



Turning back the clock: Beliefs about gender roles during lockdown[☆]

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ABSTRACT

We study the impact of lockdown measures on beliefs about gender roles. We collect data from a representative sample of 1000 individuals in France during the first COVID-19 lockdown in 2020. To measure beliefs about gender roles, we use questions from the 2018 wave of the European Values Study, and match respondents from the two surveys to compare beliefs before and during lockdown. We find evidence that the lockdown period was associated with a shift towards more traditional beliefs about gender roles. The effects are concentrated among men from the most time-constrained households and from households where bargaining with a partner over sharing responsibility for household production was likely to be an issue. Finally, we find correlational evidence that beliefs in equal gender roles increase with household income. Overall, our results suggest that men are more likely to hold egalitarian beliefs about gender roles when these beliefs are not costly for them.

1. Introduction

Families' ability to outsource household production has been one of the driving factors behind women's increased participation in the labor market (Goldin, 2006). It is also associated with beliefs in more equal gender roles.¹ Throughout Europe, the share of individuals who agree with statements such as "When a mother works for pay, the children suffer" and "A job is alright but what most women really want is a home and children" has decreased substantially since the European Values Study (EVS) first measured beliefs about gender roles in 1990. In less than thirty years, agreement with these statements dropped from 65% to 26% and 42%, respectively (see Fig. 1). Furthermore, more individuals tend to believe in equal gender roles in countries where enrolment rates in early childhood education and care services are higher (Fig. 2), and where the employment rates of mothers are higher (Fig. 3).

The COVID-19 crisis reversed families' ability to outsource household production, especially in the first months of the crisis. In early 2020, many governments implemented lockdown measures, which generally involved the closure of child-care facilities and schools. For many households, these lockdown measures led to an increase in household production constraints. Research conducted in France (Champeaux and Marchetta, 2021; Ducoudré and Périvier, 2020), Italy (Biroli et al., 2021; Del Boca et al., 2020; Mangiavacchi et al., 2021), Spain (Farré et al., 2022), the United Kingdom (Golin, 2021; Hupkau and Petrongolo, 2020; Sevilla and Smith, 2020), and the United States (Biroli et al., 2021; Carlson et al., 2022) finds that lockdown measures significantly increased the constraints on households with young children, and that women took responsibility for the largest share of parental care, often by taking time off work (Albanesi and Kim, 2021; Alon et al., 2022; 2020a; 2020b).

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¹ By beliefs in equal gender roles, we mean beliefs that it is men's and women's shared responsibility to contribute both to household production and to the financial support of the household. These gender-role attitudes, combined with female participation in the labor market and in politics, define gender norms within a society (Alesina et al., 2013).

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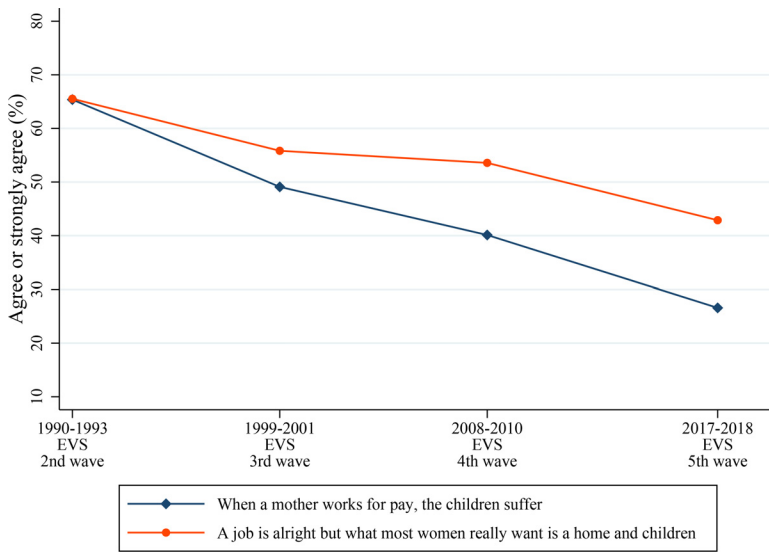


Fig. 1. Changes in beliefs about gender roles in Europe, 1990–2018. *Source:* ZA4804 European Values Study Longitudinal Data File 1981–2008 (EVS, 2011) and ZA7500 European Values Study 2017: Integrated Dataset (EVS, 2020). The EVS data are available at <https://europeanvaluesstudy.eu>.

Notes: This figure shows the overall decrease in beliefs in unequal gender roles since 1990, in European countries, regarding the two statements for which the EVS has collected beliefs over time; the first time it collected these beliefs was in 1990, for the second wave of its survey. The figure shows the mean share of individuals who agree with each statement in the 17 European countries where the EVS collected data for the four consecutive waves: Bulgaria, Czech Republic, Denmark, Estonia, Germany, Hungary, Finland, France, Iceland, Italy, Lithuania, Netherlands, Poland, Romania, Slovakia, Slovenia, and Spain.

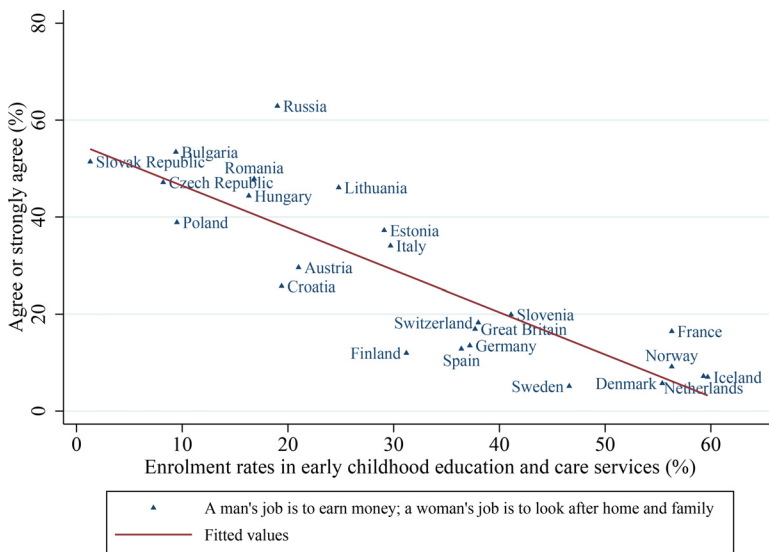


Fig. 2. Correlation between beliefs about gender roles and enrolment rates in early childhood education and care services, OECD countries. *Source:* The data for beliefs about gender roles are from the fifth wave (2017) of the EVS (EVS, 2020). The data for enrolment rates are from the OECD Family Database, and are for 2017 or the latest year available.

The OECD defines these enrolment rates as the “percent of children enrolled in early childhood education and care services (ISCED 0 and other registered ECEC services), 0- to 2-year-old”. The EVS data are available at <https://europeanvaluesstudy.eu/methodology-data-documentation/survey-2017/>. The OECD data are available at <https://www.oecd.org/els/family/database.htm>, Table PF3.2.

Notes: This figure presents the correlation between the percentage of individuals who agree or strongly agree with the statement “a man’s job is to earn money; a woman’s job is to look after home and family” and the enrolment rates in early childhood education and care services in European countries. The value of the Pearson correlation is 0.86 and is significant at the 1% level.

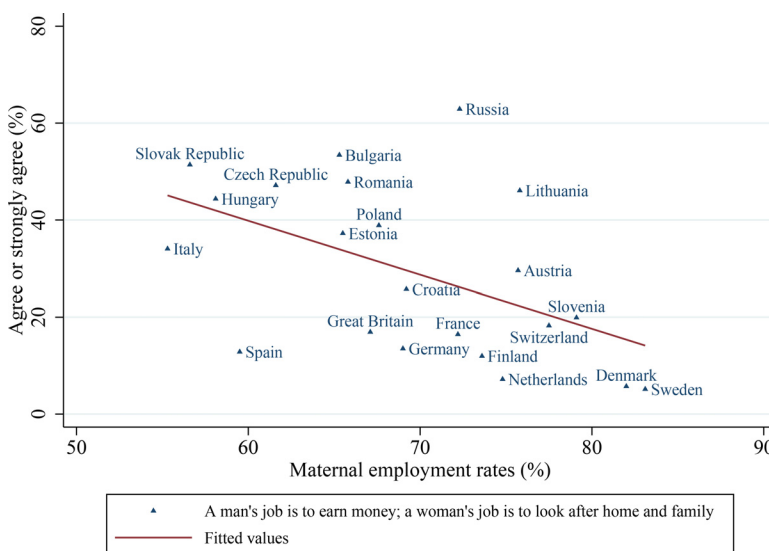


Fig. 3. Correlation between beliefs about gender roles and maternal employment rates, OECD countries. *Source:* The data for beliefs about gender roles are from the fifth wave of the EVS (EVS, 2020). The data for maternal employment rates are from the OECD Family Database, and are for 2019 or the latest year available.

The OECD defines maternal employment rates as employment rates for women (15–64 year olds) with at least one child aged 0–14, who are working full-time or part-time. The EVS data are available at <https://europeanvaluesstudy.eu/methodology-data-documentation/survey-2017/>. The OECD data are available at <https://www.oecd.org/els/family/database.htm>, Table LMF1.2.

Notes: This figure presents the correlation between the percentage of individuals who agree or strongly agree with the statement “a man’s job is to earn money; a woman’s job is to look after home and family” and maternal employment rates in European countries. The value of the Pearson correlation is 0.51 and is significant at the 5% level.

Did the reversal in families' ability to outsource household production also lead to a reversal in beliefs about gender roles? Previous research has found that men and women tend to support more equal gender roles when household production constraints are removed (Pedulla and Thébaud, 2015). But what happens to men's and women's beliefs about gender roles when household production constraints are reinstated? In this paper, we study whether beliefs in gender equality are entrenched once acquired or whether they can be reversed.

We study two channels through which the lockdown measures could have impacted beliefs about gender roles. The first channel relates to the increased time constraints that some households faced during lockdown. The lockdown measures were an exogenous shock on households' ability to outsource household production, as well as on individuals' ability to work. Depending on the industry and occupation of partners, households differed in their availability for parental care: parents could be working from home, temporarily unemployed or still working outside the home if their employment was in a critical sector. If there is a relationship between the ability to outsource household production and individuals' beliefs about gender roles, then individuals from the most time-constrained households—households with young children and where the partners were still working during lockdown—would be more likely to revert to traditional beliefs about gender roles.

The second channel we explore relates to bargaining within couples over who should take care of the extra household production constraints during lockdown. Previous research has suggested that the work-related constraints of each partner are a determinant of who takes care of household production (Presser, 1994). According to the available time theory of household division of labor (Presser, 1994), the partner who is the least constrained by work is generally the one who spends the most time on household production. However, in households where both partners continued to work during lockdown, there was not always one partner who could “naturally” take care of the extra household production constraints.² If there is a relationship between bargaining over who takes care of household production and individuals' beliefs about gender roles, then individuals from households where partners had to bargain—that is, households where both partners either worked from home or worked outside the home during lockdown—would be more likely to revert to traditional beliefs about gender roles. Indeed, beliefs in traditional gender roles can serve as a focal-point equilibrium in a noncooperative bargaining game between partners (Lundberg and Pollak, 1993; 1996).

We study changes in beliefs about gender roles using data from a survey we designed during the first lockdown period in France. A survey institute collected data on a representative sample of 1000 individuals from the French working population. We measure beliefs about gender roles by asking respondents about their opinions on six statements from the EVS.³ We examine changes in beliefs about gender roles by combining responses to our survey with the responses of individuals from the latest wave of the EVS for France.⁴ We perform a Nearest-Neighbor Match on respondents' observable characteristics from both surveys to

estimate how the respondents to our survey would have likely responded before lockdown to the EVS questions about gender roles. We then use the predicted values to estimate changes in beliefs during lockdown.

We find empirical evidence of a shift in beliefs towards traditional gender roles during the first lockdown period. This shift is concentrated among fathers of young children (12 years old or under). For instance, we find a significant increase in the percentage of men with young children who agree with the statement “A man's job is to earn money; a woman's job is to look after the home and family” (14.9 percentage point increase) and “All in all, family life suffers when the woman has a fulltime job” (14.1 p.p. increase). This result is consistent with a time-constraint channel, although only for men.

We then focus our analysis on opposite-sex couples with young children living in the household. Our findings are consistent with the available time theory (Presser, 1994): when men were relatively more available at home than their female partner, they took responsibility for the largest share of the increase in household production.⁵ When women were relatively more available at home than their male partner, they took responsibility for the largest share of the increase in household production. When both partners were equally available, they shared responsibility for the increase in household production. We find evidence that the shift in beliefs towards more traditional gender roles is concentrated among men from this third group. That is, we find that men were more likely to declare believing in traditional gender roles during lockdown when both partners were either working from home or still working outside the home. This result suggests that some men believe in less equal gender roles when a conflict may occur over who should take responsibility for household production. This result points to a role of gender norms in marital bargaining, as described in the seminal model by Lundberg and Pollak (1993, 1996).

Why might men be more likely than women to shift their beliefs towards traditional gender roles when household production constraints increase? Beliefs about equal gender roles may be guided by motivated reasoning (Epley and Gilovich, 2016). When public policies remove household production constraints, holding egalitarian beliefs is not costly for men. But when public policies reinstate household production constraints, holding egalitarian beliefs can become costly for men. Some men may then shift beliefs towards agreeing with more traditional gender roles to avoid taking more responsibility for household production. This interpretation is consistent with research showing that women have stronger preferences for equally sharing household production responsibilities when the couple has a young child (Auspurg et al., 2017). In previous research, Pedulla and Thébaud (2015) also found that women's support for equal gender roles tends to be more elastic than men's to the removal of household production constraints. Our results suggest that men's beliefs in traditional gender roles are more elastic than women's when household production constraints increase.

Our results suggest that access to childcare relieves constraints on households and enables partners to hold egalitarian beliefs. In many European countries, this ability to outsource household production is related to household income. We discuss the relationship between household income and beliefs about gender roles, using cross-country data from the fifth wave of the EVS (pre-pandemic). We find that, throughout Europe, both men and women are more likely to believe in equal gender roles as they move up the income distribution. Our results from the lockdown period provide a potential explanation for the correlation that we find between household income and beliefs about gender roles: as income increases, households can outsource household production more easily, which could lead to more egalitarian beliefs. If so, egalitarian beliefs could be a type of luxury good. However, our analysis

² Reichelt et al. (2021) provide correlational evidence that could be consistent with the available time theory. Using survey data from the US, Germany, and Singapore collected in May and June 2020, the authors find that men who transitioned from employment to unemployment during lockdown (while their partner remained employed) tended to hold less traditional beliefs than men who continued to work during lockdown. However, the direction of causality is not clear: men with more egalitarian beliefs were also more likely to have chosen not to work during lockdown while their female partner continued working. The authors also cannot show whether these men changed beliefs during lockdown as they do not observe beliefs before lockdown.

³ We detail the six statements in Section 3.1. Researchers often use measures from the EVS and the World Values Survey to measure beliefs about gender roles, for instance Alesina et al. (2013).

⁴ The latest wave of responses for France was in 2018, less than two years before the beginning of the COVID-19 crisis. The EVS collects data every nine years.

⁵ Men were relatively more available at home than their female partner to take care of household production when they were not working while their female partner continued to work or when they were working from home while their female partner was working outside.

does not rule-out an alternative explanation: women in more egalitarian households are more likely to work, which contributes to higher income in these households. We highlight the public policy implications of our findings: providing public services to outsource household production could lead to an increase in egalitarian beliefs in the population, and reduce income inequalities across households through increased female labor force participation.

The paper is structured as follows. Section 2 describes the data. Section 3 provides descriptive evidence on beliefs about gender roles and household production constraints. Section 4 presents the results of our estimates of changes in beliefs about gender roles during lockdown. Section 5 discusses our results by studying the relationship between beliefs about gender roles and income. Section 6 presents results of robustness checks. Section 7 concludes.

2. Data

In this section, we describe the datasets that we combine to perform our analysis. The first dataset is the “Lockdown survey”, which includes information from the survey that we designed and that IPSOS, a survey agency, conducted on a representative sample of 1000 working individuals in France during the first lockdown period, between May 4th and May 8th, 2020.⁶ The second dataset is the “EVS survey”, which includes data from the fifth wave of the EVS for France, from 2018. We then describe how we match respondents of both surveys to build the dataset for our examination of changes in beliefs about gender roles during lockdown.

When the first lockdown in France occurred on March 17th, 2020, all Lockdown survey respondents were at least 18 years old and were either employed or independent workers. The survey agency applied a quota sampling method to ensure that the respondents were representative of the French working population, based on gender, age, occupation, as well as the region and the type of environment (rural or urban) where the respondent lived at the time of the survey.⁷ Since time constraints were an issue during lockdown, we opted for a short, ten-minute, online survey.

The Lockdown survey includes questions from the EVS (2020) to measure respondents’ beliefs about gender roles. The EVS dataset for France includes information collected between March 3rd and August 16th, 2018, two years before the first COVID-19 lockdown. We kept the same format as the EVS questions, asking respondents whether they strongly agree, agree, disagree, or strongly disagree with six statements about gender roles, which we describe in Section 3.1. For each statement measuring beliefs about gender roles, we construct a binary variable equal to one if the respondent answered either agree or strongly agree, and zero if the respondent answered either disagree or strongly disagree. These six measures of beliefs are the main dependent variables of our analysis.

After collecting the responses for each statement during lockdown, we match respondents from our survey with respondents from the EVS. Because we do not have panel data to measure within respondent variations in beliefs regarding gender roles before and during lockdown,

⁶ In France, the first lockdown period ended on May 11th, 2020.

⁷ The survey agency kept the survey open until each quota was filled. Table A1 in the Appendix compares the Lockdown sample to the French working population. We use the French Labor Force Survey (*Enquête Emploi en continu*, INSEE, 2021), which is a representative sample of French workers, to compile information on the French working population. Table A1 shows the share of respondents in the quota sampling categories (gender, age, occupation, type of environment, and region) and other important characteristics (household type, hours worked by respondents before lockdown, share of independent workers, and education level) in our sample and the French working population. Our sample is highly representative of the French working population in 2020. The main difference between our sample and the general population regards education: the sample of workers who answered the Lockdown survey is more educated than the general working population.

we conduct a Nearest-Neighbor Match to estimate the Lockdown survey respondents’ beliefs before lockdown. With our matching exercise, we make the assumption that we can use the data from one and a half to two years before lockdown (from the EVS) to proxy beliefs about gender roles right before lockdown.⁸ To have a matching set of respondents, we selected the 871 individuals in France from the EVS who were at least 18 years old and employed when they answered the survey in 2018.

Table 1 provides descriptive statistics for the variables that we use from both surveys to conduct the matching exercise. We predict the pre-COVID beliefs of Lockdown survey respondents by conducting a Nearest-Neighbor Match with Mahalanobis distances on the following characteristics: age, education category, marital status, geographic region⁹, the number of children living in the household, and the employment status of the partner before lockdown. We apply an exact match on whether the respondent is female and whether the respondent has a child who is 12 years old or under living in the household.¹⁰ For respondents with partners (67% in the Lockdown dataset and 57% in the EVS dataset), we use information on their partner’s employment status.¹¹ Importantly, we use the information about the pre-COVID employment status of the Lockdown survey respondent’s partner for matching purposes.¹² Generally, the characteristics of respondents in the EVS are similar to the ones of the Lockdown survey. The main difference between the two data sets relates to education: respondents from the Lockdown survey have higher education on average than respondents from the EVS survey. The matching exercise takes into account such differences.¹³

We use the predicted values from the matching exercise to construct the outcome variable on beliefs before lockdown for the Lockdown respondents.¹⁴ We describe the results of our predictions in Section 3.1. The precision of the predictions relies crucially on the quality of the match, which we discuss in Section 6. There, we present the results of alternative matching strategies; they suggest that our predicted values are within bounds. In particular, we calculate average treatment effects (ATE) using different matching covariates, and also using Euclidean distances. We find that the ATEs remain stable in terms of both significance and magnitude across different matching alternatives. If anything, the matching strategy we use for the main analysis in this paper tends to yield smaller ATEs than alternative strategies.

⁸ In France, the share of individuals who agreed with unequal gender roles steadily decreased between 1990 and 2018 according to EVS data (Fig. 4). Assuming the trend continued between 2018 and 2020, our estimates are likely to slightly overestimate the share of respondents who agreed with unequal gender roles right before the lockdown started.

⁹ We include this information as research suggests that beliefs about gender roles may vary by region (Alesina et al., 2013; Le Barbanchon and Sauvagnat, 2022).

¹⁰ More specifically, we apply the methodology described by Abadie et al. (2004) and Abadie and Imbens (2011). Our matching method uses replacement, and we did not set specific tolerance levels.

¹¹ Respondents in a same-sex relationship are 6.5% of the Lockdown survey respondents (two thirds male couples, one third female couples). We do not have corresponding same-sex couples in the EVS dataset.

¹² This variable is important, because it likely reflects prior beliefs about gender roles. For instance, the wife of a male respondent who believes in traditional gender roles would have been more likely to be a housewife before lockdown.

¹³ In Table A2 in the Appendix, we check for covariate balance. The table presents raw and weighted standardized differences and variance ratios of all covariates used in the nearest neighbor match. Overall, the summary statistics indicate that the matching exercise achieved balance. We discuss the quality of our matching exercise and alternative matching strategies in Section 6.

¹⁴ The predicted values from the matching model exhibit a bimodal distribution, around the values zero (disagree or strongly disagree) and one (agree or strongly agree). We set the outcome variable for Lockdown respondents to be equal to one if the predicted value is larger than or equal to 0.5; we set the predicted outcome variable to be equal to zero if the predicted value is below 0.5.

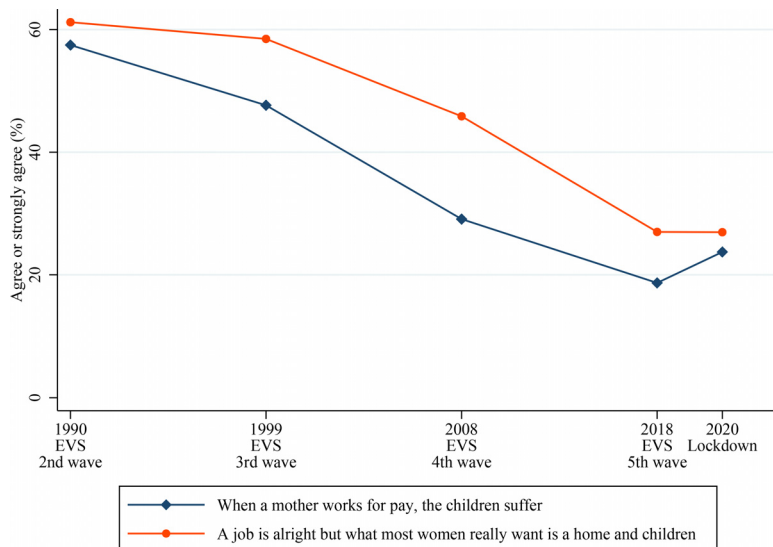


Fig. 4. Changes in beliefs about gender roles in France, between 1990 and 2020.

Source: EVS and Lockdown Survey (2020).

Notes: This figure shows the change over time of respondents' opinions about two statements regarding gender roles that the EVS has included in its survey since 1990. In France, the EVS collected data for its 2nd wave in 1990, its 3rd wave in 1999, its fourth wave in 2008, and its fifth wave in 2018. We included these two statements in our Lockdown survey; the data were collected in May 2020. For each wave, we selected EVS respondents who were either employed (full-time or part-time) or self-employed, before calculating the percentage of respondents who either agree or strongly agree with each statement.

Table 1
Demographic characteristics, Lockdown and EVS survey respondents.

	Lockdown survey			EVS survey		
	Count	Mean	SD	Count	Mean	SD
Female	1000	0.49	0.500	871	0.52	0.500
Age	1000	41.69	11.766	871	42.21	11.982
<i>Marital status</i>						
Single	1000	0.26	0.436	870	0.24	0.427
Married	1000	0.39	0.489	870	0.34	0.474
Civil partnership	1000	0.09	0.283	870	0.09	0.287
Cohabitation	1000	0.19	0.390	870	0.14	0.350
Other	1000	0.08	0.267	870	0.19	0.389
<i>Children</i>						
At least one child	1000	0.41	0.493	871	0.48	0.500
Child 12 y.o. or under	1000	0.31	0.464	871	0.33	0.471
Number of children	413	1.65	0.740	416	1.78	0.789
<i>Partner's employment status (pre-pandemic)</i>						
Works full time	1000	0.47	0.500	871	0.45	0.498
Works part time	1000	0.05	0.222	871	0.04	0.207
Works as independent	1000	0.04	0.196	871	0.01	0.112
Other	1000	0.12	0.326	871	0.08	0.265
<i>Education level of respondent</i>						
Less than <i>Baccalauréat</i>	1000	0.17	0.375	866	0.33	0.472
High school graduate	1000	0.23	0.419	866	0.20	0.403
Two years post graduate	1000	0.23	0.423	866	0.19	0.390
Higher education	1000	0.37	0.483	866	0.27	0.446
<i>Region</i>						
Auvergne-Rhône-Alpes	1000	0.15	0.357	871	0.12	0.323
Bourgogne-Franche-Comté	1000	0.05	0.224	871	0.05	0.217
Bretagne	1000	0.05	0.212	871	0.06	0.233
Centre-Val de Loire	1000	0.04	0.191	871	0.03	0.182
Corse	1000	0.00	0.063	871	0.00	0.000
Grand Est	1000	0.08	0.265	871	0.08	0.277
Hauts-de-France	1000	0.09	0.288	871	0.08	0.274
Ile-de-France	1000	0.20	0.403	871	0.20	0.401
Normandie	1000	0.04	0.205	871	0.06	0.241
Nouvelle-Aquitaine	1000	0.09	0.281	871	0.12	0.323
Occitanie	1000	0.08	0.271	871	0.08	0.263
PACA	1000	0.06	0.230	871	0.05	0.226
Pays de la Loire	1000	0.07	0.257	871	0.07	0.247

Source: EVS and Lockdown Survey (2020).

Notes: To match the Lockdown survey sample, the EVS sample only includes respondents with a professional activity. "Other" in marital status includes individuals who are separated, divorced or widowed. "Other" in the partner's employment status includes individuals who are retired, housewives or househusbands, students, unemployed and searching or not searching for a job. "Number of children" only takes into account respondents who have at least one child living in the household (18 or younger). "Higher education" includes individuals with at least three years of higher education.

Table 2
Share of respondents who agree with each statement before and during lockdown, by gender.

	Before lockdown		During lockdown		Male - Female		Before - During	
	Mean		Mean		P-value difference		P-value difference	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Male	Female	Male	Female	Before	During	Male	Female
Statement (1): Kids	0.11	0.19	0.24	0.24	0.002	0.986	0.000	0.063
Statement (2): Family	0.19	0.28	0.25	0.27	0.001	0.558	0.019	0.768
Statement (3): Home	0.27	0.26	0.28	0.26	0.860	0.353	0.653	0.761
Statement (4): Money	0.09	0.07	0.16	0.11	0.263	0.010	0.000	0.038
Statement (5): Politics	0.07	0.08	0.17	0.09	0.590	0.000	0.000	0.905
Statement (6): Business	0.10	0.04	0.17	0.07	0.001	0.000	0.001	0.034

Source: Lockdown Survey (2020).

Notes: This table shows descriptive statistics for the main outcome variables, which are binary variables equal to one if response is “Agree” or “Strongly Agree” for each statement. Statements are (1) Kids: “When a mother works for pay, the children suffer”. (2) Family: “All in all, family life suffers when the woman has a fulltime job”. (3) Home: “A job is alright but what most women really want is a home and children”. (4) Money: “A man’s job is to earn money; a woman’s job is to look after the home and family”. (5) Politics: “On the whole, men make better political leaders than women do”. (6) Business: “On the whole, men make better business executives than women do”. The number of Lockdown observations for each statement is as follows: Statement (1) has 932 observations, Statement (2) has 943 observations, Statement (3) has 895 observations, Statement (4) has 964 observations, Statement (5) has 909 observations, and Statement (6) has 923 observations.

3. Descriptive evidence

We describe the main outcome variables of our analysis in Section 3.1. In Section 3.2, we describe the variables we use to measure the impact of lockdown on household production constraints.

3.1. Measures of beliefs about gender roles

We interpret agreement with any of the six statements reported in Table 2 as representing beliefs in more traditional gender roles.

Statements (1) and (2) can be associated with a belief in traditional gender roles for women: “When a mother works for pay, the children suffer” and “All in all, family life suffers when the woman has a fulltime job”. About one out of four men and women agree with these statements during lockdown (Table 2). Compared to our estimates of beliefs before lockdown (from the Nearest-Neighbor Match), we observe a statistical significant increase in the percentage of both men and women who agree with the first statement (13 p.p. for men and 5 p.p. for women).¹⁵ We also observe a smaller but statistically significant increase for the second statement for men (6 p.p.), and a decrease for women (1 p.p.), although not statistically significant.¹⁶

Statement (3) measures respondents’ beliefs regarding gender norms: “A job is alright but what most women really want is a home and children”. This statement measures whether the respondent believes that women in general have a preference for traditional gender roles. It is therefore a measure of second-order beliefs: it measures what the respondent believes that other people believe, that is, gender norms. Research suggests that beliefs in gender norms have an impact on individuals’ behaviors regarding gender equality in the household and women’s participation in the labor market (Bursztyn et al., 2020). Our descriptive statistics suggest that the lockdown period is not significantly associated with a change in individuals’ second-order beliefs: 26% of women agree with the statement before and during lockdown, whereas 27% of

men agree with the statement before lockdown compared to 28% during lockdown.

Statement (4) measures the extent to which individuals associate both men and women with traditional gender roles: “A man’s job is to earn money; a woman’s job is to look after the home and family”. We observe a statistically significant increase in the percentage of men who agree with this statement: from 9% before lockdown to 16% during lockdown. We observe a smaller increase for women, from 7% to 11%. The difference between men and women during lockdown is statistically significant.

Finally, statements (5) and (6) suggest that men have a comparative advantage for activities related to economic and political leadership: “On the whole, men make better political leaders than women do” and “On the whole, men make better business executives than women do”. Our descriptive statistics suggest a strong and statistically significant increase in the percentage of men who agree with these two statements. Before lockdown, our estimates suggest that 7% of male respondents agree with statement (5) and 10% agree with statement (6). During lockdown, 17% of men agree with both statements.

Overall, we do not observe a polarization of beliefs. Instead, we observe a shift in the distribution of answers, with fewer individuals strongly disagreeing and more individuals agreeing with the statements during lockdown (see Fig. A1 in the Appendix).

Among the six statements, two have been asked by the EVS over several waves: “When a mother works for pay, the children suffer” (statement (1)) and “A job is alright, but what women really want is a home and children” (statement (3)). Descriptive evidence, which we present in Fig. 4, shows that the share of individuals in France who agree or strongly agree with these two statements decreased steadily between 1990 and 2018. In 2020, during lockdown, we observe a clear trend reversal for both statements.

3.2. Time constraints during lockdown

Time constraints increased substantially during lockdown in households with young children. In the Lockdown survey, we asked respondents to report the number of hours per day that they and their partner spent on parental care and housework, before and during lockdown. During lockdown, about two extra hours a day on average were spent on parental care in households with at least one young child. We find that mothers took responsibility for a larger share of the additional parental care during lockdown. In households with young children, female re-

¹⁵ Columns 7 and 8 provide the *p*-values of the test for the difference in means among men and women, respectively, before and after lockdown.

¹⁶ The data collection process by EVS is different from our survey. Interviews were conducted in person for the fifth wave of the EVS for France, whereas our survey was administered online. We check that differences in beliefs between our “before lockdown” period (based on EVS responses) and our “during lockdown” period (based on Lockdown responses) are not driven by social-desirability or type-of-interview bias in Section 6.3.

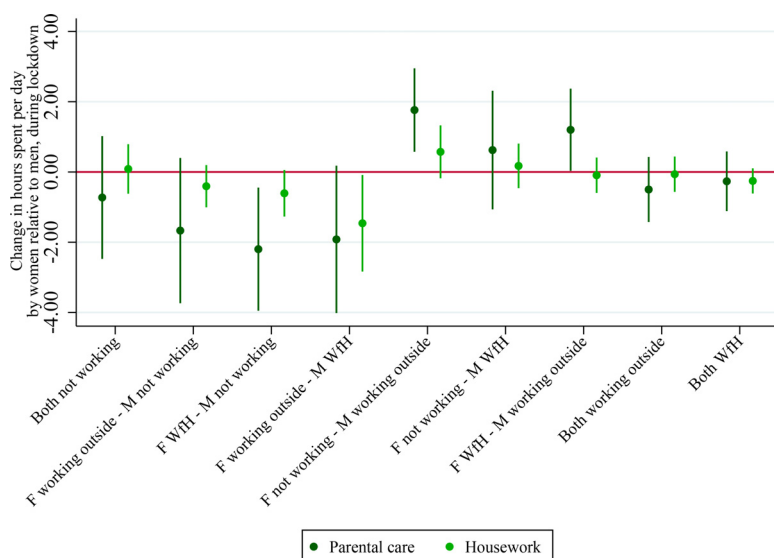


Fig. 5. Impact of lockdown on time spent on parental care and housework by individuals in opposite-sex couples, by job situation.

Source: Lockdown Survey (2020).

Notes: This figure presents the nine situations that opposite-sex couples were in during the first lockdown period. Each partner, male (M) or female (F) was either not working, working from home (WfH) or working outside the home (outside). We included respondents who declared working partly from home, partly outside from home, in the WfH category. The vertical axis shows the change in the number of hours spent by the female partner relative to her male partner on parental care (dark green) and housework (light green), during lockdown (compared to before lockdown). A positive value means that the female partner increased the time she spent on childcare or housework compared to her male partner during lockdown. A negative value suggests that the male partner spent relatively more time on the activity than his female partner during lockdown, compared to before lockdown. The estimated model controls for the following characteristics: age, level of education, number of children, marital status, number of hours worked, and region fixed effects. Bars represent 95% confidence intervals. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

Table 3
Job combinations between partners during lockdown.

Job combinations	All couples		Couples with young children	
	Freq.	Percent	Freq.	Percent
<i>Both partners are equally available at home</i>				
F not working & M not working	122	19.61	40	15.38
<i>The male partner is relatively more available at home</i>				
F working outside & M not working	42	6.75	15	5.77
F working from home & M not working	51	8.20	16	6.15
F working outside & M working from home	30	4.82	10	3.85
<i>The female partner is relatively more available at home</i>				
F not working & M working outside	58	9.32	30	11.54
F not working & M working from home	59	9.49	24	9.23
F working from home & M working outside	75	12.06	38	14.62
<i>Both partners are equally unavailable at home</i>				
F working outside & M working outside	74	11.90	34	13.08
F working from home & M working from home	111	17.85	53	20.38
Total	622	100	260	100

Source: Lockdown Survey (2020).

Notes: This table shows the different work combinations that opposite-sex couples were in during lockdown.

“F” refers to the female partner, and “M” refers to the male partner.

spondents spent an average of 5.8 h a day on parental care during lockdown (3.3 h before lockdown), compared to 4.5 h for male respondents (3.1 h before lockdown). These increases and gender differences are consistent with findings from other countries (e.g., Adams-Prassl et al., 2020; Biroli et al., 2021; Carlson et al., 2022; Farré et al., 2022; Sevilla and Smith, 2020; Golin).

Fig. 5 shows the change in hours spent per day by mothers relative to fathers on parental care and housework, for each of the nine categories of employment situations, during lockdown (Table 3 shows the share of couples, with and without young children, in each category). Although the large standard errors of the estimates reflect the imprecise measurement¹⁷ of the time-use variables, the figure provides suggestive evidence that men increased the time spent on parental care compared to their female partner in the three situations where they were relatively

¹⁷ There are measurement errors in the time use variables. Many respondents do not estimate precisely how much time they spend per day on different tasks. For instance, several respondents completed daily time use that exceeds 24 h. Furthermore, there are large differences in men’s and women’s perceptions of time spent by each partner on parental care and housework. For instance, men tend to say that their share on parental care is just below 50%, whereas women tend to say that their male partner’s share on parental care is less than 40%, on average.

more available at home to take care of household production: when they were not working and their female partner was working either from home or outside the home, and when they were working from home and their female partner was working outside the home.¹⁸ The figure also shows that women took responsibility for a larger share of the increase in parental care that took place during lockdown when they were relatively more available at home. These two pieces of evidence are consistent with the available time theory (Presser, 1994): the partner who is the most available at home will “naturally” take responsibility for a larger share of household production. Time availability is a coordination device for couples bargaining over who will take care of household production. However, in households where both partners were equally likely to be at home (both were not working, both were working from home or both were working outside the home), Fig. 5 suggests that male and female partners shared responsibility for the increase in parental care and housework during lockdown. While couples who were not working

¹⁸ While fathers’ choices to increase their share of work on parental care is partly endogenous, this figure suggests that their increase in time spent on parental care was also exogenously determined by the way that the lockdown measures impacted the couple’s ability to work, and whether they worked from home or outside the home.

during lockdown had time for parental care and housework during lockdown, couples where both partners were either working from home or working outside were likely to be highly time-constrained. In these situations, the available time theory (Presser, 1994) suggests that couples need to bargain over who takes care of household production.

4. Results

In this section, we examine whether individuals believed in more traditional gender roles during lockdown. First, we study the impact of lockdown measures on all individuals (Section 4.1). Second, we focus on the beliefs of individuals who were the most time-constrained during lockdown: parents with young children (Section 4.2). Finally, we examine the changes in beliefs of individuals from households where both partners were either working from home or working outside during lockdown, compared to other households where time constraints were lower (because partners were not working) or where partners had a “natural” way of distributing responsibility for household production (because one partner was relatively more at home) (Section 4.3).

4.1. Benchmark results

We analyze the changes in beliefs about gender roles during lockdown by estimating the following regression:

$$Y_{it} = \alpha + \beta_1 \text{Lockdown}_i + \beta_2 \text{Female}_i + \beta_3 \text{Female}_i \times \text{Lockdown}_i + \delta X_{it} + \varepsilon_{it}, \quad (1)$$

where the outcome variable Y_{it} is a binary variable equal to one if respondent i answered agree or strongly agree to a gender role statement at time t .¹⁹ The outcome before lockdown is defined as the estimate from the matching exercise for the beliefs of respondent i . The main variable of interest, *Lockdown*, is a binary variable equal to zero for the period before lockdown and one for during lockdown. *Female* is a binary variable equal to one if the respondent is a woman. The coefficient on the interaction term (β_3) measures whether the impact of the lockdown period is different between male and female respondents. The vector of characteristics X includes both time variant and time invariant characteristics: age of the respondent, number of children, marital status, level of education, number of hours worked by the respondent at time t , and fixed effects for the region where the respondent lives.²⁰ Finally, ε_{it} is the idiosyncratic error term. Our benchmark model estimates Eq. (1) using ordinary least squares (OLS).

Table 4 presents the benchmark results, including all respondents. We find a statistically significant effect of lockdown on four out of six measures of beliefs about gender roles. The first lockdown period is associated with a statistically significant increase in the probability of agreeing with the following statements:

- “When a mother works for pay, the children suffer” (10 p.p. increase, Column (1)),

¹⁹ We transformed the ordered variables for beliefs in dummy variables to make our results easy to interpret. Indeed, the results of our OLS regressions give percentage point changes. The evidence in Fig. A1 in the Appendix suggests that this approach is valid because we observe a shift in the distribution of attitudes, rather than a polarization of attitudes (which our approach would not be able to capture).

²⁰ In our survey, we asked the respondents about their situation right before lockdown and at the time when they completed the survey. Most of these variables do not change during this two-month period for most respondents (especially since most activities were strictly restricted during the lockdown period). While some respondents change age between March 2020 and May 2020, we only consider their age during lockdown, as we did not ask for their month of birth, only for their age when they completed the survey in May. The main variable that does change significantly during this period is number of hours worked.

- “A man’s job is to earn money; a woman’s job is to look after the home and family” (6.8 p.p. increase, Column (4)),
- “On the whole, men make better political leaders than women do” (9.3 p.p. increase, Column (5)),
- and “On the whole, men make better business executives than women do” (7.5 p.p. increase, Column (6)).

We also find a weakly significant increase for “All in all, family life suffers when the woman has a fulltime job” (5.1 p.p. increase, Column (2)). The only outcome variable that does not change during lockdown is statement (3) on gender norms (“A job is alright but what most women really want is a home and children”).

The interaction term between *Lockdown* and *Female* is always negative: individuals who changed their beliefs during lockdown were mainly men, especially regarding statements (1), (2), and (5). Our results suggest that the lockdown period is associated with an increase in more traditional beliefs in gender roles, especially among men.

4.2. The relationship between time constraints and beliefs

Since time constraints significantly increased for parents of young children during lockdown, we add in Eq. (1) a binary variable equal to one if there is at least one child who is twelve years old or under living in the household, and we allow lockdown to differentially impact men and women with and without young children living in the household. We use the variable on children living in the household as a proxy for increased time constraints for the whole sample of respondents.

We find that men with young children increased their beliefs towards unequal gender roles during lockdown. In Fig. 6 (see also Table A3 in the Appendix), we show the estimated change in beliefs during lockdown for four categories of respondents separately: men and women, and whether or not they were living with young children during lockdown. We find a significant increase in the percentage of men with young children who agree with all six statements during lockdown. The increases range from a 12.8 p.p. increase for “When a mother works for pay, the children suffer”, to a 14.9 p.p. increase for “A man’s job is to earn money; a woman’s job is to look after the home and family”.²¹

While we find strong and consistent evidence of an increase in beliefs in unequal gender roles for fathers with young children, the results for other men are more mixed. We find a significant but much smaller increase in beliefs in traditional gender roles for statements (1) and (5). However, we also find that men without young children are less likely to agree with the statement “A job is alright, but what most women really want is a home and children” during lockdown.²²

Finally, we generally do not find that women’s beliefs changed significantly during lockdown, whether they had young children living in the household or not. The only significant result we find is that women with young children agreed more often with the statement “When a mother works for pay, the children suffer”.²³

²¹ Using data from Germany one year after the beginning of the COVID crisis, which they compare to gender role attitudes measured in 2016, Huebener et al. (2022) find similar results, whereby fathers of young children tend to report more traditional beliefs about gender roles.

²² Table A4 in the Appendix reports the results of the tests for *between gender*, *within group* differences as well as for *between groups*, *within gender* differences. The tests show that, among men, there is a statistically significant difference between those without children under the age of 12 and those with children under the age of 12 for four statements (Family, Home, Money, and Business); men with young children during lockdown are more likely to agree with these statements than men without young children living in the household. The results for the other statements (Kids, Politics), although not statistically significantly different by group within men, confirm the same pattern, whereby men with young children during lockdown are more likely to agree with these statements than men without young children during lockdown.

²³ When working mothers agree with this type of statement, it can be interpreted as measuring a “mother’s guilt” effect (Fortin, 2005). For more literature on the mother’s guilt effect, see Slaughter (2015) and Kuziemko et al. (2018).

Table 4
Impact of lockdown on beliefs about gender roles, benchmark model.

Statement:	(1) Kids	(2) Family	(3) Home	(4) Money	(5) Politics	(6) Business
Dependent variable:	“Agree” or “Strongly Agree” with Statement					
Lockdown	0.100*** (0.026)	0.051* (0.028)	−0.010 (0.031)	0.068*** (0.021)	0.093*** (0.023)	0.075*** (0.023)
Female	0.075*** (0.023)	0.091*** (0.027)	−0.007 (0.029)	−0.022 (0.017)	0.010 (0.018)	−0.056*** (0.017)
Lockdown × Female	−0.074** (0.036)	−0.072* (0.039)	−0.023 (0.042)	−0.037 (0.028)	−0.097*** (0.028)	−0.040 (0.027)
Constant	0.230*** (0.059)	0.193*** (0.064)	0.417*** (0.072)	0.177*** (0.048)	0.216*** (0.051)	0.162*** (0.049)
Observations	1864	1886	1790	1928	1818	1846
R-squared	0.063	0.056	0.032	0.045	0.046	0.042

Source: Lockdown Survey (2020).

Notes: The dependent variable is a binary variable equal to one if response is “Agree” or “Strongly Agree” for each of the following statements. (1) Kids: “When a mother works for pay, the children suffer”. (2) Family: “All in all, family life suffers when the woman has a fulltime job”. (3) Home: “A job is alright but what most women really want is a home and children”. (4) Money: “A man’s job is to earn money; a woman’s job is to look after the home and family”. (5) Politics: “On the whole, men make better political leaders than women do”. (6) Business: “On the whole, men make better business executives than women do”. All columns control for the following characteristics: age, level of education, number of children, marital status, number of hours worked, and region fixed effects. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors in parenthesis.

Overall, these results suggest that the increased time constraints that households with young children faced during lockdown are associated with a shift in beliefs towards more traditional gender roles. This shift is concentrated among fathers.

4.3. The relationship between parental occupations and beliefs

To further corroborate the evidence that the change in beliefs among men is driven by an increase in household production constraints, we exploit the variation in individual occupations generated by the lockdown measures, whereby some respondents and their partners stopped working, worked from home, or worked outside of the home. For this analysis, we only keep respondents who were parents of at least one young child living in the household during lockdown, because we want to examine the beliefs of individuals in a potential bargaining situation with their partner over taking responsibility for household production, in particular parental care. In the benchmark model in Eq. (1), we add a binary variable equal to one if the respondent and the respondent’s partner both worked outside or both worked from home during lockdown, and we include an interaction term with the gender variable. Comparing parents in the different ways that the lockdown measures impacted their work arrangements is a way for us to proxy potential bargaining issues over which partner should take care of household production during lockdown.

The overall pattern of results in Fig. 7 shows that the change in beliefs towards traditional gender roles is concentrated among men from the households where both partners were either working from home or working outside during lockdown (see also Table A5 in the Appendix). This pattern suggests that what drives the change in beliefs among fathers with young children is not *per se* the increased time they spent on parental care or housework. Indeed, men who were relatively more available for parental care and housework were not the ones whose beliefs shifted. The men who were more likely to shift to traditional beliefs were the ones from households where both partners were equally unavailable to take responsibility for household production.²⁴

²⁴ Table A6 in the Appendix reports the results of the tests for *between gender*, *within group* differences as well as for *between groups*, *within gender* differences. The tests show that that among men there is a statistically significant difference

We interpret this result as evidence that men may adopt more traditional beliefs when they are in a bargaining situation with their female partner over the division of tasks in the household. Adopting more traditional beliefs is less costly for men than for women, as the burden of household production would fall more heavily on women according to traditional divisions of labor. Women, however, are less likely to revert to traditional beliefs about gender roles. They may be more likely to maintain egalitarian beliefs because these beliefs enable them to share the work on parental care and household chores.

5. Discussion

Our results suggest that families’ ability to outsource household production shapes beliefs about gender roles. When lockdown measures are not in place, parents can find substitutes for household production through publicly provided services (such as public schools and subsidized day care services) or by hiring help from low-skilled workers (Cortés and Pan, 2019). In many European countries, this ability to outsource household production is related to household income. Lower income households tend to outsource childcare less than higher income households, partly because out-of-pocket expenses for childcare (especially for early childhood) weigh more heavily on lower income households and creates disincentives for mothers to work (Anderson and Levine, 1999; OECD, 2022). Access to substitutes for household production enables high-skilled women to work longer hours and to earn higher wages, leading to higher household income for those who can afford to outsource household production (Cortés and Pan, 2019).

If the ability to outsource household production is positively associated with beliefs in equal gender roles and with household income, then we expect egalitarian beliefs and household income to be positively

between men from households where both partners were working and men from households with other occupational arrangements for two statements (Kids and Politics), whereby men from the households where both partners were working during lockdown are more likely to agree with these statements than men from households where partners have other occupational arrangement. The results for the other statements (Family, Home, Money, and Business)—although not statistically significantly different by group within males—confirm the same pattern. In contrast, among women we do not find any evidence of this pattern in any of the statements.

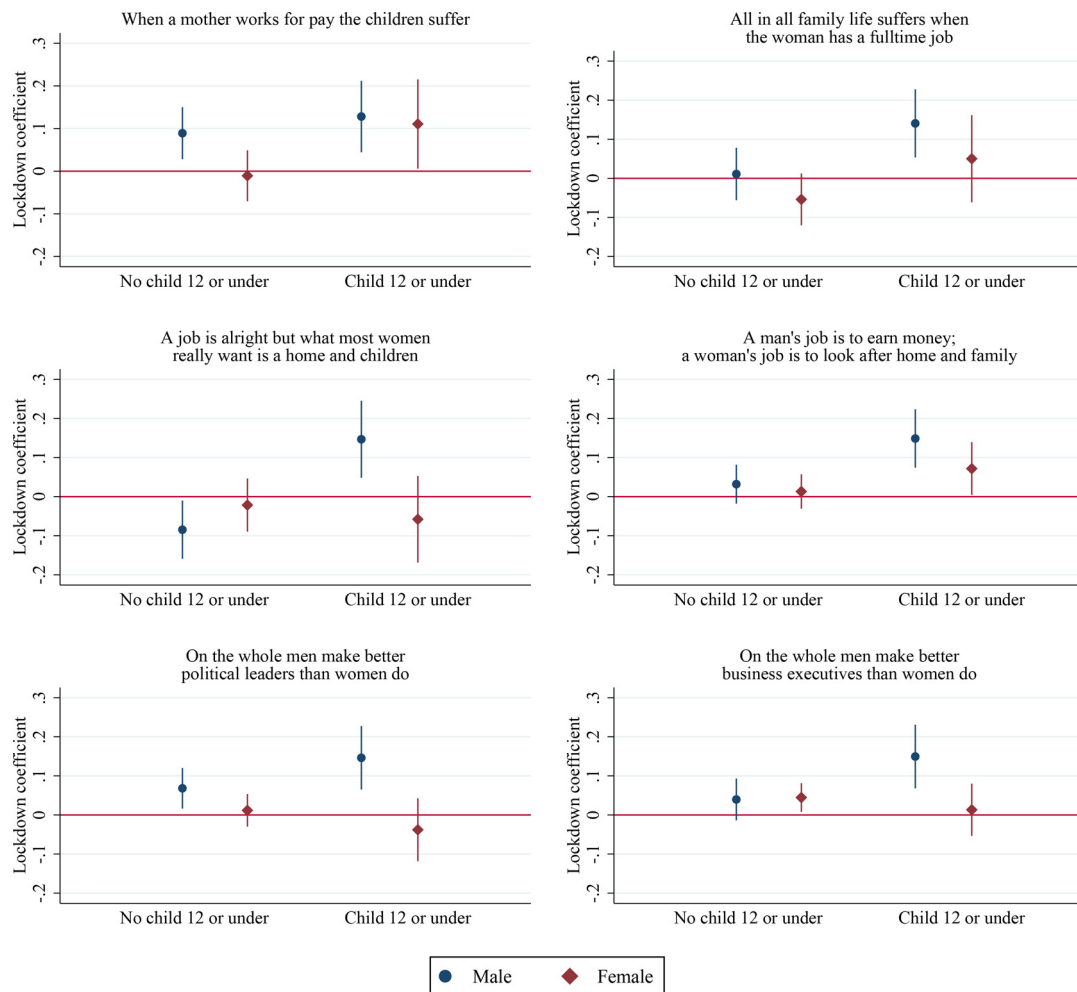


Fig. 6. Impact of lockdown on respondents' beliefs about gender roles, by having children twelve or under living in the household.

Source: Lockdown Survey (2020).

Notes: This figure shows the marginal effect of lockdown on the probability of agreeing with each statement for four groups of individuals: men with and without children twelve years old or under, and women with and without children twelve years old or under. To calculate these coefficients, we use the regressions for which we present the results in Table A3. All respondents (single individuals, same-sex couples, and opposite-sex couples) are included in the results we present. Bars represent 95% confidence intervals. The full model estimated in Table A3 is:

$$Y_{it} = \alpha + \gamma_1 Lockdown_{it} + \gamma_2 Female_i + \gamma_3 Lockdown_{it} \times Female_i + \gamma_4 Childbelow12_i + \gamma_5 Lockdown_{it} \times Childbelow12_i + \gamma_6 Female_i \times Childbelow12_i + \gamma_7 Lockdown_{it} \times Childbelow12_i \times Female_i + \delta X_{it} + \epsilon_{it}$$

and the corresponding marginal effects that we show in this Figure are equal to:

- γ_1 for men without children who are 12 years old or under
- $\gamma_1 + \gamma_5$ for men with children who are 12 years old or under
- $\gamma_1 + \gamma_3$ for women without children who are 12 years old or under
- $\gamma_1 + \gamma_3 + \gamma_5 + \gamma_7$ for women with children who are 12 years old or under.

associated. We examine the relationship between beliefs about gender roles and income by using cross-country data from the fifth wave of the EVS. We conduct a regression analysis among couples that live together, where an individual's agreement with each statement is the dependent variable and household income decile is the main independent variable, controlling for gender, age, marital status, number of children, education level of each partner, whether both partners are employed full time, and country fixed effects.

Fig. 8 depicts the predicted shares of men and women who agree with each statement, by household income decile. The results show that as income levels increase, both men and women are more likely to believe in equal gender roles. This relationship is strongest for the statements ascribing a role to women. This result could imply that egalitarian beliefs are a type of luxury good. However, we do not rule-out reverse causality: EVS respondents who live with a partner and who hold traditional beliefs are less likely to have a partner who is also employed full

time (Fig. A2 in the Appendix), which significantly correlates with the household being in a lower income decile.

Previous research has found that providing affordable access to early child care increases women's participation in the labor market (see Olivetti and Petrongolo, 2017 for a review). Overall, our results suggest that the provision of public services to outsource household production could lead to an increase in egalitarian beliefs in the population and reduce income inequalities across households through increased female labor force participation.

6. Robustness

6.1. Matching quality

Our estimations rely crucially on the quality of the predictions from the Nearest-Neighbor Match. We chose a large set of covariates for the

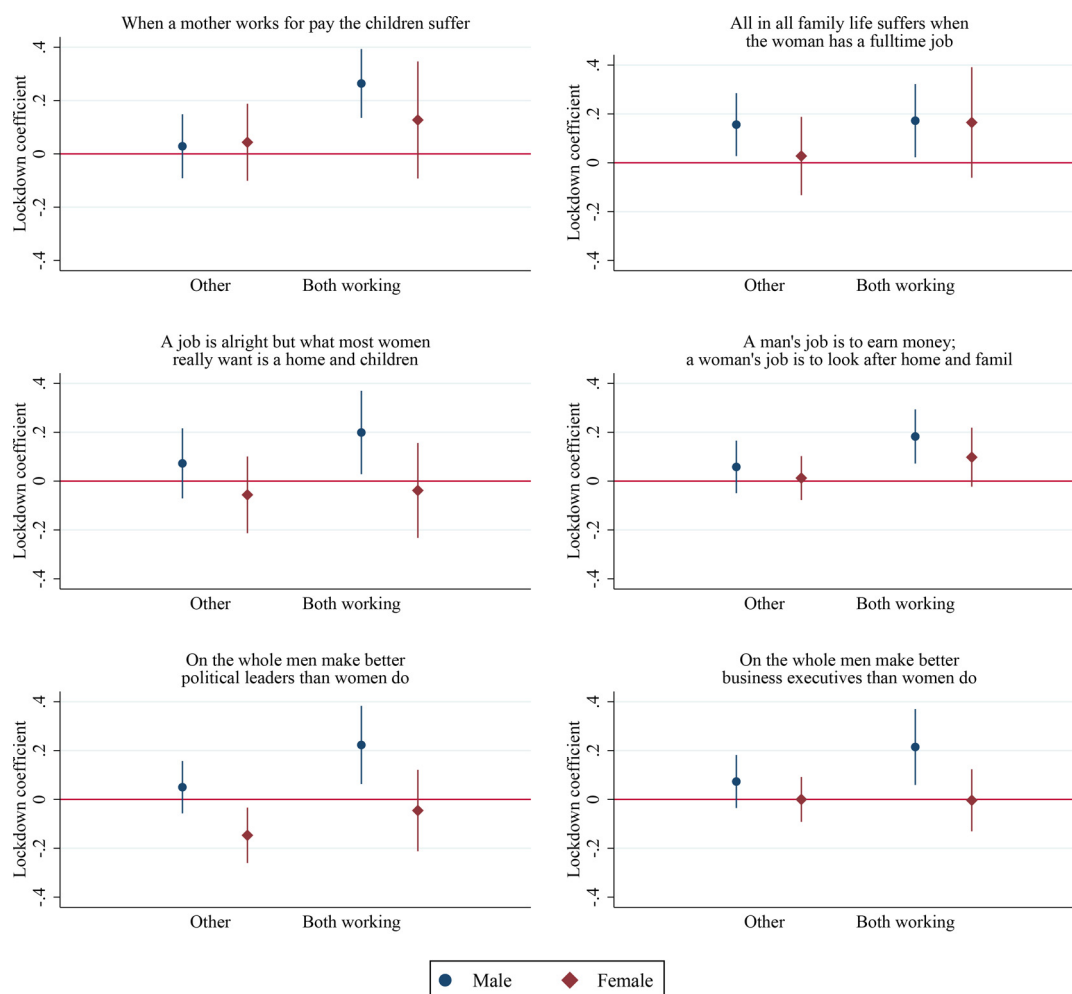


Fig. 7. Impact of lockdown on respondents' beliefs about gender roles, by occupational categories.

Source: Lockdown Survey (2020).

Notes: This figure shows the marginal effect of lockdown on the probability of agreeing with each statement for four groups of individuals: men in household where both partners work (from home or outside) or other, and women in household where both partners work (from home or outside) or other. “Both WfH or both working outside” represents the situations where partners experience an increase in household time constraints. To calculate these coefficients, we use the regressions for which we present the results in Table A5 in the Appendix. Only opposite-sex couples with children below age 12 are included in the results we present. Bars represent 95% confidence intervals.

match (see Table 1 and Section 2). Most of our Lockdown survey respondents (96%) obtained one match, 3.5% obtained two matches, and 0.5% obtained three matches. Table A2 in the Appendix provides information on covariate balance. This table shows how well the match worked, by presenting raw and weighted standardized differences and variance ratios of all covariates used in the Nearest-Neighbor Match for the statement “When a mother works for pay the children suffer”.²⁵ Although we do not have standard errors on these statistics and cannot make any formal conclusions, overall the summary statistics indicate that the matching exercise achieved balance. Indeed, the matched standardized differences and variance ratios are close to zero and to one, respectively. A few covariates show some degree of lack of balance: these are generally for groups with a low share of respondents, which do not massively weigh in our regressions. We do not show the results for the two exact match covariates, which by definition achieve balance.

Alternative sets of covariates for the Nearest-Neighbor Match provide advantages and drawbacks. For instance, we provide balancing re-

sults for a match based on a smaller set of covariates: age, marital status, education, and exact matches on female. This strategy yields up to seven matches for some Lockdown survey respondents. However, the balance is stronger (see Table A7 in the Appendix).

In Table A8 in the Appendix, we provide the average treatment effects for our baseline model (Model 1, with Mahalanobis distances, columns (1) to (6)). Other models tend to generate larger ATEs. For instance, the one using fewer matching covariates (age, marital status, education, and exact match on female, see Model 2), and for which the balance is stronger, produces an ATE of 8.1 p.p. compared to 6.8 p.p. for our preferred model. Table A8 further compares the ATEs estimated using different respondent characteristics to conduct the match, and using either Mahalanobis distances (columns (1) to (6)) or Euclidean distances (columns (7) to (12)). We find that our ATEs are comparable to the other models and to Euclidean distances. If anything, they tend to be smaller, which suggests that our estimated effect sizes throughout the paper may be on the more conservative side.

6.2. Alternative empirical strategies

We present the results of two extra analyses we conducted to test the robustness of our estimates to different empirical strategies.

²⁵ Results change marginally for each statement, as some Lockdown respondents chose not to answer some statements. Similar tables for the other statements are available upon request.

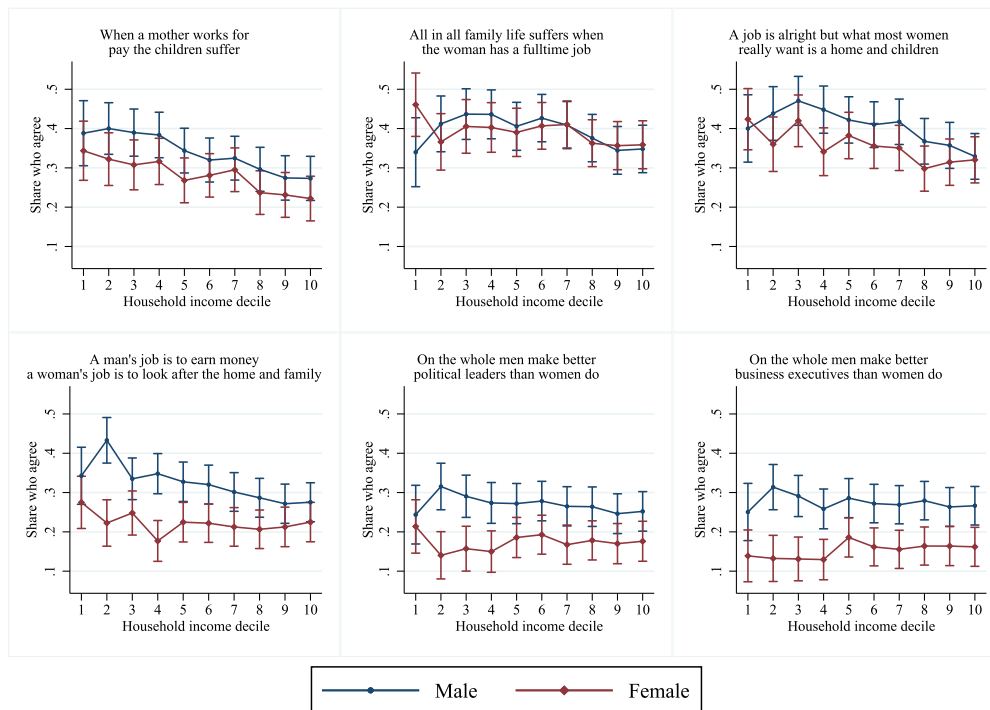


Fig. 8. Relationship between beliefs about gender roles and income categories, by gender.

Source: EVS (2018).

Notes: We use data from 30 different countries to examine the relationship between beliefs in equal gender roles and income. The figure presents the estimates of OLS regressions, controlling for gender, age, number of children, marital status, education level of each partner, whether both partners are employed full time, and country fixed effects. We select all working individuals who live with a partner from the full data set of the fifth wave of the EVS.

First, instead of matching respondents from the EVS survey and our Lockdown survey, we estimate our benchmark model using an OLS cross section analysis. Respondents from both surveys are representative of the French population, and descriptive statistics comparing respondents from both surveys (Table 1) suggest that both samples are comparable (the main difference between the two datasets concerns the education variable). Using this unmatched dataset, we find similar results to the analysis on the matched dataset. Results in Table A9 in the Appendix suggest that the lockdown period is associated with a statistically significant increase in beliefs in unequal gender roles across the same four out of six statements. Statement (2) is also significant in the unmatched dataset. Furthermore, the results from the unmatched dataset confirm that the main effects are different for men and women, and that men's beliefs are associated with a change during lockdown.

Second, we run our baseline model directly on the matched data. Compared to the main analysis (Table 4), we use the control variables from the Nearest-Neighbor Match in this exercise. Table A10 in the Appendix presents the results, which are similar in size and significance compared to the ones we present in Table 4.

6.3. Social-desirability bias

We check whether social-desirability or type-of-interview bias can explain our results. Indeed, respondents to our survey may have been more willing to express beliefs in unequal gender roles because our survey was conducted online, compared to the EVS survey which was conducted in person. We measure desirability bias by using data from the fifth wave of the EVS for six countries (Denmark, Finland, Germany, Iceland, the Netherlands, and Switzerland), where some respondents were interviewed in person and other respondents were surveyed online. In these countries, we compare respondents who answered each statement in the online version of the survey with the in-person interview version of the survey.

In Panel A of Table A11 in the Appendix, we show results of regressions where the coefficient on the variable *Online survey* measures the difference in the share of individuals who agree with each statement in the online version of the survey compared to the in-person interviews. We find that men are significantly more likely to agree with three statements (statements (3), (5), and (6)) in the online version, but men are

not significantly more likely in the online version to agree with most of the statements that associate women with traditional gender roles.

While social-desirability bias may explain part of our results, it is unlikely to explain a large share of the effects that we find for three reasons. First, the economic significance of the coefficients in Table A11 is smaller compared to the changes that we measure through our lockdown survey. Second, in our analysis, we make the conservative assumption that respondents would not have changed their beliefs between 2018 and before the lockdown. But had the decreasing trend of agreement on these statements continued, we would have expected a decrease in the share of respondents who agree with these statements in 2020 compared to 2018. Finally, Panel B of Table A11 shows that type-of-interview reporting bias generally does not depend on having young children in the household. This result further suggests that the effects we find during lockdown are not mainly driven by social-desirability bias.

7. Conclusion

In this research, we study whether beliefs about gender roles are entrenched or whether a shock that increases household production constraints can lead individuals to shift their beliefs towards more unequal gender roles. We find that more men believed in unequal gender roles during the first lockdown period in France. We find that men from households with young children and from households where both partners continued working either from home or outside the home during lockdown were more likely to shift beliefs. Women's beliefs, however, mainly did not change. These results suggest that time constraints and bargaining within the household were likely drivers of changes in beliefs about gender roles.

Our findings suggest that the increase in beliefs in equal gender roles that has occurred in many European countries, since at least the early 1990s, are likely related to families' ability to outsource household production. When governments implement policies that prevent the outsourcing of household production (such as during the lockdown period), then beliefs in traditional gender roles may increase. Our results suggest that individuals—men especially—may revert to traditional beliefs in gender roles when household production constraints increase.

Our findings also add to research conducted during the pandemic which has found that conflict within couples increased during the first

lockdown period (e.g., Arenas-Arroyo et al., 2021). Our findings point to an important role of beliefs regarding gender roles: beliefs in traditional gender roles may be motivated beliefs that serve as a coordination mechanism when couples are in a potential conflict over who should take responsibility for household production.

The effects we measure may be only short run effects: when lockdown measures disappear, household production constraints also disappear, and men may revert to beliefs in more equal gender roles. However, the length of the COVID-19 crisis could lead to long run impacts on individuals' beliefs, as well as women's participation in the labor market. The literature has highlighted that long-lasting shocks in gender roles can shape gender identity norms, which can explain cross-country differences in labor force participation of women in the long run (Alesina et al., 2013). For example, during World War II, women entered the labor market due to men's military involvement in the war; this change in gender roles persisted across generations and led to an increase in female labor force participation in the long run

(Fernández et al., 2004). However, early evidence of the impact of lockdown suggests that the effects on gender equality tend to be only short run, caused by the temporary lack of household production outsourcing possibilities. Huebener et al. (2022) find that two years after the first lockdown measures, respondents reverted back to more egalitarian beliefs when daycare facilities and schools had largely reopened. Overall, our results show the importance of public policies promoting affordable child-care facilities. Not only do these policies increase female labor force participation, but they also significantly help to support beliefs in gender equality.

Data availability

Data will be made available on request.

Appendix A

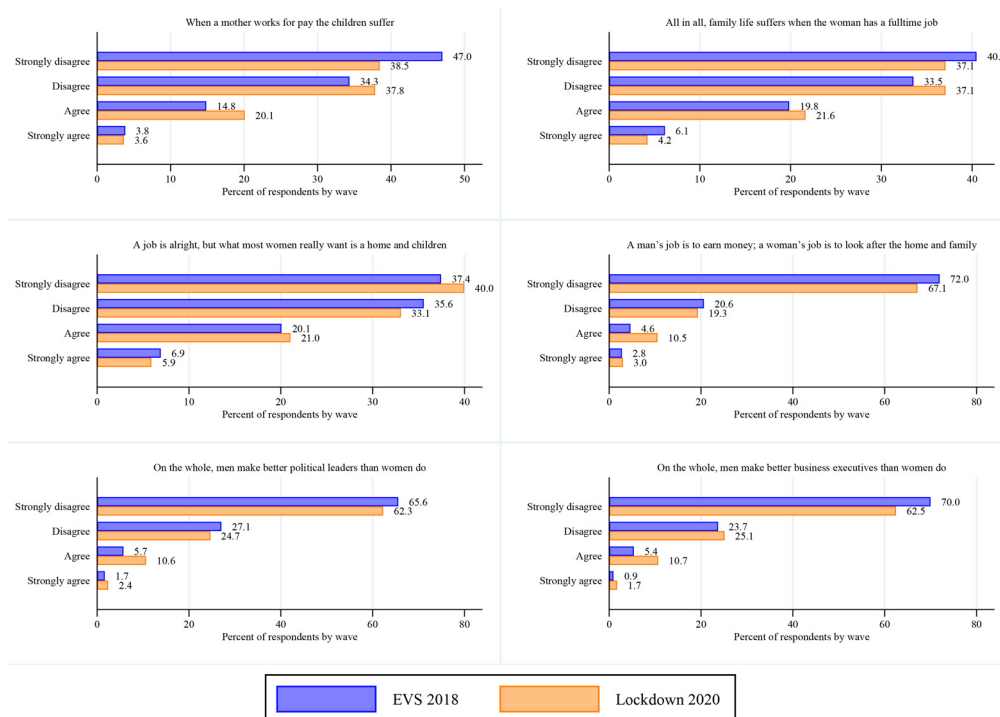


Fig. A1. Distributions of respondents' answers to the six statements on beliefs about gender roles, EVS 2018 and Lockdown 2020 surveys.

Source: EVS (2018) and Lockdown Survey (2020).

Notes: This figure shows the percentage of respondents who answered "Strongly disagree", "Disagree", "Agree" or "Strongly Agree" to each of the six statements on beliefs about gender roles, for each survey. All 871 EVS and 1000 Lockdown respondents are included.

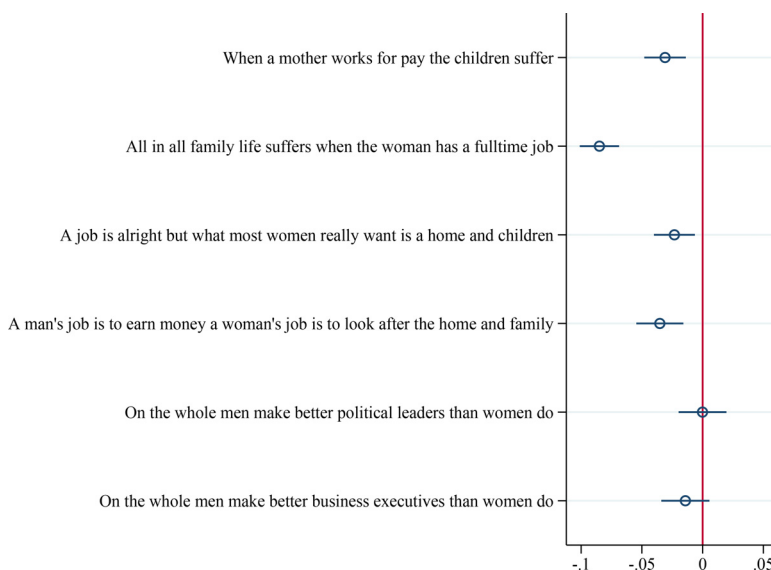


Fig. A2. Probability of both partners working full time as a function of beliefs about gender roles.

Source: EVS (2018).

Notes: We use data from 30 different countries to examine the relationship between beliefs about gender roles and whether both partners are employed full-time. The figure presents the estimates of six OLS regressions (one for each belief as the main independent variable) with both partners employed full time as the dependent variable, and controlling for gender, age, number of children, marital status, education level of each partner, and country fixed effects. We include all working individuals who live with a partner from the full data set of the fifth wave of the EVS.

Table A1
Demographic characteristics of Lockdown survey respondents compared to the French general working population.

	Lockdown	Working pop.
Panel A: Sampling quota categories		
Female	48.6%	48.6%
<i>Age categories</i>		
15 to 29 years old	16.6%	18.1%
30 to 39 years old	29.6%	24.2%
40 to 49 years old	23.8%	26.1%
50 to 59 years old	27.5%	25.0%
60+ years old	2.5%	6.6%
<i>Occupation categories</i>		
Farmers	1.3%	1.8%
Craftspeople	2.2%	3.3%
Tradespeople and similar	3.0%	2.9%
Heads of companies with 10 or more employees	0.8%	0.6%
Liberal professions	1.9%	2.1%
Public service executives	2.8%	1.9%
Professors, scientific professions	3.4%	3.2%
Information, arts and entertainment occupations	0.7%	1.4%
Administrative and commercial executives of companies	3.5%	5.8%
Engineers and technical managers of firms	5.0%	6.2%
School teachers, teachers and related professions	3.1%	3.7%
Intermediate health and social work professions	5.1%	6.1%
Clergy, religious	0.0%	0.0%
Intermediate admin. professions of the public service	4.1%	1.8%
Intermediate admin. and commercial professions of firms	3.3%	7.5%
Technicians (except tertiary)	6.4%	4.7%
Forepeople, supervisors (administrative mastery exc.)	3.8%	2.2%
Civilian employees and public servants	8.4%	8.6%
Police, military	1.2%	1.8%
Corporate administrative employees	9.4%	5.1%
Commercial employees	6.8%	4.2%
Personal service personnel	4.0%	6.1%
Industrial Skilled Workers	6.8%	3.8%
Craft-type skilled workers	2.4%	4.7%
Drivers	2.9%	2.4%
Skilled workers in handling, storage and transport	3.9%	1.7%
Industrial-type unskilled workers	2.0%	3.2%
Unskilled craftspeople	0.6%	2.5%
Agricultural and related workers	1.2%	0.8%
<i>Environment</i>		
Rural	30.5%	32.8%
Urban	69.5%	67.2%
<i>Region</i>		
Auvergne-Rhône-Alpes	15.0%	12.4%
Bourgogne-Franche-Comté	5.3%	3.8%
Bretagne	4.7%	4.9%
Centre-Val de Loire	3.8%	3.7%
Corse	0.4%	0.5%
Grand Est	7.6%	7.4%
Hauts-de-France	9.1%	8.4%
Ile-de-France	20.4%	21.7%
Normandie	4.4%	4.8%
Nouvelle-Aquitaine	8.6%	8.5%
Occitanie	8.0%	8.3%
PACA	5.6%	7.5%
Pays de la Loire	7.1%	5.8%
Other	0.0%	2.5%
Panel B: Other variables		
<i>Household type</i>		
Single person without children	21.0%	17.0%
Single person with children	4.1%	9.3%
Couple without children	25.1%	21.2%
Couple with children and other	49.8%	52.5%
<i>Hours worked</i>		
Part time	18.0%	18.6%
Full time (35h+)	82.0%	81.4%
Works as independent	8.7%	8.2%
<i>Education level</i>		
Less than <i>Baccalauréat</i>	16.9%	35.1%
High school graduate	22.7%	20.3%
Two years post graduate	23.3%	16.4%
Higher education	37.1%	29.0%

Source: Lockdown Survey (2020) and the *Enquête emploi en continue* for 2020, the French Labor Force Survey published by the French National Institute of Statistics and Economic Studies (INSEE, 2021). Since our sample included only workers who had an employment at the start of 2020, we dropped unemployed workers from the Labor Force Survey, before generating these descriptive statistics.

Table A2
Balance Matching: “When a mother works for pay the children suffer”, main match.

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
Age	-0.0356546	-0.0022867	0.9802612	0.962708
Marital status				
Cohabitation	0.1110451	0.0329116	1.222773	1.060654
Divorced	-0.1945616	-0.0510395	0.5228255	0.838527
Married	0.1310688	0.0114122	1.072533	1.004977
Separated	-0.2064774	-0.06471	0.3798315	0.7271586
Single	0.0102372	0.0311968	1.012357	1.03808
Widowed	-0.1111564	-0.0311308	0.2848113	0.7078696
Region				
Bourgogne Franche Comté	0.0193537	0.0076811	1.080905	1.032271
Bretagne	-0.0559077	-0.0102687	0.7949622	0.9582908
Centre-Val de Loire	0.0247522	0.0153184	1.131055	1.081618
Corse	0.0925987	0.0668527	.	.
Grand Est	-0.0183398	-0.0181524	0.9457854	0.9467287
Hauts-de-France	0.0282727	0.0201389	1.086512	1.062479
Ile-de-France	0.0189149	-0.0216054	1.028018	0.9709173
Normandie	-0.0803143	0.0025337	0.7258462	1.010395
Nouvelle Aquitaine	-0.1112806	-0.0429491	0.7410596	0.8909011
Occitanie	0.0326459	0.0338144	1.108383	1.11517
PACA	-0.0011401	-0.0025469	0.9953875	0.9895921
Pays de la Loire	0.0121315	-0.0045702	1.042901	0.9837799
Education				
High school graduate	0.0359501	0.012482	1.051713	1.018636
Two years post graduate	0.1161336	0.0654198	1.18026	1.102684
Higher education	0.2204322	0.1597543	1.178392	1.098982
Number of children	-0.1436282	-0.0762531	0.8326171	0.895671
Partner’s employment status				
Employed full-time	0.0602408	0.0145028	1.007435	1.00081
Employed part-time	0.0325185	0.0273363	1.148032	1.130376
Independent	0.1625499	0.0106363	2.918429	1.06635
Retired	0.126306	0.0156927	1.976771	1.08615
Housewife, husband	0.001104	0.0112577	1.006887	1.075081
Unemployed, searching	0.0851446	0	1.69317	1
Student	-0.0206534	0	0.7861119	1
Unemployed, not searching	0.0962404	0.011858	2.947835	1.132058

Source: EVS (2018) and Lockdown Survey (2020).

Notes: This table provides information on covariate balance, by presenting raw and weighted standardized differences and variance ratios of all covariates used in the Nearest-Neighbor Match for the statement “When a mother works for pay the children suffer”.

Table A3
Impact of lockdown on respondents’ beliefs about gender roles, by having children twelve years old or under living in the household.

Statement:	(1) Kids	(2) Family	(3) Home	(4) Money	(5) Politics	(6) Business
Dependent variable:	“Agree” or “Strongly Agree” with Statement					
Lockdown	0.089** (0.031)	0.011 (0.034)	-0.085** (0.038)	0.032 (0.025)	0.068*** (0.026)	0.040 (0.027)
Female	0.047* (0.028)	0.023 (0.033)	-0.112*** (0.036)	-0.032 (0.021)	-0.020 (0.020)	-0.082*** (0.020)
Lockdown × Female	-0.100** (0.042)	-0.065 (0.046)	0.063 (0.050)	-0.019 (0.033)	-0.057* (0.032)	0.005 (0.031)
Children	-0.047 (0.031)	-0.132*** (0.035)	-0.198*** (0.041)	-0.053** (0.026)	-0.027 (0.028)	-0.039 (0.029)
Lockdown × Children	0.039 (0.051)	0.130** (0.054)	0.232*** (0.062)	0.117*** (0.045)	0.078 (0.048)	0.110** (0.048)
Female × Children	0.092* (0.050)	0.222*** (0.056)	0.330*** (0.061)	0.031 (0.035)	0.099** (0.042)	0.081** (0.037)
Lockdown × Female × Children	0.082 (0.079)	-0.025 (0.084)	-0.268*** (0.089)	-0.058 (0.060)	-0.128* (0.065)	-0.141** (0.061)
Constant	0.252*** (0.061)	0.254*** (0.066)	0.467*** (0.074)	0.186*** (0.050)	0.227*** (0.053)	0.174*** (0.050)
Observations	1864	1886	1790	1928	1818	1846
R-squared	0.072	0.072	0.050	0.050	0.049	0.047

Source: Lockdown Survey (2020).

Notes: The dependent variable is a binary variable equal to one if response is “Agree” or “Strongly Agree” for each of the following statements. (1) Kids: “When a mother works for pay, the children suffer”. (2) Family: “All in all, family life suffers when the woman has a fulltime job”. (3) Home: “A job is alright but what most women really want is a home and children”. (4) Money: “A man’s job is to earn money; a woman’s job is to look after the home and family”. (5) Politics: “On the whole, men make better political leaders than women do”. (6) Business: “On the whole, men make better business executives than women do”. All columns control for the following characteristics: age, number of children, marital status, level of education, number of hours worked, and region fixed effects. Corresponding marginal effects can be found in Fig. 6. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors are in parentheses.

Table A4

Impact of lockdown on respondents' beliefs about gender roles, by having children twelve years old or under living in the household. Test for statistical difference between coefficients.

	Between gender, within group		Between groups, within gender	
	No child under 12	Child under 12	Male	Female
Statement(1): Kids	0.017	0.794	0.448	0.044
Statement(2): Family	0.158	0.198	0.017	0.105
Statement(3): Home	0.204	0.006	0.000	0.574
Statement(4): Money	0.566	0.129	0.010	0.143
Statement(5): Politics	0.077	0.001	0.103	0.261
Statement(6): Business	0.875	0.009	0.023	0.395

Source: Lockdown Survey (2020).

Notes: The table reports the results of the test for the differences between coefficients for the model in Fig. 6 (and Table A3 in the Appendix). The two columns on the left show the p -value tests for the *between gender, within group* differences, whereas the two columns on the right show the p -value tests for the *between groups, within gender* differences.

Table A5

Impact of lockdown on respondents' beliefs about gender roles, by occupational categories during lockdown.

Statement:	(1) Kids	(2) Family	(3) Home	(4) Money	(5) Politics	(6) Business
Dependent variable:	"Agree" or "Strongly Agree" with Statement					
Lockdown	0.029 (0.061)	0.156** (0.066)	0.073 (0.073)	0.058 (0.055)	0.050 (0.055)	0.073 (0.055)
Female	0.084 (0.061)	0.230*** (0.064)	0.204*** (0.069)	-0.037 (0.044)	0.065 (0.053)	-0.044 (0.043)
Lockdown × Female	0.015 (0.089)	-0.129 (0.095)	-0.129 (0.100)	-0.046 (0.069)	-0.197*** (0.071)	-0.073 (0.066)
Both working	-0.116*** (0.039)	-0.024 (0.050)	-0.002 (0.065)	-0.070** (0.032)	-0.019 (0.054)	-0.000 (0.056)
Lockdown × Both working	0.236*** (0.088)	0.016 (0.097)	0.127 (0.112)	0.125 (0.077)	0.173* (0.098)	0.141 (0.095)
Female × Both working	0.183* (0.098)	-0.005 (0.106)	-0.035 (0.112)	0.044 (0.054)	0.049 (0.093)	0.018 (0.078)
Lockdown × Female × Both working	-0.152 (0.157)	0.121 (0.167)	-0.109 (0.165)	-0.039 (0.108)	-0.072 (0.138)	-0.145 > (0.121)
Constant	0.314** (0.127)	0.045 (0.137)	0.289* (0.148)	0.393*** (0.104)	0.294*** (0.113)	0.283*** (0.105)
Observations	500	502	478	504	472	482
R-squared	0.106	0.099	0.127	0.112	0.083	0.092

Source: Lockdown Survey (2020).

Notes: The dependent variable is a binary variable equal to one if response is "Agree" or "Strongly Agree" for each of the following statements. (1) Kids: "When a mother works for pay, the children suffer". (2) Family: "All in all, family life suffers when the woman has a fulltime job". (3) Home: "A job is alright but what most women really want is a home and children". (4) Money: "A man's job is to earn money; a woman's job is to look after the home and family". (5) Politics: "On the whole, men make better political leaders than women do". (6) Business: "On the whole, men make better business executives than women do". All columns control for the following characteristics: age, number of children, marital status, level of education, number of hours worked, and region fixed effects. Corresponding marginal effects can be found in Fig. 7. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors are in parentheses.

Table A6

Impact of lockdown on respondents' beliefs about gender roles, by occupational categories. Test for statistical difference between coefficients.

	Between gender, within group		Between groups, within gender	
	Other 12	Both Wfh or outside 12	Male	Female
Statement(1): Kids	0.867	0.291	0.007	0.532
Statement(2): Family	0.176	0.957	0.868	0.325
Statement(3): Home	0.198	0.072	0.260	0.886
Statement(4): Money	0.507	0.307	0.107	0.262
Statement(5): Politics	0.006	0.023	0.077	0.323
Statement(6): Business	0.266	0.033	0.139	0.963

Source: Lockdown Survey (2020).

Notes: The table reports the results of the test for the differences between coefficients for the model in Fig. 7 (and Table A5 in the Appendix). The two columns on the left show the p -value tests for the *between gender, within group* differences, whereas the two columns on the right show the p -value tests for the *between groups, within gender* differences.

Table A7
Balance Matching: “When a mother works for pay the children suffer”, alternative match.

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
Age	-0.0356546	0.0164848	0.9802612	1.002498
Marital status				
Civil partnership	-0.012221	0	0.9655784	1
Cohabitation	0.1110451	0	1.222773	1
Divorced	-0.1945616	0	0.5228255	1
Separated	-0.2064774	0	0.3798315	1
Single	0.0102372	0	1.012357	1
Widowed	-0.1111564	-0.0311308	0.2848113	0.7078696
Education				
High school graduate	0.0359501	0.0067989	1.051713	1.009536
Two years post graduate	0.1161336	0.0027286	1.18026	1.003855
Higher education	0.2204322	0.0118463	1.178392	1.008531

Source: EVS (2018) and Lockdown Survey (2020).

Notes: This table provides information on covariate balance for a match based on the following covariates: age, marital status, education, and exact matches on female. It presents raw and weighted standardized differences and variance ratios of all covariates used in an alternative Nearest-Neighbor Match for the statement “When a mother works for pay the children suffer”.

Table A8
Impact of lockdown on beliefs in gender roles, ATE using different Nearest-Neighbor Matching models.

Statement:	Mahalanobis distance						Euclidean distance					
	(1) Kids	(2) Family	(3) Home	(4) Money	(5) Politics	(6) Business	(7) Kids	(8) Family	(9) Home	(10) Money	(11) Politics	(12) Business
Dependent variable:	“Agree” or “Strongly Agree” with Statement											
Model 1	0.068*** (0.022)	0.008 (0.024)	-0.008 (0.025)	0.049*** (0.016)	0.049*** (0.017)	0.050*** (0.016)	0.056** (0.023)	0.005 (0.023)	-0.028 (0.025)	0.055*** (0.016)	0.056*** (0.017)	0.049*** (0.016)
Model 2	0.081*** (0.022)	0.017 (0.024)	0.041* (0.025)	0.083*** (0.017)	0.071*** (0.017)	0.062*** (0.016)	0.068*** (0.022)	0.009 (0.023)	0.011 (0.025)	0.076*** (0.016)	0.060*** (0.016)	0.059*** (0.016)
Model 3	0.083*** (0.022)	0.021 (0.024)	0.000 (0.025)	0.068*** (0.016)	0.060*** (0.016)	0.059*** (0.015)	0.067*** (0.023)	0.012 (0.023)	-0.012 (0.025)	0.059*** (0.017)	0.059*** (0.017)	0.052*** (0.016)
Model 4	0.085*** (0.023)	0.016 (0.025)	0.011 (0.026)	0.075*** (0.016)	0.058*** (0.017)	0.064*** (0.015)	0.067*** (0.023)	0.005 (0.023)	-0.009 (0.025)	0.065*** (0.016)	0.057*** (0.017)	0.053*** (0.015)
Model 5	0.066*** (0.022)	-0.003 (0.023)	-0.010 (0.025)	0.064*** (0.016)	0.053*** (0.016)	0.060*** (0.015)	0.049** (0.022)	0.018 (0.022)	-0.012 (0.024)	0.063*** (0.016)	0.064*** (0.016)	0.061*** (0.015)
Model 6	0.105*** (0.023)	0.025 (0.025)	0.020 (0.026)	0.078*** (0.017)	0.066*** (0.016)	0.068*** (0.016)	0.064*** (0.023)	0.015 (0.023)	-0.011 (0.025)	0.048*** (0.017)	0.062*** (0.017)	0.054*** (0.016)
Model 7	0.067*** (0.022)	0.017 (0.023)	0.006 (0.025)	0.053*** (0.016)	0.055*** (0.016)	0.055*** (0.015)	0.061*** (0.022)	0.002 (0.023)	-0.027 (0.025)	0.059*** (0.016)	0.059*** (0.017)	0.052*** (0.016)
Model 8	0.063*** (0.023)	0.015 (0.024)	-0.014 (0.026)	0.052*** (0.016)	0.045*** (0.016)	0.053*** (0.015)	0.057** (0.022)	0.012 (0.024)	-0.023 (0.025)	0.051*** (0.016)	0.060*** (0.017)	0.048*** (0.016)

Source: EVS (2018) and Lockdown Survey (2020).

Notes: This table shows ATE of Nearest-Neighbor Matching models where the matching variables differ by model. Model 1 with Mahalanobis distance is the one we use for our main matching exercise. It matches on age, marital status, education, number of children, region, employment status of partner, and exact matches on female and having a child 12 or under. Model 2: matches on age, marital status, education, and exact matches on female. Model 3: matches on age, marital status, education, number of children, region, and exact matches on female. Model 4: matches on age, marital status, education, region, and exact matches on female. Model 5: matches on age, marital status, education, number of children, region, and exact matches on female and having a child 12 or under. Model 6: matches on age, education, number of children, region and exact matches on female and having a child 12 or under. Model 7: matches on age, marital status, education, number of children, region, employment status of partner, and exact matches on female. Model 8: matches on age, marital status, number of children, region, employment status of partner, and exact matches on female. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Robust standard errors are in parentheses.

Table A9
Impact of lockdown on respondents' beliefs about gender roles, Cross-sectional evidence.

Statement:	(1) Kids	(2) Family	(3) Home	(4) Money	(5) Politics	(6) Business
Dependent variable:	"Agree" or "Strongly Agree" with Statement					
Lockdown	0.103*** (0.027)	0.066** (0.029)	0.046 (0.031)	0.099*** (0.021)	0.115*** (0.022)	0.108*** (0.022)
Female	0.057** (0.026)	0.091*** (0.030)	0.014 (0.030)	0.001 (0.018)	0.015 (0.018)	-0.002 (0.017)
Lockdown × Female	-0.044 (0.037)	-0.066 (0.041)	-0.027 (0.042)	-0.046* (0.028)	-0.103*** (0.028)	-0.094*** (0.027)
Constant	0.293*** (0.077)	0.314*** (0.081)	0.421*** (0.085)	0.202*** (0.061)	0.197*** (0.064)	0.190*** (0.065)
Observations	1793	1804	1745	1826	1746	1778
R-squared	0.077	0.066	0.056	0.056	0.054	0.052

Source: EVS (2018) and Lockdown Survey (2020).

Notes: This table describes the results of our baseline regression described in Eq. (1), using a dataset that includes directly the responses from the EVS and Lockdown surveys (unmatched dataset). See Table A3 for the description of the six statements. All columns control for the following characteristics: age, level of education, number of children, marital status, and region fixed effects. We use the same control variables as the results presented in Table 4, except for number of hours worked, because the EVS dataset does not include this information. Significance levels: *** $p < 0.01$, ** $p < 0.05$. Robust standard errors are in parentheses.

Table A10
Impact of lockdown on beliefs in gender roles, Direct match.

Statement:	(1) Kids	(2) Family	(3) Home	(4) Money	(5) Politics	(6) Business
Dependent variable:	"Agree" or "Strongly Agree" with Statement					
Lockdown	0.134*** (0.024)	0.071*** (0.026)	0.033 (0.030)	0.081*** (0.021)	0.107*** (0.022)	0.072*** (0.023)
Female	0.073*** (0.022)	0.093*** (0.027)	0.016 (0.029)	-0.015 (0.017)	0.015 (0.018)	-0.049*** (0.017)
Lockdown × Female	-0.063* (0.035)	-0.069* (0.039)	-0.026 (0.041)	-0.035 (0.027)	-0.098*** (0.028)	-0.044 (0.027)
Constant	0.361*** (0.074)	0.283*** (0.080)	0.277*** (0.088)	0.196*** (0.061)	0.137** (0.062)	0.081 (0.062)
Observations	1872	1894	1796	1936	1824	1854
R-squared	0.104	0.072	0.060	0.058	0.063	0.056

Source: EVS (2018) and Lockdown Survey (2020).

Notes: This table shows the corresponding results of Table 4 using the matched sample directly, and using the variables that we used to conduct the Nearest-Neighbor Match as controls: age, level of education, marital status, the number of children living in the household, the partner's employment status, and region fixed effects. See Table A3 for the description of the six statements. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A11
Analysis of response bias, in person interview versus self-administered, EVS 2018.

Statement:	(1) Kids	(2) Family	(3) Home	(4) Money	(5) Politics	(6) Business
Dependent variable:	"Agree" or "Strongly Agree" with Statement					
Panel A: Benchmark						
Online survey	-0.003 (0.012)	0.028** (0.014)	0.041*** (0.014)	0.017** (0.009)	0.044*** (0.009)	0.048*** (0.010)
Female	-0.068*** (0.013)	0.026* (0.014)	-0.050*** (0.014)	-0.033*** (0.009)	-0.014 (0.009)	-0.045*** (0.010)
Online survey × Female	-0.019 (0.016)	-0.033* (0.019)	-0.040** (0.018)	-0.017 (0.011)	-0.061*** (0.012)	-0.072*** (0.013)
Constant	0.239*** (0.029)	0.338*** (0.033)	0.361*** (0.032)	0.165*** (0.020)	0.229*** (0.022)	0.259*** (0.022)
Observations	8453	8429	8313	8494	8421	8421
R-squared	0.104	0.160	0.103	0.051	0.035	0.046
Panel B: Young children living in the household						
Online survey	-0.002 (0.017)	0.003 (0.019)	0.056*** (0.018)	0.026** (0.012)	0.060*** (0.012)	0.061*** (0.013)
Female	-0.078*** (0.018)	-0.025 (0.021)	-0.046** (0.020)	-0.033*** (0.013)	-0.013 (0.014)	-0.040*** (0.014)
Online survey × Female	-0.023 (0.023)	0.001 (0.026)	-0.084*** (0.025)	-0.023 (0.016)	-0.074*** (0.017)	-0.088*** (0.018)
Children	-0.011 (0.018)	-0.019 (0.021)	-0.020 (0.020)	0.003 (0.013)	0.016 (0.013)	0.005 (0.014)
Online survey × Children	-0.004 (0.023)	0.050* (0.026)	-0.033 (0.025)	-0.020 (0.016)	-0.034** (0.017)	-0.028 (0.018)
Female × Children	0.018 (0.025)	0.099*** (0.029)	-0.008 (0.028)	-0.000 (0.018)	-0.004 (0.019)	-0.010 (0.019)
Online survey × Female × Children	0.011 (0.033)	-0.062* (0.037)	0.097*** (0.036)	0.014 (0.023)	0.030 (0.025)	0.033 (0.025)
Constant	0.243*** (0.030)	0.368*** (0.034)	0.364*** (0.033)	0.162*** (0.021)	0.223*** (0.023)	0.253*** (0.023)
Observations	8453	8429	8313	8494	8421	8421
R-squared	0.104	0.162	0.105	0.052	0.035	0.047

Source: EVS (2020).

Notes: Data include respondents' beliefs about gender roles in six countries where a mixed-method (online survey or in-person interview) was applied for data collection: Denmark, Finland, Germany, Iceland, Netherlands, and Switzerland. See Table 3 for the description of the six statements. All regressions include regional fixed effects, as well as controls for age, level of education, marital status, and whether the respondent has children living in the household. Full results are available on request. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

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