; AXMON, A. Gender inequality at home is associated with poorer health for women. *Scandinavian journal of public health*, Sage Publications Sage UK: London, England, v. 43, n. 2, p. 176–182, 2015.

FENGDAN, S. et al. Bargaining power and the household division of labour: Evidence from 2008 China time-use survey. *Asia-Pacific Population Journal*, v. 31, n. 1, 2016.

FERNANDES, M. M.; SCORZAFAVE, L. G. Estimação da oferta de trabalho com modelos de racionalidade coletiva: uma aplicação para o brasil. *Pesquisa e Planejamento Econômico*, v. 39, n. 2, 2009.

FERRANT, G.; PESANDO, L. M.; NOWACKA, K. Unpaid care work: The missing link in the analysis of gender gaps in labour outcomes. *Boulogne Billancourt: OECD Development Center*, 2014.

FLORO, M. S.; MILES, M. Time use, work and overlapping activities: evidence from Australia. *Cambridge Journal of Economics*, Oxford University Press, v. 27, n. 6, p. 881–904, 2003.

GOLDIN, C. *Understanding the gender gap: An economic history of American women*. [S.l.]: National Bureau of Economic Research, 1990.

GONÇALVES, S. L.; MENEZES-FILHO, N. A. O salário mínimo e a oferta de trabalho das famílias pobres: uma abordagem coletiva com os dados da PNAD contínua (2012-2015). *ENCONTRO NACIONAL DE ECONOMIA*, v. 43, 2015.

GREENE, W. H. *Econometric analysis*. [S.l.]: Pearson Education India, 2003.

GREENSTEIN, T. N. Economic dependence, gender, and the division of labor in the home: A replication and extension. *Journal of Marriage and Family*, Wiley Online Library, v. 62, n. 2, p. 322–335, 2000.

HECKMAN, J. J. Sample selection bias as a specification error. *Econometrica: Journal of the econometric society*, JSTOR, p. 153–161, 1979.

HENDY, R.; SOFER, C. *Within Resource Allocation in Egyptian Couples: Do Distribution Factors Matter*. [S.l.], 2009.

HSIEH, C.-T. et al. The allocation of talent and us economic growth. *Econometrica*, Wiley Online Library, v. 87, n. 5, p. 1439–1474, 2019.

LAHGA, A. E.; MOREAU, N. The effects of marriage on couples' allocation of time between market and non-market hours. IZA discussion paper, 2007.

LUNDBERG, S. Labor supply of husbands and wives: A simultaneous equations approach. *The Review of Economics and Statistics*, JSTOR, p. 224–235, 1988.

MACIEL, M. C. A divisão do trabalho doméstico e a oferta de trabalho dos casais no brasil. Universidade Federal de Pernambuco, 2008.

MADALOZZO, R.; MARTINS, S. R.; SHIRATORI, L. Participação no mercado de trabalho e no trabalho doméstico: homens e mulheres têm condições iguais? *Revista Estudos Feministas*, SciELO Brasil, v. 18, n. 2, p. 547–566, 2010.

MAIA, K.; LIRA, S. A. A mulher no mercado de trabalho. *Seminário De Economia Aplicada*, v. 2, 2002.

MATULEVICH, E. C. R.; VIOLLAZ, M. Gender differences in time use: Allocating time between the market and the household. *World Bank Policy Research Working Paper*, n. 8981, 2019.

MELO, H. P. d.; CONSIDERA, C. M.; SABBATO, A. D. Os afazeres domésticos contam. *Economia e Sociedade*, SciELO Brasil, v. 16, n. 3, p. 435–454, 2007.

PEARSE, R.; CONNELL, R. Gender norms and the economy: insights from social research. *Feminist Economics*, Taylor & Francis, v. 22, n. 1, p. 30–53, 2016.

SEIZ, M. Equality in confinement: Nonnormative divisions of labor in Spanish dual-earner families during the covid-19 lockdown. *Feminist Economics*, Taylor & Francis, v. 27, n. 1-2, p. 345–361, 2021.

SILVA, C.; CUNHA, M. S. Desempenho e fatores determinantes da oferta de trabalho de casais no brasil. *Revista de Economia e Agronegócio*, v. 18, n. 1, p. 1–21, 2020.

SUH, J. Measuring the "sandwich": Care for children and adults in the American time use survey 2003–2012. *Journal of family and economic issues*, Springer, v. 37, p. 197–211, 2016.

VERMEULEN, F. And the winner is... an empirical evaluation of unitary and collective labour supply models. *Empirical Economics*, Springer, v. 30, n. 3, p. 711–734, 2005.

WOOLLEY, F. Control over money in marriage. *Marriage and the economy: theory and evidence from advanced industrial societies*, Cambridge Univ Pr, v. 105, p. 128, 2003.

ZELLNER, A. An efficient method of estimating seemingly unrelated regressions and tests for aggregation bias. *Journal of the American statistical Association*, Taylor & Francis, v. 57, n. 298, p. 348–368, 1962.

Appendix A - Breusch-Pagan test results

Table 13 – Breusch-Pagan LM Diagonal Covariance Matrix Test (SUR)

Model	Lagrange Multiplier Test	Degrees of freedom	P-Value >Chi2(6)
General Model	5.262e+04	6	0.000
Traditional Households	4.267e+04	6	0.000
Egalitarian Households	5.338e+04	6	0.000
Non Traditional Households	6541.21801	6	0.000
Childless Couples	1.107e+04	6	0.000
Childless Single Men	112.32546	1	0.000
Childless Single Women	310.52899	1	0.000
Single Men	157.60397	1	0.000
Single Women	1258.56235	1	0.000
Without Elderly	5.150e+04	6	0.000
One Informal	4.450e+04	6	0.000
Dual Informal	2.785e+04	6	0.000

Note: $H0$: Run OLS; $H1$: Run SUR.
Source: Research results based on PNAD data, 2016-20109.