Gender division of household labor: How does culture operate?

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ABSTRACT

In this paper, we examine whether *culture plays a role* in the gender *division of household labor*. To explore this issue, we use data on early-arrival first- and second-generation immigrants living in the United States. Because all these individuals have grown up under the same laws, institutions, and economic conditions, the differences between them in the gender division of housework may be due to cultural differences. We find that the higher the culture of gender equality in the country of ancestry, the greater the equality in the division of housework. This is maintained when we consider both housework and childcare as household labor. Our work is extended by examining *how culture operates* and is *transmitted*. We study whether culture may influence the work/life balance.

Keywords: Culture, immigrants, housework, childcare

JEL Codes: D13, J13, Z13

1. INTRODUCTION

The dramatic increase in women's participation in the labor force has not appeared to be enough to achieve equality in the division of household labor (Dilli et al., 2019; Fuwa, 2004; Fuwa and Cohen, 2007; Knudsen and Wærness, 2007; McMunn et al., 2020). In the early twenty-first century, North American women reported performing nearly two-thirds of the household labor (Greenstein, 2009). Women spent an average of 13.5 hours per week in unpaid work, compared to 6.5 hours per week for their spouses (Fuwa and Cohen, 2007; Greenstein, 2009; Knudsen and Wærness, 2007). The persistence of the asymmetric gender division of housework in some societies is not a minor issue because it has been found to have consequences on demographic and socioeconomic variables such as women's careers (Becker, 1985; Polachek, 2006; Waldfogel, 1998), women's life satisfaction (Foster and Stratton, 2019), and fertility (Sevilla-Sanz, 2010), among others.

The characteristics of individuals do not appear to be enough to explain this apparently permanent gender gap in household tasks (Bianchi et al., 2000) nor does their involvement in the labor market. However, cultural issues can play an important role in the allocation of household tasks (Fuwa, 2004; McMunn et al., 2020). Fuwa (2004) explains that, in those countries where gender inequality is relatively severe, the time spent by women in paid work may not matter so much in determining the division of household labor. In contrast, women may be able to bargain the division of household labor according to their individual characteristics in more gender-equal countries. Only one recent paper explores the possible effect of culture on housework and childcare mainly using a sample of US immigrants (Blau et al., 2020). The main sample used there is problematic because an immigrant's behavior could be influenced not only by culture but also by other country-level characteristics. In that setting, disentangling the possible effect of culture from that of other economic and institutional characteristics of the country of origin is tricky. To our knowledge, this remains an unexplored issue. Our paper contributes to this literature, not only by studying whether *culture* may *explain*, at least in part, the *division of household labor*, but also by examining *how* culture *operates* and is *transmitted*.

What is culture? The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2001) defines culture as *the set of distinctive spiritual, material, intellectual, and emotional features of society or a social group. Not only does this encompass art and literature, but it also includes lifestyles, ways of living together, value systems, traditions, and beliefs.* To isolate the impact of culture from the effect of

institutions and economic conditions, we follow the epidemiological approach (Fernández, 2007) by exploring the behavior of early-arrival first- and second-generation immigrants whose ethnicity or country of origin is known. All those individuals have grown up in the same country, but they differ in their cultural backgrounds, so dissimilarities in the gender division of household labor of those immigrants (first- and second-generation) by country of origin can be interpreted as the existence of a cultural effect.

Our work contributes to the growing research on the effect of culture on socioeconomic and demographic outcomes (Fernández, 2011; Giuliano, 2016). Using methodologies quite analogous to ours, several papers show that culture plays a role in living arrangements (Giuliano, 2007), women's labor-force participation and fertility (Bellido et al., 2016; Contreras and Plaza, 2010; Fernández, 2007; Fernández and Fogli, 2006, 2009; Marcén et al., 2018), self-employment (Marcén, 2014), the search for a job (Eugster et al., 2017), the living-together decision (Marcén and Morales, 2019), divorce (Furtado et al., 2013), homeownership (Marcén and Morales, 2020), and even the math, reading, and science gender gap (Nollenberger et al., 2016; Rodríguez-Planas and Nollenberger, 2018).

In our empirical analysis, we use data from the Integrated Public Use Microdata Series Time Use (IPUMS Time Use) for the period 2006-2018 (Hofferth et al., 2018). Following Blau et al. (2020), González and Rodriguez-Planas (2020), and Nollenberger et al. (2016), culture is measured by using information on the 2018 World Economic Forum's Gender Gap Index. It should be noted that because the behavior of early-arrival first- and second-generation immigrants is unlikely to influence the gender-equality index of the country of ancestry, reverse causality is not a problem here (Nollenberger et al., 2016). We find that more gender-equal norms in the country of origin are associated with a higher relative housework time of men over women.

In addition, we present evidence suggesting how the gender norms culture in the country of ancestry can be transmitted. Following Furtado et al. (2013) and Nollenberger et al. (2016), the horizontal transmission of culture is studied by exploring whether individuals' sensitivities to the cultures of their countries of ancestry differ depending on whether they live in predominantly same-ethnicity communities. The stronger relationship between the cultural proxy and the males' housework time relative to that of females in predominantly same-ethnic communities may be interpreted as empirical evidence that culture is horizontally transmitted.

We extend our work to the analysis of how culture operates. No prior literature studies this for the division of household labor. First, we explore the time of day when couples are more likely to be together while the respondent does the housework tasks, and whether there are differences in the division of housework between working and non-working days, to analyze whether the culture on gender equality is operating through work/life balance and that of their partners. Then, we ask whether culture also operates through a variation of employment schedules or leisure time. Presser (1994) views employment schedules as an important factor of the time available for household labor. Because there are 1440 minutes per day, it is possible to hypothesize that the higher involvement in housework of early-arrival first- and second-generation immigrant men relative to women of more gender-equal countries of ancestry must be compensated for by the time spent on other activities.

The remainder of the paper is organized as follows. Section 2 describes the data, Section 3 presents the empirical strategy, Section 4 discusses the results, and Section 5 concludes.

2. DATA

Our main data source is the IPUMS Time Use for the period 2006-2018 (Hofferth et al., 2018), also known as the American Time Use Survey (ATUS). The ATUS is a nationally representative survey, conducted by the Bureau of Labor Statistics, that records detailed information about individuals' activities throughout the 24 hours of the previous day (from 4:00 AM to 4:00 AM). A single individual from each selected household is interviewed on a single day; both weekdays and weekend days were considered. The assigned ATUS diary days are distributed across the days of the week, with 10 percent allocated to each of the weekdays Monday through Friday, 25 percent to Saturdays, and 25 percent to Sundays. They are distributed evenly across the weeks of the year. This allocation of diary days is based on research showing that the allocation of time is relatively similar across the five weekdays, but that the allocation of time on the weekend days differs from that on weekdays and from that on the other weekend day (Horrigan and Herz, 2004). Respondents were asked by a computer-assisted telephone interviewer to report their own activities as well as how long the activity lasted, who was there, and where the activity took place.

Our sample selection consists of early-arrival first- and second-generation immigrants living in the US, coming from 31 countries of ancestry. We restrict our sample

to those individuals who report information about their housework activities and who have a married/unmarried partner present in the household.[1] Our sample contains 2,541 observations of respondents aged 29 to 80 years old.[2] The dataset on time use incorporates an extensive number of variables, but the number of first- and second-generation immigrants is scarce because this survey obtained information from a randomly selected subset of households from the Current Population Survey (CPS). This problem is reflected in the literature (Giuliano, 2007; Muchomba et al., 2020). Following González and Rodriguez-Planas (2020), both early-arrival first- and second-generation immigrants have been considered in order to amplify the size of our sample.[3] For the first generation, we select those immigrants living in the US who arrived in that country when they were aged 5 or younger, and who report their country of origin. In the case of the second generation, we select native individuals whose mothers' ancestry is reported, and we assign the mother's country of origin because the mother's culture has been found to be more important in the intergenerational transmission of gender roles (Blau et al., 2013).[4] Both generations can be considered quite similar (Furtado et al., 2013). Early-arrival immigrants, like second-generation immigrants, have been exposed to US economic conditions and institutions almost their entire lives and are not likely to have language barriers (Furtado et al., 2013).

With respect to the cultural proxy, following Nollenberger et al. (2016) and Rodríguez-Planas and Nollenberger (2018), we use a national-level index called The Gender Gap Index (GGI), available since 2006, from the 2018 World Economic Forum.[5]

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[1] Without a partner at home, individuals cannot share the housework, which makes tricky the comparison between individuals with/without a partner at home. In any case, we have included all individuals (with/without a partner) in Table A1 in the Appendix. The results do not vary. However, we do not observe a significant effect of the GGI in the case of those living without a partner. For this reason, we maintain the sample of individuals with a partner present in the rest of the analysis.

[2] We have eliminated those countries of origin with fewer than 15 observations per country, as in prior studies (Furtado et al., 2013). Note that the sample is limited to those living in an identifiable US state. The main results are maintained using a sample of individuals aged 29 to 64 to include only those who are likely to have completed schooling and are below the retirement age, see below (Furtado et al., 2013).

[3] The sample of second-generation immigrants represents 73.5% of our sample (1,868 individuals); we have repeated the analysis with only those second-generation immigrants and we find evidence of the effect of culture, see below.

[4] We have rerun our analysis without those with an American father, and our results do not change.

[5] The ATUS contains information since 2003 but because the cultural proxy has been available only since 2006, we have restricted our sample to the years in which the cultural proxy is available. This is based on the idea that both generations of immigrants behave in the same way as their counterparts in their country of ancestry, which is a common strategy in the epidemiological approach, see Furtado et al. (2013). We have repeated the analysis using the Gender Inequality Index provided by the United Nations Development Programme. We find that the higher the gender inequality in the country of ancestry, the lower the equality

The GGI incorporates a variety of indicators that measure the social, political, and economic equality of men and women. As Nollenberger et al. (2016) claim, the GGI is a good proxy of gender norms/culture because it reflects economic and political opportunities, education, and well-being for women in the country of ancestry. The GGI is formed by four different sub-indexes ranging from 0 to 1: Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment (see a detailed description in Table B1 in the Appendix).[6]

Table 1 reports summary statistics for the main variables by country of ancestry, ordered from lowest to highest gender gaps in housework time (column 1). The first column shows the average gap in housework time for early-arrival first- and second-generation immigrants, calculated as the average male's housework minus that of females by country of ancestry (in minutes per day).[7] Hence, a negative gap means that females over-perform males in time while a positive gap means the opposite. Large variations in the gender gap in housework time across countries of ancestry are observed but appear to be statistically significant differences only when females perform 30 or more minutes of housework per day than males. The rest of the columns show the cultural proxies by country of ancestry. The higher values indicate greater gender equality in that society. Our main variable, the GGI, averages 0.71, varying from 0.64 in India, South Korea, and Guatemala to 0.83 in Norway. There are enough variations across countries to run the analysis proposed here (Nollenberger et al., 2016). Note that for some of the sub-indexes that comprise the GGI, there are no differences across some countries (GGI in health and education).

Figure 1 presents the relationship between the gender gap in housework time in the US and the GGI by country of ancestry. This figure suggests that the greater the culture of gender equality in the country of ancestry, the lower the gender gap in housework for both generations of immigrants. What the raw data also appear to show is that the higher the gender equality in the country of origin the less time women spend on housework and the more time men devote to those tasks (Figure A1). Both relationships point to a decrease in the gender gap in housework time if there is greater gender equality in the

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in the division of housework among first- and second-generation immigrants in the US. The results do not vary (see Table A2 in the Appendix).

[6] We have repeated the analysis using each of those sub-indexes separately. We revisit this issue below.

[7] The limitations of the data include the possibility that respondents tend to over or underreport their housework time depending on the gender equality culture of their country of ancestry.

country of ancestry. This is not a conclusive analysis and we must study this issue more deeply here.

3. EMPIRICAL STRATEGY

Following the epidemiological approach, our empirical strategy is based on the fact that both early-arrival first- and second-generation immigrants have lived under the same US markets and institutions. Thus, if only institutions and markets are important in the gender division of housework of both generations of immigrants, we would expect no effect of the home-country cultural proxy. On the other hand, if individuals form their identities based on the culture of gender norms (Akerlof and Kranton, 2000), and if this is transmitted vertically (across generations) or horizontally (within communities) by the providing of acceptable role models or the punishing of behavior different from the norm (Fernández and Fogli, 2009), we would expect to observe that the GGI, the home-country cultural proxy, does affect the gender division of housework of early-arrival first- and second-generation immigrants in the host country—in our case, the US. To explore this issue, we estimate the following equation:

$$Y_{ijkt} = \beta_0 + \beta_1 Male_i + \beta_2(Male_i * GGI_{jt}) + X'_{ijkt}\beta_3 + \boldsymbol{\delta_k} + \boldsymbol{\eta_j} +$$

$$+\mu(\boldsymbol{\delta_k} * Male_i) + \boldsymbol{\theta_t} + \varepsilon_{ijkt} \tag{1}$$

with Y_{ijkt} being the housework time (minutes per day) reported by individual i of cultural origin j living in state k in year t.[8] The variable $Male_i$ is a dummy variable that takes the value of one if the individual is a male and zero otherwise. The cultural proxy, GGI_{jt}, is the measure of culture in the country of ancestry j in year t.[9] A higher value of this index represents a more gender-equal culture. β_2 is the coefficient of the interaction between the GGI_{jt} and the male indicator, which is our coefficient of interest.[10] According to the theoretical framework proposed by Blau et al. (2020), based on a utility maximization problem where utility depends additively on a gender norm function that penalizes the

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[8] Housework includes interior cleaning, laundry, sewing, repairing and maintaining textiles, storing interior household items including food, and food and drink preparation, presentation, and clean-up.

[9] It should be noted that, for the cultural proxy, we use a contemporaneous measure, which is common in the literature (Fernández and Fogli, 2009; Furtado et al., 2013; Marcén et al., 2018; Marcén and Morales, 2019, 2020).

[10] See a similar empirical strategy in Nollenberger et al. (2016) or Rodríguez-Planas and Nollenberger (2018).

wife's market work relative to the husband's market work, β_2 should be positive. The wife's market work will decrease in the magnitude of the gender norm (and, hence, her non-market work will increase), while the husband's market work will increase in the magnitude of the gender norm (and, hence, his non-market work will decrease). Because both men and women move in opposite directions, we can expect that higher gender-equal attitudes in the immigrant's country of ancestry would be associated with a higher relative housework time of early-arrival first- and second-generation immigrant males over females. The vector X_{ijkt} incorporates a set of individual characteristics of the respondent i and his/her partner. We include controls for age, educational level (more college or not), employment status (employed or not), race, immigrant status (second generation or not), working during non-standard hours, having a partner of the same ethnicity, and the presence of children in the households; these are found to be related to time spent on household labor and child care (Bianchi et al., 2000; Fuwa, 2004).[11] Controls for unobserved characteristics of the place of residence are added by using state fixed effects, denoted by δ_k. To capture unobserved characteristics of the country of ancestry, we introduce country of ancestry fixed effects, η_j, while to pick up the time-variant unobserved characteristics, we add year fixed effects, θ_t. State fixed effects (δ_k) are interacted with $Male_i$ to account for variation in the state's housework gender gaps that may arise from differentials across states in cultural or institutional channels. Standard errors are clustered at the country of ancestry level to account for any within-ethnicity correlation in the error terms.[12]

With this empirical strategy, we examine the impact of culture on the housework time of males over females. This is a different proposal to analyze the impact of culture on the gender division of housework with regard to that presented in Blau et al. (2020). They focus on the association between the GGI and housework time, dividing the sample between males and females.[13] We also explore how culture operates and can be transmitted; see below.

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[11] A typical work schedule is considered from 9.00 to 18.00. Some of the individual traits have been integrated with the male indicator to capture possible gender differentials. The results do not vary with/without these controls.

[12] All estimates have been repeated with/without weights and clusters. The results do not vary. To ease interpretation of the results, we show the results after standardization of the GGI, see Table A3.

[13] Another important difference with Blau et al. (2020) is the sample selection. Our sample of individuals is less likely to be influenced by the economic and institutional conditions of the country of ancestry because they have lived almost their entire lives in the US, as explained above.

4. RESULTS

a. Does culture matter?

Table 2 reports the estimates of equation (1). Column 1 reveals that males underperform females in housework time by, on average, around 68 minutes. This is close to what is observed in the literature, where the gender gap is around seven hours per week between women and their partners in the US (Fuwa and Cohen, 2007; Greenstein, 2009; Knudsen and Wærness, 2007). In the rest of the columns, we introduce the interaction between the male dummy and the home-country cultural proxy, which informs us about the effect of culture on the gender gap in housework. The estimated coefficient on the term of interaction is positive and statistically significant in column 2, suggesting that the gender gap in housework time decreases among those originating from countries of ancestry with more egalitarian attitudes. We find that a one standard deviation increase in the GGI is associated with an increase of 16 minutes in the housework time per day of males relative to females, which represents 54 percent of the standard deviation in the housework gender gap across countries of ancestry. Under the epidemiological approach, this empirical evidence can be interpreted as a cultural effect. Comparing countries of ancestry, the housework time of males relative to females from the country with the highest GGI, Norway (0.83), is about 61 minutes per day higher than that of individuals from India, one of the countries of ancestry with the lowest GGI (0.64).[14] In column 3, we add controls for the characteristics of the respondent and his/her partner. Our findings do not change.

We explore whether our results are maintained when utilizing different subsamples, and incorporating observable characteristics at the country of ancestry level. In column 4 of Table 2, we exclude the countries with the highest (Norway) and lowest (India, South Korea, and Guatemala) country of ancestry GGI to check whether this is driving our estimates. Furthermore, in column 5, we have eliminated those early-arrival first-generation immigrants from Mexico and those second-generation immigrants whose parents were Mexicans, which is the country of ancestry with the largest number of observations.[15] There are no changes in our findings. Our results are also maintained when

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[14] We have added to the Appendix (Figure A2) the predictive margins graphically, to get a better sense of the magnitude of the effect from the minimum to the maximum levels of the GGI index.

[15] This is a common strategy in the literature to check the consistency of the effect of culture, see Furtado et al. (2013).

we restrict our sample by including those individuals aged 29 to 64 in column 6. We can conclude the same when we add GDP per capita (in constant 2010 US $) as a control for the countries of ancestry characteristics in column 7 to lessen the possible concerns that we would be capturing the effect of other country of ancestry differences rather than that of culture.[16] Our estimations do not vary substantially. The inclusion of some of the controls can generate concerns because they can potentially be affected by culture, though it is reassuring that our results do not change in all the robustness presented here.

Although we show evidence that culture appears to be important in the housework division, it can be suggested that culture may play a major role in some subgroups of individuals (heterogeneity analysis). For example, low-educated individuals can be more affected by the social pressure of maintaining gender roles, whereas high-educated individuals can be less ostracized if they do not follow the pattern of behavior in their country of ancestry (González and Rodriguez-Planas, 2020; Rodríguez-Planas, 2018). To check this, we repeat the analysis by separating the sample between low- and high-educated individuals.[17] Columns 1-2 of Table 3 present the estimations. Estimated points appear to indicate that culture persists among both low and educated individuals but we cannot reject with certainty that both differ from each other.[18] In the same line, it is possible to hypothesize that those couples with children are more likely to follow the culture on gender norms. To test this, in column 3 we consider a sample of individuals with children. The results are maintained. This should be taken with caution because the home-country culture can also be affected by the decision to have children and because we are not considering the heterogeneity within countries of origin in the definition of the cultural proxy. In columns 4-5, we explore whether culture has a differential effect on men's housework time relative to women according to their age. To do so, we separate the analysis between those below and above the age of 55 years old. The effect of culture is detected in both subsamples, though there are no significant differences among those subgroups of individuals.

In addition, to resolve the concerns that the gender division of housework time is attributed to the preference of one of the members of the couple and not to the beliefs and preferences of the other member, we have repeated our analysis by separating among

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[16] We also interact the GDP per capita with the male indicator and nothing changes.
[17] We define high-educated individuals as those individuals having completed at least a bachelor's degree.
[18] We have tested the possible differences between both groups and the p-value is 0.47. See Table A4 in the Appendix.

individuals with a same/different origin partner in columns 6-7.[19] We detect an empirical statistical relationship in both subsamples, although the effect of culture is significantly higher among those living with a same-ethnicity partner.[20]

Some researchers define household labor as including childcare activities (Badr and Acitelli, 2008; Hook, 2006). It can be argued that culture affects the allocation of both childcare time and housework tasks. To check this issue, we consider both housework and childcare as household labor. We restrict our sample to those individuals spending time in childcare with children under 18 years old in the household. Our dependent variable is redefined as the time (in minutes per day) that each individual spends on both housework and childcare.[21] Column 8 of Table 3 displays the results. The coefficient on the interaction between the male dummy and the cultural proxy is still positive and statistically significant after the introduction of the childcare time. Estimations reveal that when the cultural proxy (GGI) increases by one standard deviation, there is an increase of around 34 minutes per day in the household labor time of males relative to females, which is in line with the importance of culture suggested above. Because fertility culture may also influence the decision of whether or not to have children, we prefer to focus the rest of the analysis on the housework time rather than considering both housework and childcare together. It should also be noted that the number of observations considerably decreases when childcare time is considered.

b. How can culture be transmitted?

With respect to the transmission of culture, the literature has described two kinds of transmissions: vertical (across generations) and horizontal (within communities). As suggested in Furtado et al. (2013), parents instill in their children beliefs and preferences representing their home-country culture. In our framework, because we identify the

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[19] About 25% of the individuals in our sample share the same ancestry as their partners. We recognize that a possible source of selection is the propensity for men and women in countries with different levels of gender equality to be partnered.

[20] Note that in the rest of the specifications we include a dummy variable to control for whether partners share the same ethnicity. The results are also maintained when both respondent and partner country of ancestry are included, see Table A5 in the Appendix.

[21] Caring for children includes physical care for household children, reading to/with household children, playing with household children, arts and crafts with household children, playing sports with household children, talking with/listening to household children, helping or teaching household children, organizing and planning for household children, looking after household children (as a primary activity), attending household children's events, waiting for/with household children, picking up/dropping off household children, caring for and helping household children, activities related to household children's education, and activities related to household children's health.

culture of the second-generation immigrants with that of their mother's home country, the vertical transmission of culture would be necessary to find a cultural effect. This is also suggested in prior literature (Antecol, 2000; Fernández and Fogli, 2006; Giuliano, 2007; Marcén, 2014; Nollenberger et al, 2016; Rodríguez-Planas, 2018). Columns 1-2 of Table 4 present estimates for early-arrival first- and second-generation immigrants, separately. We find that the effect of culture is detected for the second-generation of immigrants. Thus, at least in part, these findings on the effect of culture on the gender division of housework may be the result of that vertical transmission from parents to their children.

The existence of horizontal transmission is based on the idea that ethnic communities may provide acceptable role models or punish behavior different from the norm (Fernández and Fogli, 2009). To explore this transmission of culture, we examine whether individuals' sensitivities to their country of ancestry GGI differ depending on whether they live in predominantly same-ethnic communities. As Furtado et al. (2013) suggest, the stronger relationship between the cultural proxy and males' housework time relative to that of females in predominantly same-ethnic communities may be interpreted as empirical evidence that culture is horizontally transmitted. To check this, we rerun our main analysis by separating the sample between those who are above and those who are below the mean of concentration of same-ethnic individuals, as in Rodríguez-Planas and Nollenberger (2018). The results show that the effect of culture on males' housework time relative to that of females appears to be larger for early-arrival first- and second-generation immigrants living in states with a high concentration of individuals from the same ethnicity (above the mean) than for those who live in low-concentrate states (below the mean), which can be interpreted as a possible existence of horizontal transmission of culture (Columns 3-4 of Table 4).[22]

c. Channels of shaping culture from the country of ancestry

Up to now, we have used the GGI in the country of ancestry as our measure of culture. In this subsection, we explore which aspects of the country of ancestry can be responsible

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[22] We have repeated the analysis using the interaction term between the GGI, the dummy variable for male individuals, and the following variables measuring ethnic concentration: the proportion of individuals from the same country of origin in each state and a dummy variable capturing whether this concentration is above the mean concentration, above the 50th percentile, and above the 75th percentile. All our estimates suggest that the higher the ethnic concentration in a state, the greater the effect of culture on the housework time of men relative to women (see Table A6 in the Appendix).

for the culture that appears to affect the gender division of housework in the host country. We separately utilize each of the four sub-indexes that defined the GGI: Gender Gap Educational Attainment Sub-index, Gender Gap Economic Participation and Opportunity Sub-index, Global Gender Gap Health and Survival Sub-index, and Gender Gap Political Empowerment Sub-index. Although all these variables may reflect, in part, the beliefs about the role of women in society, they capture different aspects of culture and, hence, may provide a sense of what types of channels in the country of ancestry are shaping the gender cultural attitudes that ultimately affect the housework gender gap. Table 5 shows the estimated coefficients. All but one (health and survival gap) are statistically significant. Beliefs transmitted to first- and second-generation immigrants regarding educational attainment, women's political empowerment, and women's economic opportunity appear to be driving the gender gap in the division of household labor.

d. How can culture operate?

1. Housework a non-individual task: Time of day and differences between working and non-working days

We have shown empirical evidence suggesting that culture may explain, at least in part, the gender division of household labor. Here, we provide further evidence of how culture operates. Unfortunately, we cannot study whether the culture on gender equality implies that both members of the couple share housework tasks, as the ATUS provides information only on the allocation of time of the respondents. However, we know whether individuals perform housework with their partners present. To our knowledge, the "who-with" information from time diaries is considered in the literature that explores how parental preferences and investment are reflected in the time spent with children present (Lundberg et al., 2007; Mammen, 2011; Allard et al., 2007). There is no prior research examining how the within couples' preferences affects when and with whom they spend their housework time. It can be argued that if someone behaves following their culture, surely s/he wants his/her partner to realize that. When someone works for pay, s/he receives a salary that reflects his/her productivity, but in housework, this is tricky because there is no salary; one way to show how someone spends time on housework is by having the other partner present. It may be interesting to examine whether culture operates by affecting how housework is performed and when this takes place, which may be useful for understanding the work/life balance of couples as a result of cultural differences. To

check this, we analyze the time of day when couples are more likely to be together while the respondent reports performing housework tasks. We estimate the following equation:

$$Y_{ijkt} = \beta_0 + \beta_1 GGI_{jt} + X'_{ijkt}\beta_2 + \delta_k + \eta_j + \theta_t + \varepsilon_{ijkt} \qquad (2)$$

Table 6 shows the estimations. The dependent variable takes the value of one when individual i of cultural origin j living in state k in year t reports performing at least one housework activity with his/her married/unmarried partner present in the morning (column 1), in the afternoon (column 2), in the evening (column 3), and at night (column 4), and 0 otherwise.[23] The vector X_{ijkt} includes a set of individual and partner characteristics. The rest of the variables have been defined before. Our coefficient of interest is β_1. If the culture on gender equality norms operates by making housework a non-individual task, β_1 should be positive. As can be seen, the only estimated coefficient that is statistically significant at the 5% level is that obtained in column 3. Our results indicate that the greater the egalitarian gender norms in the country of ancestry, the higher the probability of doing housework tasks in the evening with the presence of the married/unmarried partner. This analysis is important because it can contribute to the literature focused on the conflict between work schedule and family life. The seminal work of Presser (2000, 2003) and Kelly et al. (2011) suggests that working non-standard hours can be detrimental to family life. Then, our findings on the time of day when housework is performed with the married/unmarried partner present matches with working in standard hours for those individuals originating from a more egalitarian culture. In the next subsection, we revisit how culture operates for paid labor work/leisure.

Because the ATUS provides information about the day on which activities are developed, we can examine whether there are differences in the division of housework between working and non-working days as a consequence of cultural differences. This analysis can provide additional evidence on how that culture operates by way of the work/family balance of individuals. We estimate equation 1 separately depending on the day of the week on which housework is done. Results are reported in Table 7. We first consider those who respond from Monday to Saturday, excluding public holidays in column 1 and those individuals responding during Sundays and public holidays in column 2. Our findings are maintained regardless of the day of the week. Similarly, we have rerun

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[23] We have re-run this specification using a probit model and the results do not vary, see Table A7 in the Appendix. The linear probability model is shown for simplicity and appears to be appropriate when nested models are used (Mood, 2010).

the analysis excluding Saturdays in column 3 to be included jointly with Sundays and public holidays in column 4. What is detected is that culture matters in the gender division of housework during working/non-working days. Again, our findings point to the importance of culture in the gender division of housework.

2. Which activities are negatively affected because of culture? Work or Leisure

Every day in the life of a person has 1,440 minutes. In this setting, we have observed that the more gender-equal a country's culture is, the higher the involvement in housework of early-arrival first- and second-generation immigrant men relative to women. Then, the longer the time spent on housework, the lower the time available for other activities during the day. If culture matters, as we have explained here, we should observe that culture operates by decreasing the time spent on other activities, such as paid labor and/or leisure.[24] We focus on male behavior, choosing a sample of men who are employed.[25]

Our estimates can be observed in Table 8. We find that the greater the cultural proxy, the lower the time spent in leisure for those employed men; however, for paid-labor time, culture appears to not be statistically significant. Then, culture appears to operate by varying the time spent on leisure.[26] This provides additional evidence to reinforce our findings on the effect of culture on the gender division of household labor.

5. CONCLUSIONS

During the last decades, women have made important advances in many areas where they once were marginalized, entering the public spheres of education, employment, and politics. However, they continue to confront discriminatory attitudes and practices (Dilli et al., 2019). One of the areas in which women have not completely broken through the glass ceiling is the sphere of the household, which requires the amplification of the responsibility for the care of home and children equally to both partners (McMunn et al., 2020). Some researchers have pointed to cultural issues related to gender norms as being

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[24] Paid labor includes work and work-related activities (such as socializing, eating, and practicing exercise or security procedures as part of a job), other income-generating activities, job searching, and interviewing. Leisure includes socializing and communicating, attending or hosting social events, relaxing, and leisure, arts, and entertainment activities.

[25] In this case, we select individuals aged 29 to 64 to mitigate the problem that the inclusion of those individuals in retirement age can generate in this analysis.

[26] We have checked the relationship between hourly earnings and paid labor time (in hours) and our estimated coefficients are not statistically different from zero. Similarly, we do not observe a significant relationship between the GGI and hourly earnings, see Table A8.

determinant of achieving equality in the performance of housework (Fuwa, 2004; McMunn et al., 2020). In our paper, we aim to study whether culture affects the gender division of household labor.

Merging data from the IPUMS American Time Use and the GGI (cultural proxy) in the country of ancestry, this paper shows that the housework time of early-arrival first- and second-generation immigrant males (relative to females) who are descended from more gender-equal countries is greater than that of those descending from less gender-equal countries. Our results are maintained after several robustness checks and do not change when we consider both housework and childcare as household labor. We also explore the transmission of culture showing empirical evidence of horizontal transmission of culture through neighbors or ethnic communities, as well as of vertical transmission from parents to children. Moreover, we find that cultural attitudes regarding educational attainment, women's political empowerment, and economic opportunity in the country of ancestry matter in determining the housework gender gaps of first- and second-generation immigrants in the host country. These findings reinforce our results on the possible importance of culture in the division of household labor.

Not only do we examine whether the culture on gender roles plays a role in housework but we also extend our work to the study of how culture operates, focusing on the combination of mechanisms that can affect family life. Estimations suggest that the greater the equalitarian gender norms in the country of ancestry, the more likely early-arrival first- and second-generation immigrants are to perform housework with their married/unmarried partner present. Thus, one channel through which culture on gender-equality is operating in family life is making housework a non-individual activity. This can be possible only if schedules allow couples to do that (Presser, 2000, 2003). Thus, another channel in which culture is operating is the time of the day when housework is performed. Our results indicate that greater gender equality is associated with a higher probability of doing housework activities in the evening in the presence of partners. As the literature suggests, this may indicate that culture is operating through working schedules, with standard schedules improving family life (Presser, 2000, 2003). Culture appears to be operating during working and non-working days, especially by decreasing the time spent on leisure. These findings suggest that the cultural impact on the gender division of housework is operating through the work/life balance.

Recognizing women's difficulties in combining family and work, a wide range of family policies has emerged. For example, the provision of childcare and the development

of more flexible working patterns on the job are considered necessary to account for gender inequality in the division of household labor underlying work/family balance. Nevertheless, our results suggest that policies aimed at transforming gender norms should be an important step in attaining gender equality in household labor. More egalitarian social norms may lower the penalty that men face for engaging in traditionally female domestic activities, resulting in more household labor being done by men.

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Figure 1: Housework gender gap and the Gender Gap Index (GGI) by country of ancestry
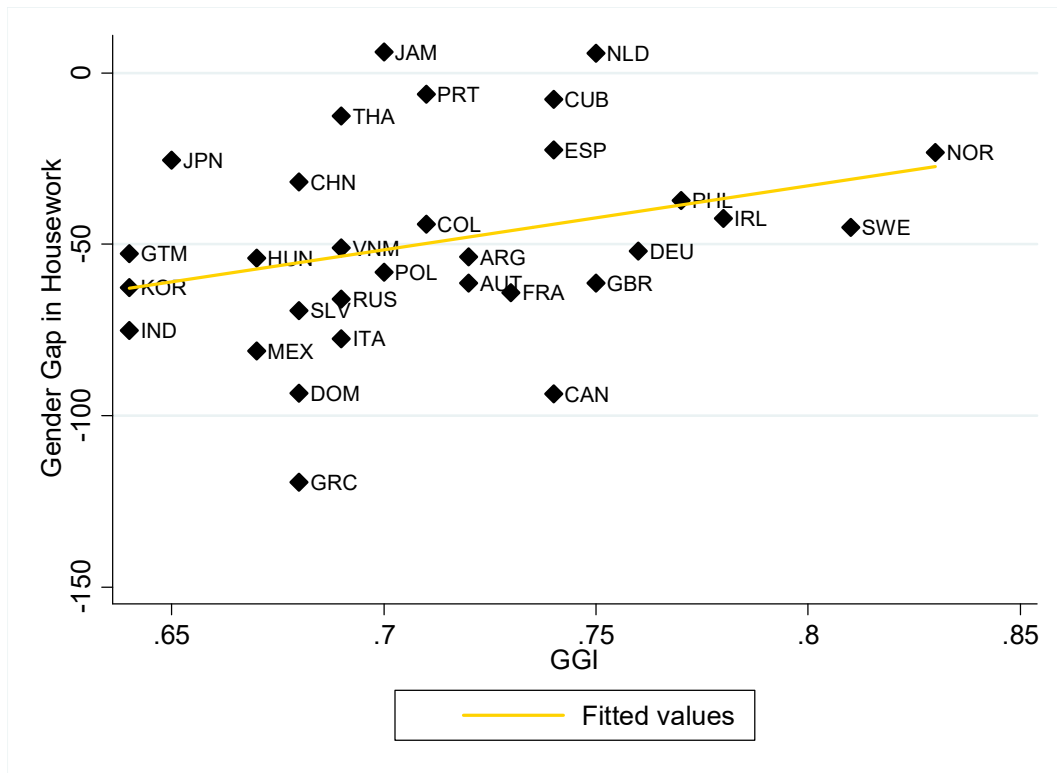
Notes: This figure displays the relationship between the average gender gap in housework time among first- and second-generation immigrants and our measure of culture in the country of ancestry. The housework gender gap has been calculated as the average male's minus the average female's housework time (in minutes per day).

Table 1: Summary statistics by country of ancestry

Country of ancestry	Housework gender gap	GGI	GGI educ.	GGI Ec. Opp.	GGI health	GGI pol.	Obs
Jamaica	6.07	0.70	0.99	0.73	0.98	0.12	17
Netherlands	5.74	0.75	1.00	0.70	0.97	0.34	38
Portugal	-6.15	0.71	0.99	0.69	0.97	0.20	26
Cuba	-7.75	0.74	1.00	0.63	0.97	0.34	62
Thailand	-12.47	0.69	0.99	0.75	0.98	0.07	25
Spain	-22.53	0.74	1.00	0.63	0.97	0.36	27
Norway	-23.25	0.83	1.00	0.80	0.97	0.54	16
Japan	-25.37	0.65	0.99	0.57	0.98	0.07	79
China	-31.88*	0.68	0.97	0.67	0.93	0.15	104
Philippines	-37.15	0.77	1.00	0.78	0.98	0.34	91
Ireland	-42.37*	0.78	1.00	0.72	0.97	0.42	70
Colombia	-44.16	0.71	1.00	0.70	0.98	0.16	29
Sweden	-45.13	0.81	1.00	0.79	0.97	0.50	19
Vietnam	-51.07	0.69	0.93	0.73	0.96	0.13	23
Germany	-52.02***	0.76	0.99	0.71	0.98	0.37	280
Guatemala	-52.80**	0.64	0.94	0.55	0.98	0.08	16
Argentina	-53.60*	0.72	1.00	0.60	0.98	0.29	18
Hungary	-54.00	0.67	0.99	0.66	0.98	0.06	18
Poland	-58.23**	0.70	1.00	0.66	0.98	0.18	55
United Kingdom	-61.31***	0.75	1.00	0.71	0.97	0.31	170
Austria	-61.35**	0.72	0.99	0.63	0.98	0.27	35
South Korea	-62.70**	0.64	0.95	0.52	0.97	0.10	51
France	-64.04**	0.73	1.00	0.66	0.98	0.27	33
Russia	-66.00	0.69	1.00	0.73	0.98	0.07	22
El Salvador	-69.32**	0.68	0.99	0.59	0.98	0.18	30
India	-75.22***	0.64	0.87	0.41	0.94	0.33	47
Italy	-77.57***	0.69	0.99	0.58	0.97	0.20	186
Mexico	-81.11***	0.67	0.99	0.53	0.98	0.20	632
Dominican Republic	-93.50**	0.68	0.99	0.63	0.97	0.12	21
Canada	-93.60***	0.74	1.00	0.76	0.97	0.21	265
Greece	-119.50***	0.68	0.99	0.64	0.98	0.11	36
Average	-49.46	0.71	0.99	0.65	0.97	0.23	
Std. Dev.	29.66	0.05	0.03	0.09	0.01	0.13	

Notes: Data comes from the Integrated Public Use Microdata Series Time Use (IPUMS Time Use) for the period 2006-2018. The sample contains 2,541 observations of early-arrival first- and second- generation immigrants, aged 29 to 80, originating from 31 different countries. The statistical significance of differences is computed using t-type tests for the housework gender gap in Table 1. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

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Table 2: The effect of culture on gender division of housework

Dependent variable: Housework time	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Male	-67.908***	-243.806***	-240.437***	-231.036**	-207.287***	-185.984*	-237.418**
	(7.566)	(71.995)	(72.684)	(85.494)	(73.200)	(98.547)	(89.703)
GGI x Male		319.269***	322.113***	307.164***	306.129***	262.555**	317.183***
		(88.360)	(85.775)	(96.954)	(91.709)	(99.207)	(112.653)
Age			-1.324***	-1.447***	-1.149**	-1.382**	-1.315***
			(0.372)	(0.358)	(0.469)	(0.581)	(0.375)
Age x Male			-0.214	-0.151	-0.417	-0.360	-0.202
			(0.269)	(0.277)	(0.317)	(0.356)	(0.298)
Employed			-73.458***	-74.953***	-72.329***	-75.498***	-73.616***
			(5.462)	(5.337)	(8.376)	(7.197)	(5.472)
Employed x Male			30.137***	29.996**	29.419*	22.800**	30.884***
			(10.667)	(10.941)	(14.866)	(10.543)	(11.042)
More college			-18.935***	-19.855***	-18.620**	-17.899*	-19.023***
			(6.328)	(6.771)	(7.409)	(9.078)	(5.985)
More college x Male			17.781**	17.128**	17.168*	13.409	18.054**
			(7.624)	(8.322)	(9.015)	(9.612)	(6.939)
White			16.821	7.815	7.775	17.521	16.576
			(13.670)	(14.641)	(14.874)	(11.186)	(13.572)
White x Male			-14.244	-10.924	-13.911	-7.516	-13.760
			(10.835)	(11.456)	(13.128)	(10.846)	(9.753)
Non-standard schedule			-20.432***	-22.158***	-22.583***	-18.744***	-20.906***
			(5.230)	(5.361)	(7.072)	(6.362)	(5.173)
Non-standard schedule x Male			-0.337	1.194	0.482	-1.591	-0.264
			(8.286)	(8.911)	(10.850)	(8.391)	(8.140)
Same origin partner			14.603*	14.920*	11.152	17.486***	14.518*
			(7.260)	(7.433)	(12.340)	(6.625)	(7.317)
Children			4.236	4.141	-3.401	5.405	4.661
			(8.105)	(8.853)	(7.203)	(7.658)	(8.040)
Second-generation immigrants			-9.869**	-9.011**	-10.168	-5.765	-9.780**
			(8.105)	(4.175)	(6.569)	(4.005)	(4.310)
Partner' age			0.605	0.638	0.287	1.161**	0.612
			(0.486)	(0.508)	(0.550)	(0.503)	(0.489)
Partner' more college			0.523	0.583	-3.285	-0.796	0.308
			(6.602)	(6.986)	(7.975)	(6.861)	(6.534)
Partner' white			-11.934	-8.865	-8.617	-8.204	-11.925
			(8.019)	(8.772)	(9.466)	(8.532)	(7.982)
GDPpc							-0.001**
							(0.001)
GDPpc x Male							-0.00003
							(0.000)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of ancestry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE x Male	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,541	2,541	2,541	2,411	1,909	2,401	2,541
R-squared	0.168	0.190	0.265	0.269	0.290	0.289	0.266

Notes: Data comes from the Integrated Public Use Microdata Series Time Use (IPUMS Time Use) for the period 2006-2018. The sample contains 2,541 observations of individuals aged 29 to 80, originating from 31 different countries. We have excluded those first- and second-generation immigrants from Norway, India, South Korea and Guatemala in column 4, and those from Mexico in column 5. Column 6 only includes individuals aged 29 to 64 years old. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level

Table 3: Heterogeneity analysis

Dependent variable: Housework time	(1) Low educated	(2) High educated	(3) With children	(4) Aged 29 to 54	(5) Aged 55 to 80	(6) Same ethnicity partner	(7) Different ethnicity partner	(8) Housework and childcare time
Male	-282.117***	-258.277*	-241.403***	-189.331**	-197.035	-818.458***	-176.690*	-571.474***
	(66.997)	(127.730)	(68.195)	(78.852)	(161.141)	(190.745)	(92.610)	(80.763)
GGI x Male	335.551***	338.016**	407.474***	280.232**	271.534**	988.251***	244.998**	676.329***
	(67.682)	(149.910)	(103.275)	(110.057)	(109.448)	(238.791)	(117.796)	(124.420)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of ancestry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE x Male	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,360	1,181	1,604	1,827	714	624	1,917	1,820
R-squared	0.303	0.266	0.264	0.299	0.374	0.397	0.282	0.296

Notes: We separate the sample between low and high educated individuals in columns 1 and 2, individuals with children in column 3, below and above the age of 55 years old in columns 4 and 5 and those living with a same or different ethnicity partner in columns 6 and 7. We consider both housework and childcare as household labor in column 8. All estimates control for the characteristics of the respondent and his/her partner included in Table 2. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Table 4: Transmission of Culture

Dependent variable: Housework time	(1) 2nd generation immigrants	(2) 1st generation immigrants	(3) Concentration same-ethnicity above the mean	(4) Concentration same-ethnicity below the mean
Male	-182.981*	-324.620**	-343.613***	-215.904***
	(103.690)	(148.811)	(84.211)	(70.012)
GGI x Male	245.670**	413.225	532.810***	243.248**
	(113.167)	(246.171)	(141.049)	(100.262)
Year FE	Yes	Yes	Yes	Yes
Country of ancestry FE	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes
State fixed effects x Male	Yes	Yes	Yes	Yes
Observations	1,868	673	1,083	1,458
R-squared	0.266	0.441	0.350	0.244

Notes: Early-arrival second- and first-generation immigrant have been separated in columns 1 and 2, respectively. Columns 3 and 4 include immigrants living in states where the concentration of individuals of their same country of ancestry is above and below the mean of the proportion of individuals of the same ethnicity, respectively. All estimates control for the characteristics of the respondent and his/her partner included in Table 2. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level

Table 5: Institutional channels from the country of ancestry shaping culture

Dependent variable: Housework time	(1)	(2)	(3)	(4)
Male	-512.865***	-86.773**	-111.468	-41.610
	(155.410)	(38.029)	(253.584)	(35.127)
Gender Gap Educational Attainment x Male	506.753***			
	(147.096)			
Gender Gap Economic Participation and Opportunity x Male		113.824**		
		(44.049)		
Global Gender Gap Health and Survival Subindex x Male			94.451	
			(267.465)	
Gender Gap Political Empowerment Subindex x Male				103.246***
				(32.836)
Year FE	Yes	Yes	Yes	Yes
Country of ancestry FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
State FE x Male	Yes	Yes	Yes	Yes
Observations	2,541	2,541	2,541	2,541
R-squared	0.263	0.264	0.262	0.264

Notes: All estimates control for the characteristics of the respondent and his/her partner included in Table 2. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Table 6: How does culture operate? The timing of the day when housework is performed with the married/unmarried partner present

Dependent variable:	(1) Performing household activities in the morning	(2) Performing household activities in the afternoon	(3) Performing household activities in the evening	(4) Performing household activities in the night
Gender Gap Index	0.998	-0.210	1.572**	0.357
	(0.949)	(0.810)	(0.747)	(0.505)
Year FE	Yes	Yes	Yes	Yes
Country of ancestry FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Observations	2,541	2,541	2,541	2,541
R-squared	0.172	0.097	0.087	0.081

Notes: We used a linear probability model for simplicity in all columns. See Table A7 in the Appendix for estimates using a probit model. All estimates include controls for the characteristics of the respondent and his/her partner included in Table 2, except the interaction terms with the male dummy. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Table 7: How does culture operate? Housework during working/non-working days

Dependent variable: Housework time	(1)	(2)	(3)	(4)
Male	-273.475***	-289.892**	-311.933***	-183.944*
	(97.562)	(129.563)	(88.281)	(106.577)
GGI x Male	305.779**	534.231***	427.198***	323.920**
	(113.207)	(184.809)	(125.272)	(143.654)
Year FE	Yes	Yes	Yes	Yes
Country of ancestry FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
State FE x Male	Yes	Yes	Yes	Yes
Observations	1,810	731	1,214	1,327
R-squared	0.316	0.275	0.382	0.261

Notes: Column 1 only includes those individuals who respond the survey from Monday to Saturday excluding public holidays. Individuals responding the sample in Sunday and non-working days (public holidays) have been included in column 2. Column 3 only includes those individuals who respond the survey from Monday to Friday excluding public holidays. Individuals responding the sample in Saturday, Sunday, and public holidays have been included in column 4. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

## Table 8: How does culture operate? Paid labor or Leisure

Dependent variable:	(1) Paid labor time (in hours)	(2) Leisure time (in hours)
Gender Gap Index	14.197	-14.754**
	(15.652)	(7.314)
Year FE	Yes	Yes
Country of ancestry FE	Yes	Yes
State FE	Yes	Yes
Observations	746	1,226
R-squared	0.173	0.202

Notes: A sample of employed men aged 29-64 has been included in all columns. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level
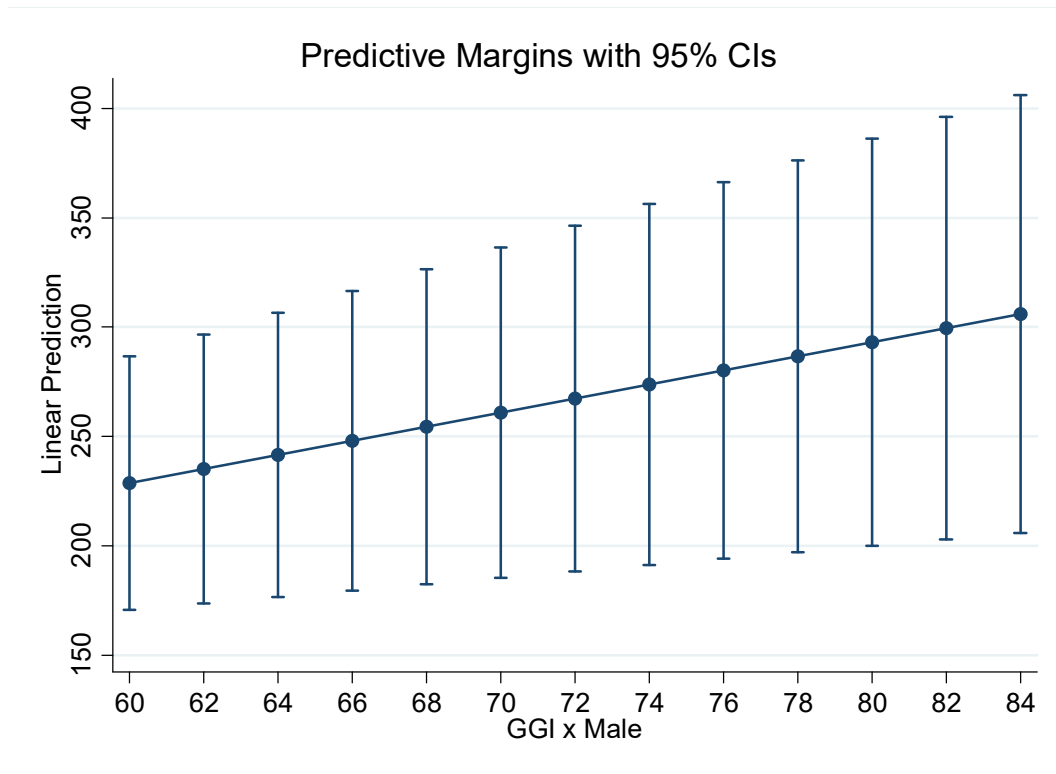
Appendix A

Figure A1: The Gender Gap Index (GGI) and housework time (females vs. males) by country of ancestry
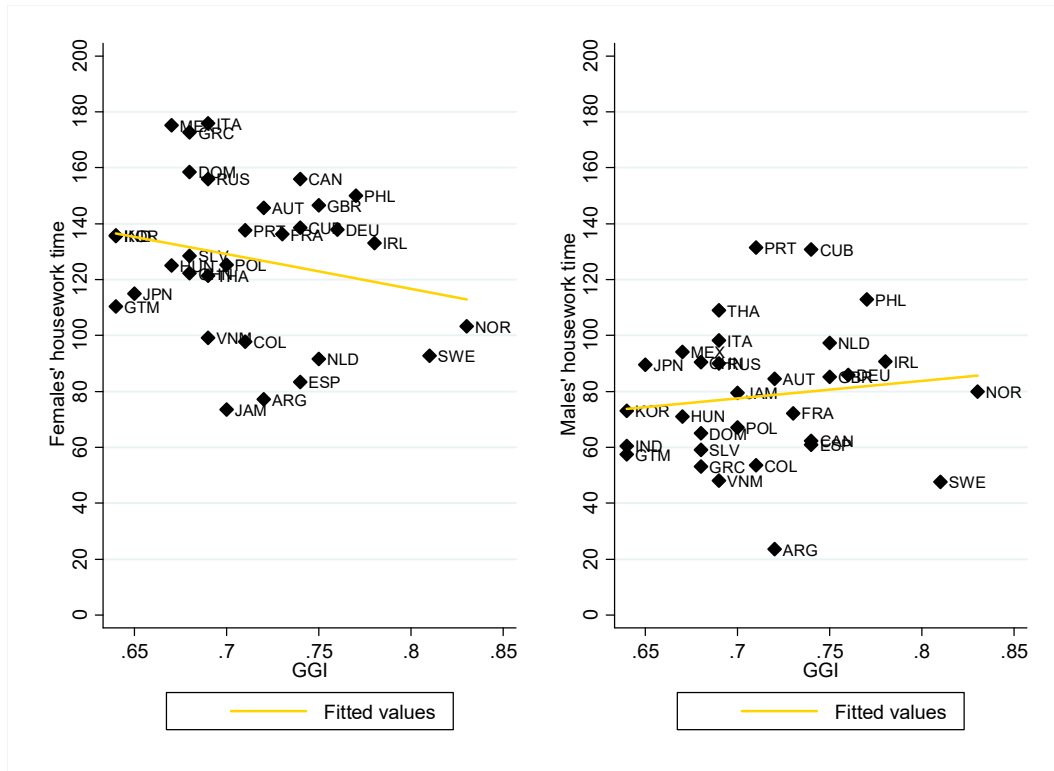
Notes: This figure displays the relationship between females' and males' housework time and our measure of culture in the country of ancestry.

Figure A2: Predictive margins

Notes: This figure displays the predictive margins graphically of column 2 in Table 2.

Table A1: Living with/without a married or unmarried partner

	(1)	(2)	(3)
Dependent variable: Housework time	All individuals	Individuals living with a married or unmarried partner	Individuals living without a married or unmarried partner
Male	-108.862*	-243.878***	22.903
	(61.562)	(25.231)	(109.950)
GGI x Male	213.698***	327.968***	128.826
	(53.965)	(81.521)	(90.559)
Year FE	Yes	Yes	Yes
Country of ancestry FE	Yes	Yes	Yes
State FE	Yes	Yes	Yes
State FE x Male	Yes	Yes	Yes
Observations	4,454	2,541	1,913
R-squared	0.193	0.262	0.164

Notes: All estimates control for the characteristics of the respondent included in Table 2. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Table A2: Using an alternative gender-equality index

Dependent variable: Housework time	(1)
Male	10.063
	(34.259)
GGI x Male	-64.870**
	(30.246)
Year FE	Yes
Country of ancestry FE	Yes
State FE	Yes
State FE x Male	Yes
Observations	2,458
R-squared	0.254

Notes: The cultural proxy is the gender inequality index provided by United Nations Development Programme. In constrast with the cultural proxy used in our main analysis, the higher values indicate a greater gender inequality in that society. The sample contains 2,458 observations of individuals aged 29 to 80, originating from 30 different countries. We use 2005 GII data for the years 2006-2009, since there is no available information for the index in those years. All estimates control for the characteristics of the respondent and his/her partner included in Table 2. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Table A3: Results after the standardization of the GGI

Dependent variable: Housework time	(1)
Male	-240.437***
	(72.684)
GGI (divided by sd) x Male	15.932***
	(4.243)
Year FE	Yes
Country of ancestry FE	Yes
State FE	Yes
State FE x Male	Yes
Observations	2,541
R-squared	0.265

Notes: Data comes from the Integrated Public Use Microdata Series Time Use (IPUMS Time Use) for the period 2006-2018. The sample contains 2,541 observations of individuals aged 29 to 80, originating from 31 different countries. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Table A4: Between-group differences

	Low vs. high educated	With vs. without children	Below vs. above the age of 55 years old	Same vs. different ethnicity partner	Second vs. first-generation immigrants
Chi^2 (p-value)	0.50 (0.4781)	2.80 (0.0942)	2.27 (0.1315)	5.33 (0.0209)	0.24 (0.6245)

Notes: Testing the equality of the coefficient on the GGIxMale.

Table A5: Controlling for partner's country of ancestry

Dependent variable: Housework time	(1)
Male	-263.883***
	(68.874)
GGI x Male	373.068***
	(81.884)
Year FE	Yes
Country of ancestry FE	Yes
Partner's country of ancestry FE	Yes
State FE	Yes
State FE x Male	Yes
Observations	2,541
R-squared	0.293

Notes: All estimates control for the characteristics of the respondent and his/her partner included in Table 2. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Table A6: Concentration of individuals having the same ancestry

Dependent variable: Housework time	(1)	(2)	(3)	(4)
Male	-24.757	-37.898	-24.590	-22.234
	(37.353)	(33.262)	(38.375)	(38.465)
Dummy	166.235*	78.326	215.337*	
	(90.302)	(60.412)	(113.527)	
Dummy x GGI	-211.468*	-116.971	-281.708*	
	(120.423)	(85.542)	(149.889)	
Dunny x Male	-312.894***	-221.855***	-320.887**	
	(104.229)	(68.826)	(149.484)	
Dummy x GGI x Male	414.862***	322.835***	439.486**	
	(137.364)	(96.068)	(209.320)	
Proportion of individuals from the same ancestry				225.716*
				(113.749)
Proportion of individuals from the same ancestry x GGI				-282.486*
				(150.086)
Proportion of individuals from the same ancestry x Male				711.552***
				(214.255)
Proportion of individuals from the same ancestry x GGI x Male				711.552***
				(159.072)
Year FE	Yes	Yes	Yes	Yes
Country of ancestry FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
State FE x Male	Yes	Yes	Yes	Yes
Country of ancestry FE x Male	Yes	Yes	Yes	Yes
Observations	2,541	2,541	2,541	2,541
R-squared	0.274	0.273	0.274	0.274

Notes: All estimates control for the characteristics of the respondent and his/her partner included in Table 2. The dummy variable takes value 1 if the concentration is above the mean in column 1. The dummy variable takes value 1 if the concentration is above the percentile 50 in column 2. The dummy takes value 1 if the concentration is above the percentile 75 in column 3. We include the proportion of individuals from the same ancestry in column 4. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Table A7: The timing of the day when housework is performed with the married/unmarried partner present using a probit model

Dependent variable	(1) Performing household activities in the morning	(2) Performing household activities in the afternoon	(3) Performing household activities in the evening	(4) Performing household activities in the night
Gender Gap Index	1.113	-1.087	1.602**	0.417
	(0.942)	(0.791)	(0.717)	(0.586)
State FE	Yes	Yes	Yes	Yes
Country of ancestry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	2,541	2,541	2,541	2,541

Notes: We estimate a probit model for regressions in Table 6. We report marginal effects. We include controls for the characteristics of the respondent and his/her partner included in Table 2. Estimates are weighted. Robust standard errors, clustered by country of origin, are in parentheses. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Table A8: Hourly earnings and paid labor time (in hours)

	(1)	(2)
Dependent variable:	Paid labor time (in hours)	Hourly earnings
Hourly earnings	0.00002	
	(0.000)	
Gender Gap Index		-191.046
		(1,142.513)
Year FE	Yes	Yes
Country of ancestry FE	Yes	Yes
State FE	Yes	Yes
Observations	739	739
R-squared	0.151	0.260

Notes: A sample of employed men aged 29-64 has been included in all columns as in Table 8.

Appendix B

Table B1: Gender Equality Measures

Name	Definition	Source
Gender Gap Index (GGI)	Measures the gap between men and women in four fundamental categories: economic opportunities, economic participation, educational attainment, political achievements, health and survival. The highest possible score is 1 (equality) and the lowest possible score is 0 (inequality).	World Economic Forum, 2018 Report
Economic Participation and Opportunity Subindex	Index based upon gender differences in the participation in labor markets, wage equality and the gap between the advancement of women and men captured through the ratio of women to men among legislators, senior officials and managers, and the ratio of women to men among technical and professional workers. The highest possible score is 1 (equality) and the lowest possible score is 0 (inequality). This index is also elaborated for the World Economic Forum as part of the Gender Gap Index.	World Economic Forum, 2018 Report
Educational Attainment Subindex	Index based upon the gap between women's and men's current access to education through ratios of women to men in primary, secondary and tertiary level of education. The highest possible score is 1 (equality) and the lowest possible score is 0 (inequality). This index is also elaborated for the World Economic Forum as part of the Gender Gap Index.	World Economic Forum, 2018 Report
Health and Survival Subindex	Index based upon the differences between women's and men's health through the use of the sex ratio at birth and the gap between women's and men's healthy life expectancy. The highest possible score is 1 (equality) and the lowest possible score is 0 (inequality). This index is also elaborated for the World Economic Forum as part of the Gender Gap Index.	World Economic Forum, 2018 Report
Political Empowerment Subindex	Index based upon the gap between men and women at the highest level of political decision-making by using the ratio of women to men in positions of minister and the ratio of women to men in parliamentary positions. The highest possible score is 1 (equality) and the lowest possible score is 0 (inequality). This index is also elaborated for the World Economic Forum as part of the Gender Gap Index.	World Economic Forum, 2018 Report