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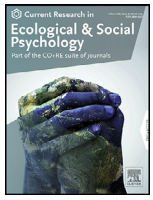

Regional traditional gender stereotypes predict the representation of women in the workforce in 35 countries across five continents

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ABSTRACT

Intergroup biases have been studied on an individual level for decades, but recent research has examined intergroup bias as a regional phenomenon. Aggregated responses on bias tests from individuals in geographic proximity have shown to relate to important society-level discriminatory outcomes. In the present research, we examined the pressing issue of gender inequalities in employment using this regional perspective on intergroup bias. Using large scale open-access datasets, we investigated how psychological measures of regional gender stereotypes associating men with careers and women with families (*traditional gender stereotypes*) related to the representation of women in the workforce and parental leave policies in 35 member countries of the Organization for Economic Co-operation and Development (OECD) across 5 continents. In countries with stronger traditional gender stereotypes, we found that women were less represented in the workforce and, specifically, in manager positions. Regional traditional gender stereotypes were inconsistently related to parental leave policies. These findings suggest that the framework of regional intergroup bias may be fruitful to explain regional differences in gender disparities.

Intergroup bias – the tendency to evaluate people based on their group membership – has historically been conceptualized as a property of individuals (Allport, 1954). However, recent research in social psychology has begun to investigate intergroup bias as a regional phenomenon (for a summary, see Calanchini et al., 2022). A growing body of literature has documented that the aggregated biases of individuals in geographic proximity are related to important society-level outcomes. For example, in regions with stronger racial biases, police disproportionately kill Black people (Hehman et al., 2018) and teachers disproportionately discipline Black students (Riddle and Sinclair, 2019). Similarly, in regions with stronger gender stereotypes, schoolgirls underperform relative to boys in science and mathematics (Nosek et al., 2009), psychotherapy is less effective for girls than boys, (Price et al., 2021), and women are less represented in the workforce relative to men (Fortin, 2005; Uunk, 2015). These findings highlight the value of regional intergroup bias research to explain society-level inequalities and discrimination. Building on this approach, in the present research, we examine *traditional gender stereotypes* – associations between men and careers, and between women and families – as they relate to the pressing issue of country-level gender inequalities in employment rates and parental leave policies.

1. Gender employment gaps around the world

A wide variety of international organizations converge on the conclusion that gender inequality in the workplace is an important problem facing the world today (United Nations, 2015; World Economic Forum, 2021). According to the International Labour Organization (2022), in 2022 < 47% of the world's women participated in the labor force, whereas 72% of men participated in the workforce. However, gender inequality in the workplace varies considerably between countries. For example, countries like Egypt, Afghanistan, and India have more than a 50% gap between men's and women's participation in the workforce, whereas in countries like Sweden, Kenya, and Papua New Guinea the gender employment gap is below 5% (International Labour Organization, 2022).

To explain between-country differences in the gender employment gap, previous research has often focused on institutional factors such as availability of child care and policies to support women's employment (Boeckmann et al., 2015; Chai et al., 2022; Steiber and Haas, 2012). However, institutions necessarily exist in larger cultural contexts, such that cultural stereotypes about traditional gender roles may also be related to the gender employment gap. Indeed, social role theory

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(Eagly and Wood, 2016) proposes a recursive relationship between stereotypes and the representation of women and men in stereotypic roles: gender stereotypes influence individual behavioral decisions in role-congruent directions, and role-congruent behavior influences (or creates) gender stereotypes. Specifically, if women in a society disproportionately engage in caretaking activities and men disproportionately engage in career-oriented activities, then that society is likely to form stereotypes that women are caring, warm, and social, and that men are agentic, competent, and competitive (Eagly and Wood, 2016). Cultural stereotypes, in turn, inform norms about expected and proper behavior, such that women and men will both be more likely to engage in gender-congruent behavior, self-select into gender-congruent roles, and face resistance in gender-incongruent pursuits. In line with this theorizing, many studies have documented that women's gender-role attitudes predict outcomes related to women's employment behavior (Davis and Greenstein, 2009; Evans and Diekman, 2009; Lietzmann and Frodermann, 2021; Vincent et al., 1998). For instance, making traditional gender stereotypes salient reduces women's aspirations for leadership positions (Davies et al., 2005), and women's endorsement of traditional gender stereotypes early in life predicts their career intentions and behavior later in life (Vincent et al., 1998). Conversely, frequent exposure to counterstereotypic exemplars – such as women in leadership positions – reduced women's belief in traditional gender stereotypes (Dasgupta and Asgari, 2004). In this and most other research on the relationship between traditional gender stereotypes and the gender employment gap, the focus has been at the level of the individual, but we propose that the same relationships should also emerge at higher levels of analysis – such as countries. Indeed, previous research that investigated gender employment gaps at the country level found that women's employment rates are lower in countries where residents hold less egalitarian views (Fortin, 2005; Uunk, 2015). Specifically, country-level agreement with the statement "When jobs are scarce, men should have more right to a job than women" was the most important predictor of country-differences in women's employment rates across 25 OECD (Organisation for Economic Co-operation and Development) countries using data collected between 1990 and 1999 (Fortin, 2005). Similarly, countries that scored higher on an index of "gender-role attitudes", which included eight items from the European Values Survey on the role of women and men in paid work, care, and household tasks, had lower rates of women participating in the labor force across 33 OECD countries using data collected between 2008 and 2010 (Uunk, 2015). Both of these studies exclusively relied on data from the World Values Survey and the European Values Survey, which poses the question whether the findings replicate using different data sources. Additionally, in many countries around the world, traditional gender stereotypes have changed towards egalitarianism in the years since Fortin (2005) and Uunk (2015) published their findings (Charlesworth and Banaji, 2022). Hence, an open question remains whether the relationship between traditional gender stereotypes and gender employment gaps persists in today's relatively more egalitarian climate.

2. Parental leave policies across the world

Gender employment gaps exist, in part, because women around the world are largely responsible for unpaid domestic work. According to the Global Gender Gap Report 2019 (Schwab et al., 2019), gender equality in domestic work has not been achieved in any country in the world. Even in countries like Norway or the US, with the smallest gaps between men and women in unpaid domestic work, women spend almost twice as much time on unpaid domestic work than men (Schwab et al., 2019). Many policy makers and researchers have argued that providing highly-paid and non-transferrable parental leave to fathers will boost their participation in family and caregiving roles and, thus, help to close the gender gap in household and care responsibilities (Castro-García and Pazos-Moran, 2016; OECD, 2017, 2020). Social role theory (Eagly and Wood, 2016) would further suggest that boosting the participation – and, thus, the representation – of men in the counterstereotypic role of the care-taker will help to reduce gender stereotypes (OECD, 2017), a perspective supported by empirical research (Omidakhsh et al., 2020). However, despite these calls and evidence, paid parental leave reserved for fathers (9 weeks on average) lagged far behind paid parental leave for mothers (50 weeks on average) in OECD countries as recently as 2020 (OECD, 2021). To the extent that parental leave policies are often implemented at the nation level, we propose that nation-level traditional gender stereotypes may be one mechanism underlying inequalities in parental leave. When operationalized at region levels, stereotypes can be understood to reflect shared social norms (Calanchini et al., 2022), and such norms should be expected to influence policy-makers' decisions.

3. The present research

In the present study, we investigate between-country differences in traditional gender stereotypes as they relate to between-country differences in the representation of women in gender-incongruent roles in the workforce and parental leave policies. In line with social role theory (Eagly and Wood, 2016), we hypothesized that women in countries with stronger traditional gender stereotypes will be less represented in the workforce – and especially in high-status positions – compared to countries with weaker traditional gender stereotypes. Given that women often bear primary responsibility for unpaid domestic work and, thus, may not have time to engage in full-time paid employment, we further hypothesized that women in countries with stronger traditional gender stereotypes will be more represented in part-time positions compared to countries with weaker traditional gender stereotypes. However, we had competing hypotheses about the relationship between traditional gender stereotypes and parental leave policies. On the one hand, countries with stronger traditional gender stereotypes may provide less parental leave for mothers based on the assumption that women should stay at home to care for families, regardless of financial compensation. On the other hand, countries with stronger traditional gender stereotypes may provide more parental leave to mothers to encourage them to fulfill their stereotype-congruent role as caretakers. Similarly, countries with stronger traditional gender stereotypes may provide less parental leave for fathers based on the assumption that caring for families is the duty of mothers rather than fathers. However, the converse may be true, such that countries with stronger traditional gender stereotypes provide more parental leave for fathers to protect men's stereotype-congruent place in the workforce by allowing fathers to temporarily care for their family without loss of pay or job security.

We tested these hypotheses using traditional gender stereotypes data from two separate publicly-available sources – Project Implicit (https://www.projectimplicit.net/) and the Integrated Values Survey (IVS, EVS, 2021; Haerpfer et al., 2021) – and using data on employment and parental leave policies from the OECD. Thus, the present research represents multiple extensions of the work of Fortin (2005) and Uunk (2015) who examined the relationship between country-level gender stereotypes and the representation of women in the workforce. Specifically, Fortin (2005) relied only on data from the World Values Survey to examine women's employment rates, and Uunk (2015) relied only on data from the European Values Study to examine the overall representation of women in the workforce. By using additional datasources, we are able to test the robustness of previous findings. Additionally, the present research combines the most recent waves of data collection from both sources, which represents 10–20 more years of data than were included in previous work. Further, the present research explores parental leave policies and thus examines an additional indicator of country level gender inequalities. As such, the present research is positioned to contribute both comprehensive and timely insight into the relationship between traditional gender stereotypes, women's representation in the workforce and inequalities in parental leave policies in countries around the world.

4. Method

The present study was preregistered, and we report all preregistered analyses and state explicitly if we diverged from any preregistered analysis plans or ran additional exploratory analyses. The preregistration, along with all data files and analysis files, can be found at https://osf.io/45e8c/.

4.1. Data sources

4.1.1. Regional traditional gender stereotypes

We relied on two openly-accessible data sources: Project Implicit (Xu et al., 2022) and the Integrated Values Survey (IVS). Project Implicit is a demonstration website hosted by a team of (primarily) social psychologists specifically aimed to study intergroup bias. We used data from the US-based website, and all volunteers completed the survey in English. The raw dataset consisted of 3661,784 individual responses (1828,634 completed surveys) from 240 countries collected between 2005 and 2021.The Integrated Values Survey is a joint dataset created from trend files of the European Values Study (EVS, 2021) and the World Values Survey (Haerpfer et al., 2021). Both the European Values Study and the World Values Survey are comparative social surveys conducted globally every 5 years. The data is collected by an international network of social scientists in the respective language of each country in primarily face-to-face interviews. The raw IVS dataset consisted of 654,199 individual responses from 116 countries collected between 1981 and 2022. Whereas Project Implicit collects data online from interested volunteers, the IVS reflects representative samples of residents in each country surveyed. We report a descriptive overview of these data sources, with sample characteristics including age and gender compositions by country, in the supplement.

4.1.1.1. Gender-Career Implicit Association Test. Project Implicit administers a variety of Implicit Association Tests (Greenwald et al., 1998), including one configured to assess traditional gender stereotypes. In the Gender-Career Implicit Association Test, participants use two response keys to respond to words that belong to the categories *family* (Wedding, Marriage, Parents, Relatives, Family, Home, Children) and *career* (Career, Corporation, Salary, Office, Professional, Management, Business), along with female or male names. The procedure consists of 7 blocks in which participants first practice responding to male names with one key, and to female names with the other key in block 1. In block 2, they practice responding to career words with one key, and to family words with the other. In blocks 3 and 4, both sets of stimuli are combined and participants respond to male names and career words with one key, and to female names and family words with the other key. Block 5 is another practice block, and is identical to block 2, but with the key assignments for career and family words reversed. Blocks 6 and 7 are identical to blocks 3 and 4, but with the key assignments for career and family words reversed. The order in which blocks 3 and 4 versus blocks 6 and 7 are presented is counterbalanced, such that some participants complete stereotype-congruent (blocks 3 and 4) trials first, and other participants complete stereotype-incongruent (blocks 6 and 7) trials first. The latency of each response is recorded, and the average difference in response latency to stereotypic (i.e., blocks 3 and 4) versus counter-stereotypic (i.e., blocks 6 and 7) trials is calculated according to the *D*-scoring algorithm (Greenwald et al., 2003). Positive *D*-scores are interpreted to reflect stronger implicit traditional gender stereotypes.

4.1.1.2. Self-reported traditional gender stereotypes. We operationalized self-reported traditional gender stereotypes in terms of two items from Project Implicit and five items from the IVS. Project Implicit participants answered on a 7-point scale how much they associated family and, separately, career with females versus males (1 = Strongly female, 4 = Neither male nor female, 7 = Strongly male). We calculated a difference score by subtracting responses to the career item from the family item to create an index that is parallel in interpretation to the *D*-score of relative stereotypes from the Implicit Association Test. Positive scores indicate more endorsement of traditional gender stereotypes.

We examined five items from the IVS in which participants answered how much they agreed or disagreed with the following statements: "Men make better political leaders than women do"; "University is more important for a boy than for a girl"; "Pre-school child suffers with working mother"; "Men make better business executives than women do" (4-point scales: 1 = Agree Strongly, 4 = Disagree strongly); "Men should have more right to a job than women" (3-point scale: 1 = Agree, 2 = Disagree, 3 = Neither). We recoded responses on the 4-point scales such that higher scores indicate more agreement with the statement and, thus, more endorsement of traditional gender stereotypes. We recoded responses on the 3-point scale such that "Neither" is between "Disagree" and "Agree".

4.1.2. Representation of women in the workforce

We used data collected by the OECD on women's employment situation from the Gender Data Portal (https://www.oecd.org/gender/data/). For each country, we examined the following indicators (in percent): share of women participating in the labor force; share of female managers; female share of seats on boards of the largest publicly listed companies; female share of seats in national parliaments; share of employed women in part-time positions; share of employed women in involuntary part-time positions.

4.1.3. Parental leave policies

We obtained data on parental leave policies from the OECD Family Database (https://www.oecd.org/els/family/database.htm) and used the following indicators for our analyses (in weeks): paid parental leave for mothers; protected parental leave for mothers; paid parental leave for fathers; protected parental leave for fathers. From these indicators we calculated the sum of paid parental leave available to both mothers and fathers (*overall paid parental leave*), and the sum of protected parental leave available to mothers and fathers (*overall protected parental leave*).[1] Finally, on an exploratory basis and not preregistered, we also calculated an index of inequality by subtracting the amount of paid/protected leave available to fathers from the amount of paid/protected leave available to mothers to capture how much more paid/protected parental leave mothers get relative to fathers (*paid/protected parental leave inequality index*).

4.1.4. Covariates

To check the robustness of our findings, we included a number of theoretically-relevant covariates in our analyses: Gross domestic product (GDP, in US dollars/capita); Human Development Index (HDI, higher scores = higher human development); GINI coefficient (higher scores = more income inequality); Gender Inequality Index (GII, higher scores = high gender inequality)[2]; percentage of women in the population; median age of a country; overall employment rate in a country

[1] We preregistered to calculate the sum of paid and protected leave (for mothers and fathers separately) to get an estimate of overall maternal and paternal leave, as well as to calculate percentages of paid and protected parental leave by dividing the amount of paid/protected parental leave for mothers/fathers by the sum of paid and protected leave for mothers/fathers. However, upon exploring the details of the OECD data we learned that this approach would not be warranted because paid and protected leave estimates are not independent. Instead, part of paid parental leave could also be protected parental leave and protected parental leave could also partially be paid. Consequently, we deviated from preregistration and did not calculate these additional variables.

[2] At the suggestion of reviewers, we re-ran all analyses excluding the Gender Inequality Index, and report them in the supplement. The pattern of results in these re-analyses largely replicates what we report in the main text.

Table 1
Overview of data sources, variables, indices, and reliability statistics.

Construct	Data Source	Variables	Index	Cronbach's α
Regional traditional gender stereotypes	Project Implicit (PI)	1. "How strongly do you associate family/career with males and females?" 2. Gender-Career Implicit Association Test	Project Implicit Stereotype-index	.72
	Integrated Values Survey (IVS)	1. Men should have more right to a job than women 2. Men make better political leaders than women do 3. University is more important for a boy than for a girl 4. Pre-school child suffers with working mother 5. Men make better business executives than women do	IVS Stereotype-index	.95
Representation of women in the workforce	OECD Employment Database	1. Share of women participating in the labour force 2. Share of female managers 3. Female share of seats in national parliaments 4. Female share of seats on boards of the largest publicly listed companies	Representation index	.79
		1. Share of employed women in part-time positions 2. Share of employed women in involuntary part-time positions	Part-time index	.51
Parental leave policies	OECD Family Database	1. Parental leave for mothers (paid/protected) 2. Parental leave for fathers (paid/protected) 3. Overall parental leave (parental leave for mothers + parental leave for fathers) 4. Parental leave inequality index ((parental leave for mothers – parental leave for fathers)	N/A	N/A

(in percent); total fertility rate (children/woman). We collected these covariates from various data sources which are listed in the supplement and can be found in the preregistration of this study. We also report descriptive statistics for all covariates in the supplement.

4.2. Analysis plan

4.2.1. Data preparation

We first filtered the datasets according to our preregistered exclusion criteria. In the Project Implicit dataset, we excluded participants without completed sessions, and participants who reported different citizenship from their current country of residence. In line with recommendation by Greenwald et al. (2003), we also excluded participants who responded faster than 300 ms in more than 10% of the trials in the Implicit Association Test. The final individual-level dataset consisted of 1474,588 responses from 222 countries collected between 2005 and 2021. We aggregated the responses of Project Implicit visitors in each country into country-level estimates of traditional gender stereotypes. This final country-level dataset reflected traditional gender stereotype estimates for 222 countries.

We preregistered a parallel exclusion criterion for the IVS data, such that we would only use data from participants who reported the same country of birth as the country of data collection. Unfortunately, the variable for country of birth was not available in the joint IVS dataset because that information was only collected in waves 2 and 3 (from 1989 to 1998) in the World Values Survey and never collected in the European Values Study. Consequently, we deviated from preregistration and kept all participants who had an assigned country of data collection in the IVS. The final individual-level IVS dataset consisted of 654,199 responses from 114 countries collected between 1981 and 2022. We aggregated the responses of IVS respondents in each country into country-level estimates of each of the five self-report measures of traditional gender stereotypes. This final country-level dataset reflected traditional gender stereotype estimates for 114 countries.

We did not preregister any exclusion criteria for the OECD datasets, which is only available with country-level information. The women's representation data were collected between 1990 and 2020, and the parental leave data were collected between 1970 and 2021. Consequently, for both OECD datasets, we averaged each variable across all available years for each country. These final country-level datasets reflected women's representation for 44 countries, and reflected parental leave policies for 38 countries.

The years of data collection varied considerably across datasets. In order to maximize theoretical precision, we limited analyses to the first year for which all datasets overlap (2005) through the most recent year of data collection (2020–2022)[3,4]. This exclusion criterion resulted in data from 222 countries in the Project Implicit dataset, 108 countries in the IVS dataset, 44 countries in the OECD employment dataset, and 38 countries in the OECD parental leave policies dataset. Consequently, the final dataset consisted of 35 countries, for which we had full and matching data.

4.2.2. Data reduction

We collected variables from multiple sources that we assumed to reflect three main constructs of interest: traditional gender stereotypes, representation of women in the workforce, and parental leave policies. We tested these assumptions in two ways: first by examining bivariate correlations among all variables, and second with exploratory factor analysis. Following recommendations by Costello & Osborne (2005), we ran factor analysis using the maximum likelihood method and the oblique rotation method promax, and examined the scree-plot and ran parallel analysis to determine the number of factors. We describe the main results of these analyses below, and summarize them in Table 1. All details on the exploratory factor analyses, including scree-plots and factor loadings can be found in the supplement.

4.2.2.1. Regional traditional gender stereotypes. The Implicit Association Test's *D*-score and the self-report difference score from the Project Implicit dataset correlated strongly and positively ($r = 0.56$, $p = .010$). Similarly, all stereotype measures from the IVS dataset correlated strongly and positively with one another (all $r >= 0.62$, all $p < .001$). However, to our surprise, the Project Implicit stereotype measures correlated negatively and/or unreliably with the IVS stereotype measures. We summarize these correlations in Table 2.

[3] We preregistered to limit the datasets to the years for which all datasets overlap. However, differences in the intervals between data collection across datasets complicated this plan. The earliest year in which all datasets included data was 2005, and 2020 was the most recent year in which all datasets included data. Given that one of the primary aims of the present research is to examine current trends in the relationship between gender stereotypes and gender employment gaps, we deviated from preregistration by including in analyses whatever the most recent year of data collection was for each dataset, which was 2021 for Project Implicit, 2020 for OECD, and 2020-2022 for IVS.

[4] To test the robustness of our findings and as a complement to the time-aligned analyses aimed at maximizing theoretical precision we report in the main text, we also preregistered to run a set of analyses aimed at maximizing statistical power by aggregating data for all available years. The results from these analyses can be found in the supplement. They largely replicate the pattern of results reported in this manuscript.

Table 2
Correlations between items on regional traditional gender stereotypes.

Item		1	2	3	4	5	6	7	8
1	Gender-Career Implicit Association Test								
2	Association Family/Men	−0.20							
3	Association Career/Men	.61***	−0.06						
4	Associations Difference Score	.56***	−0.69***	.77***					
5	Men more right to a job than women	−0.12	.26	.05	−0.13				
6	Men better political leaders than women	−0.14	.06	−0.04	−0.07	.84***			
7	University more important for a boy	−0.25	.19	.02	−0.11	.83***	.91***		
8	Men better business executives than women	−0.12	.04	−0.07	−0.08	.85***	.99***	.90***	
9	Child suffers with working mother	−0.13	.10	.12	.02	.64***	.66***	.64***	.62***

Note.
*= $p < .05$;.
**= $p < .01$;.
*** = $p < .001$.

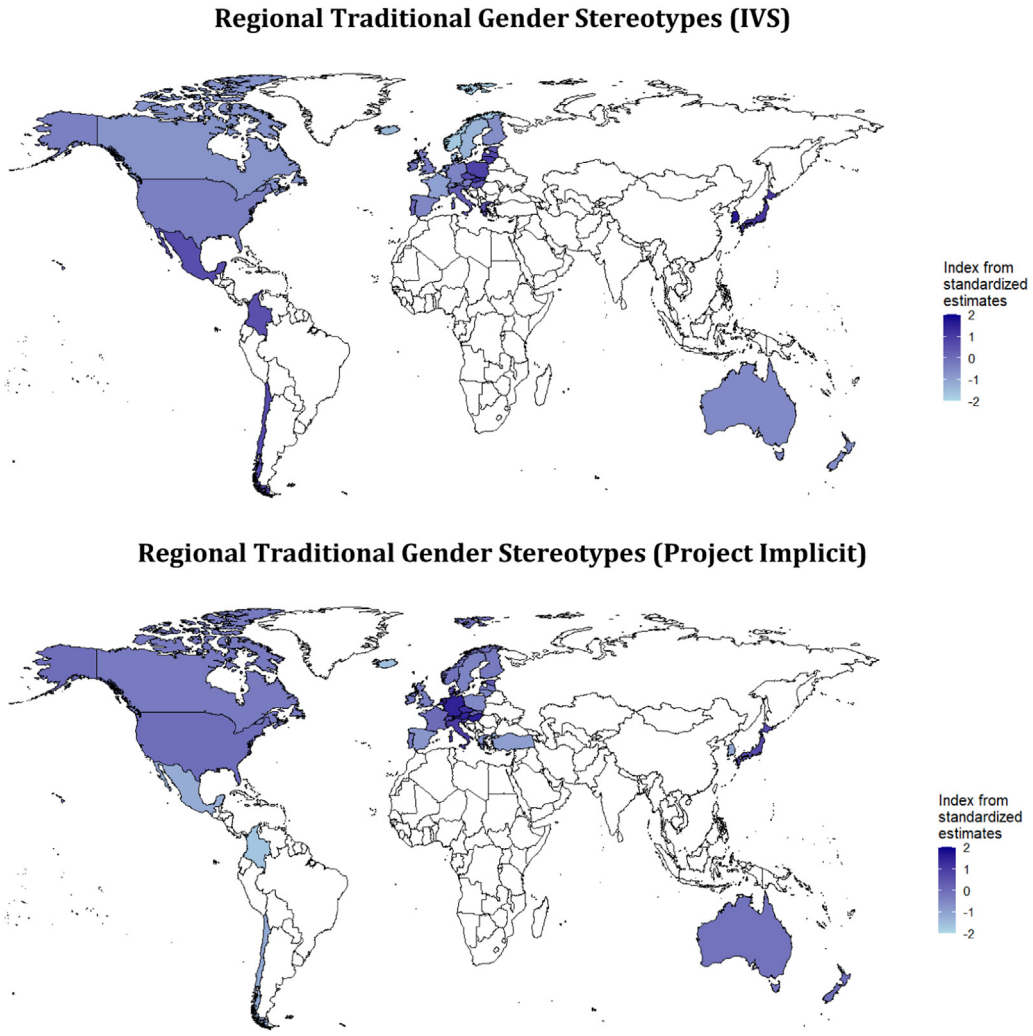

Fig. 1. Maps indicating relative variation in regional traditional gender stereotypes as measured by the IVS (upper panel) and Project Implicit (lower panel). Higher values indicate stronger stereotypic associations between men and careers, and between women and family.

The exploratory factor analysis corroborated this pattern of results and suggested a two-factor solution, with the Project Implicit stereotype measures representing one factor and the IVS stereotype measures representing the other factor. Consequently, we standardized all IVS and Project Implicit variables, then averaged each into separate indices of regional traditional gender stereotypes (*IVS Stereotype-index*, $\alpha = 0.95$; *Project Implicit Stereotype-index*, $\alpha = 0.72$). Fig. 1 reflects relative levels of traditional gender stereotypes per country for each dataset.

4.2.2.2. Representation of women in the workforce. The most consistent relationships emerged among three variables that reflect the representation of women in the workforce – overall share of women in the workforce, share of female seats on boards of the largest publicly listed companies, and share of female seats on national parliaments – which all correlated strongly and positively ($rs >= 0.56$, $ps < 0.001$). The remaining variables correlated inconsistently with one another, and are summarized in Table 3.

Table 3
Correlations between items on representation of women in the workforce.

Items		1	2	3	4	5
1	Share of women participating in the labour force					
2	Female share of seats on boards of the largest publicly listed companies	.56**				
3	Female share of seats in national parliaments	.57***	.63***			
4	Share of female managers	.42*	.48**	.26		
5	Share of employed women in part-time positions	.17	.28	.33	−0.23	
6	Share of employed women in involuntary part-time positions	−0.05	.30	.21	−0.10	.33

Note.
* = $p < .05$;.
** = $p < .01$;.
*** = $p < .001$.

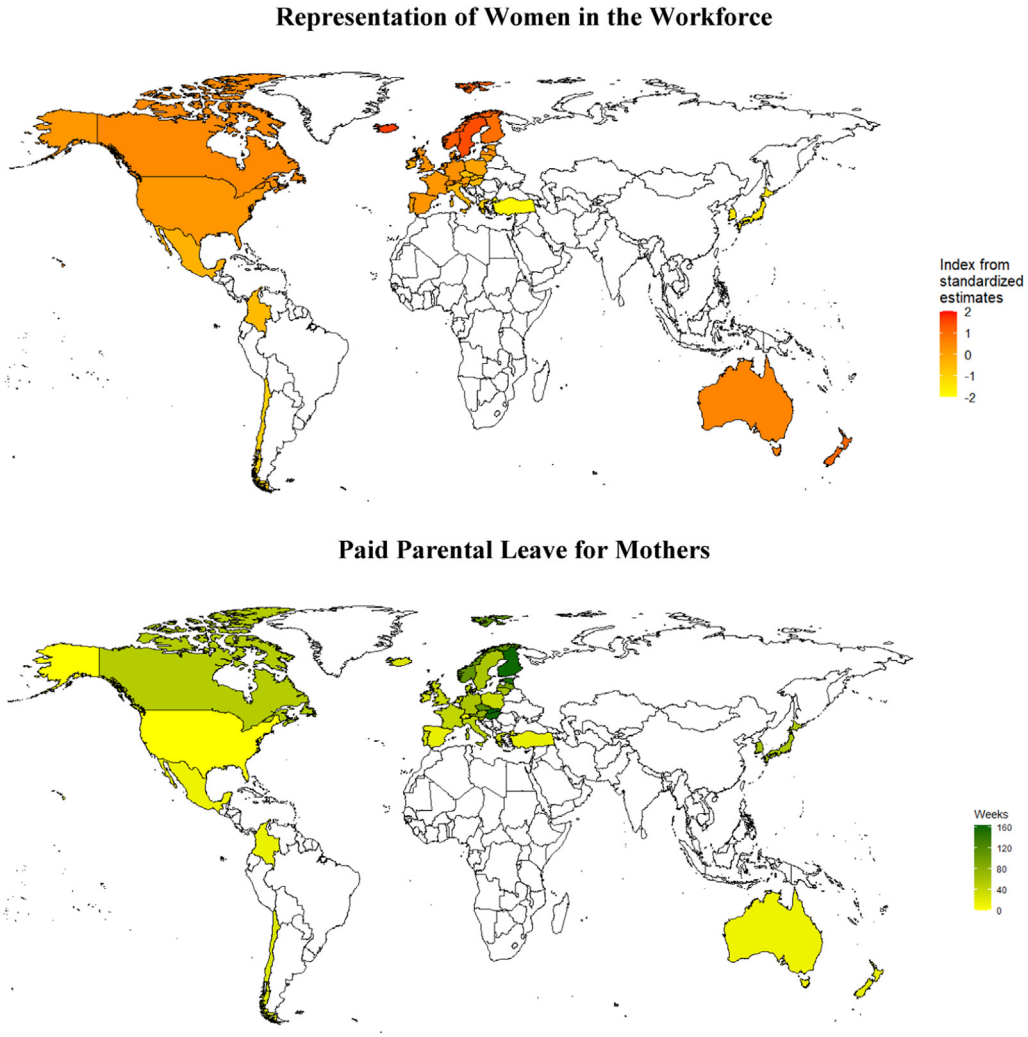

Fig. 2. Maps indicating relative variation in representation of women in the workforce (upper panel; higher values = more representation), and availability of paid parental leave for mothers in weeks (lower panel).

Exploratory factor analysis suggested a two-factor solution. The first factor includes all four variables on representation of women in the workforce (*Representation index*, $\alpha = 0.79$). We included share of female managers into the representation index, as suggested by the exploratory factor analysis. Additionally, we retained share of female managers as a separate indicator because it was less related to the other variables and, thus, it may capture something beyond mere representation. The top panel of Fig. 2 reflects relative variation in the representation index.

The second factor suggested by the exploratory factor analysis includes the two variables on women in (involuntary) part-time positions (Part-time index, $\alpha = 0.51$). Because the index of part-time employment suffers from low internal consistency, which threatens its construct validity, we refrain from reporting the analysis including this index in the main text.[5]

[5] We pre-registered to examine the relationship between nation-level traditional gender stereotypes and women's part-time employment. Results were inconsistent, some analyses were in the predicted direction, such that nations with stronger traditional gender stereotypes had less women in part-time employment in the workforce. Other operationalizations and analytical models sug-

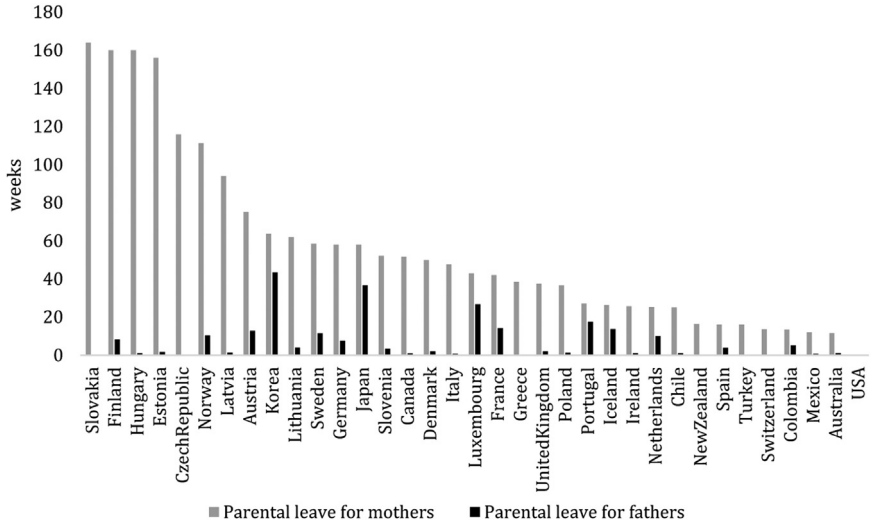

Fig. 3. Amount of available paid parental leave for mothers and paid parental leave for fathers by country in weeks.

Table 4
Correlations between items on parental leave.

Items		1	2	3	4	5	6	7
1	Paid parental leave for mothers							
2	Protected parental leave for mothers	.62***						
3	Paid parental leave for fathers	.00	−0.04					
4	Protected parental leave for fathers	.10	.25	.22				
5	Paid overall parental leave	.98***	.59***	.22	.14			
6	Protected overall parental leave	.52**	.88***	.08	.68***	.52**		
7	Paid parental leave inequality index	.98***	.61***	−0.21	.05	.91***	.49**	
8	Protected parental leave inequality index	.53**	.80***	−0.18	−0.38*	.48**	.42*	.56***

Note.
* = $p < .05$;.
** = $p < .01$;.
*** = $p < .001$.

4.2.2.3. Parental leave policies. The amount of parental leave for mothers is very strongly and positively related to the amount of overall parental leave (paid leave: $r = 0.98$, $p < .001$; protected leave: $r = 0.88$, $p < .001$). These very strong correlations are perhaps unsurprising, given that most countries offer very little (if any) parental leave for fathers, such that the overall amount of available leave is almost identical to the amount of available parental leave for mothers (Fig. 3).

Similarly, the parental leave inequality index is strongly and positively correlated with the amount of parental leave for mothers (paid leave: $r = 0.98$, $p < .001$; protected leave: $r = 0.80$, $p < .001$), and the overall amount of paid and protected parental leave (paid leave: $r = 0.91$, $p < .001$; protected leave: $r = 0.42$, $p = .012$). The amount of parental leave for fathers is negatively but inconsistently related to the parental leave inequality index (paid leave: $r = -0.21$, $p = .216$; protected leave: $r = -0.38$, $p = .026$), and the amount of paid parental leave for fathers is unrelated to the amount of protected parental leave for mothers ($r = -0.04$, $p = .806$). Otherwise, parental leave for fathers is positively but inconsistently related to the other variables on parental leave for mothers and overall parental leave ($rs = 0.00 - 0.68$, $ps = < 0.001 - 0.984$). We summarize all correlations in Table 4.

The exploratory factor analysis did not offer a clear solution. Because correlations among overall parental leave, parental leave for mothers, and parental leave for fathers likely reflect the uniformly little (or no) parental leave for fathers, we did not combine any of these variables into indices. Instead, we examined each separately in subsequent analyses. The bottom panel of Fig. 2 reflects the availability of paid parental leave for mothers per country.

4.3. Regression analyses

We ran a series of regression analyses to examine the relationship between regional traditional gender stereotypes and the representation of women in the workforce and, separately, the relationship between regional traditional gender stereotypes and parental leave policies. For both sets of analyses, we first ran regression models predicting our outcomes of interest from only regional traditional gender stereotypes. Next, we ran stepwise regression models that started with only covariates and added regional traditional gender stereotypes in a second step to determine how much variance gender stereotypes predict over and above covariates. Finally, we ran best subsets regressions that included all stereotype indices and covariates to select models that explain the most variance from the fewest predictors.[6] We report all analyses with unweighted standardized scores.[7]

gested no relationship or the opposite relationship. Due to the low internal consistency of the index of part-time employment, and at the suggestion of a reviewer, we refrain from further interpreting these findings in the main text, but report these analyses in full in the supplement.

[6] We preregistered to run additional mediation analyses examining the indirect effect of parental leave policies on regional traditional gender stereotypes through the representation of women in the workforce. Given that we did not find consistent relationships between parental leave policies and regional traditional gender stereotypes, such mediation analyses seemed not warranted.

[7] To examine the robustness of our findings we preregistered that we would repeat all analyses with unstandardized predictors and weighted means for the variables on traditional gender stereotypes. We further preregistered to run separate analyses by gender and on a subset of participants with children. However,

Table 5
Regression model predicting the representation of women in the workforce from regional traditional gender stereotypes.

Effect	Simple Model			Best Subsets Model			Full Model		
	β	SE	p	*β*	SE	p	*β*	SE	p
(Intercept)	0.02	0.07	.838	0.00	0.05	.945	0.00	0.05	.900
PI-Stereotypes	−0.09	0.08	.287	−0.18	0.07	.021	−0.17	0.10	.113
IVS-Stereotypes	−0.77	0.08	.000	−0.74	0.08	.000	−0.78	0.11	.000
GDP							−0.02	0.10	.828
HDI							0.08	0.18	.645
GII							0.04	0.19	.828
GINI Coefficient				−0.24	0.08	.006	−0.25	0.12	.041
Female Population				0.30	0.06	.000	0.34	0.09	.001
Median Age				−0.14	0.09	.128	−0.25	0.21	.232
Employment Rate				0.13	0.06	.044	0.12	0.08	.137
Total Fertility Rate							−0.09	0.12	.431
R^2	.731***			.886**			.889***		

Note. GDP = Gross Domestic Product, HDI = Human Development Index, GII = Gender Inequality Index. All predictors are standardized.
* = $p < .05$;.
** = $p < .01$;.
*** = $p < .001$.

5. Results

5.1. Regional traditional gender stereotypes and the representation of women in the workforce

5.1.1. Overall representation of women in the workforce

We began with a regression model to predict the overall share of women in the workforce, as operationalized by the representation index, from the Project Implicit and IVS stereotype-indices. In line with our hypothesis, women were overall less represented in the workforces of countries with higher levels of traditional gender stereotypes, as operationalized by the IVS stereotype-index, $\beta = -0.765$, $p < .001$, 95% CI [−0.932, −0.597]. The same pattern of results emerged for traditional gender stereotypes as operationalized by the Project Implicit stereotype-index, but were not reliably different from zero, $\beta = -0.089$, $p = .287$, 95% CI [−0.258, 0.079]. Stepwise regression indicated that regional traditional gender stereotypes accounted for 24.11% of variance over and above covariates. Best subsets regression suggested a six-predictor model ($R^2 = 0.886$) that included both the Project Implicit and IVS stereotype-indices as significant predictors. We report the results of all regression models in Table 5.

5.1.2. Women in manager positions

We began with a regression model to predict the share of women in manager positions from the Project Implicit and IVS stereotype-indices. In line with our hypothesis, fewer women occupied manager positions in countries with higher levels of traditional gender stereotypes, as operationalized by the IVS stereotype-index, $\beta = -3.60$, $p = .020$, 95% CI [−6.58, −0.61]. The same pattern of results emerged for traditional gender stereotypes as operationalized by the Project Implicit stereotype index, but were not reliably different from zero, $\beta = -1.28$, $p = .411$, 95% CI [−4.42, 1.86]. Stepwise regression indicated that regional traditional gender stereotypes accounted for 19.04% of variance over and above covariates. Best subsets regression suggested a 9-predictor model ($R^2 = 0.738$) in which the IVS stereotype-index, but not the Project Implicit stereotype-index, significantly predicted the share of women in manager positions. We report the results of all regression models in Table 6.

due to the deadline of submission for the special issue we did not have enough time to run all preregistered analyses and focused on the most important primary analyses and the most important robustness checks.

5.2. Regional traditional gender stereotypes and parental leave policies

We ran separate models with each of the indicators of parental leave policies as dependent variables. We summarize all results on availability of paid parental leave in Table 7, and all results on availability of protected parental leave in Table 8.

5.2.1. Parental leave for mothers

We ran two separate models, one with paid and one with protected parental leave for mothers as dependent variable. We started with a regression model predicting paid parental leave for mothers from traditional gender stereotypes as operationalized by the Project Implicit and the IVS stereotype-indices. More paid parental leave for mothers was available in countries with higher traditional gender stereotypes, as operationalized by the Project Implicit stereotype-index, $\beta = 20.23$, $p = .025$, 95% CI [2.70, 37.76]. Traditional gender stereotypes as operationalized by the IVS stereotype-index descriptively showed an effect in the same direction but was not reliably different from zero, $\beta = 8.36$, $p = .336$, 95% CI [−9.08, 25.80]. Stepwise regression indicated that traditional gender stereotypes accounted for 0.98% of the variance over and above the covariates. Best subsets regression suggested a 5-predictor model that did not include either of the stereotype-indices.

Protected parental leave for mothers was not reliably related to either the Project Implicit stereotype-index, $\beta = 16.51$, $p = .146$, 95% CI [−6.08, 39.09], or to the IVS stereotype-index, $\beta = 8.12$, $p = .467$, 95% CI [−14.34, 30.58]. Stepwise regression indicated that traditional gender stereotypes explained 2.8% of the variance over and above the covariates. Best subsets regression suggested a 3-predictor model that did not include either of the stereotype-indices.

5.2.2. Parental leave for fathers

We ran two separate models, one with paid and one with protected parental leave for fathers as dependent variable. Paid parental leave for fathers was not related to traditional gender stereotypes as operationalized either by the Project Implicit stereotype-index, $\beta = 0.40$, $p = .850$, 95% CI [−3.83, 4.62], or by the IVS stereotype-index, $\beta = 1.32$, $p = .527$, 95% CI [−2.89, 5.52]. Stepwise regression indicated that traditional gender stereotypes explained 16.85% of the variance over and above the covariates. Best subsets regression suggested a 9-predictor model with both stereotype-indices included. In this 9-predictor model, more paid parental leave for fathers was available in countries with higher traditional gender stereotypes as operationalized by the IVS stereotype-index, $\beta = 6.80$, $p = .007$, 95% CI [2.08, 11.51]. The effect of traditional

Table 6
Regression model predicting the representation of women in manager positions from regional traditional gender stereotypes.

Effect	Simple Model			Best Subsets Model			Full Model		
	β	SE	p	*β*	SE	p	*β*	SE	p
(Intercept)	32.11	1.30	.000	32.28	0.85	.000	32.29	0.87	.000
PI-Stereotypes	−1.28	1.54	.411	−2.10	1.34	.130	−1.66	1.62	.318
IVS-Stereotypes	−3.60	1.46	.020	−8.71	1.86	.000	−8.62	1.90	.000
GDP							−0.79	1.60	.625
HDI				5.25	2.64	.038	5.90	2.99	.061
GII				6.28	2.86	.022	5.71	3.12	.081
GINI Coefficient				−4.20	1.71	.000	−3.92	1.84	.044
Female Population				8.13	1.48	.024	8.16	1.51	.000
Median Age				−7.19	2.97	.224	−7.89	3.34	.027
Employment Rate				−1.58	1.27	.052	−1.64	1.29	.217
Total Fertility Rate				−3.78	1.84	.038	−3.85	1.88	.052
R^2		.175			.738***			.741***	

Note. GDP = Gross Domestic Product, HDI = Human Development Index, GII = Gender Inequality Index. All predictors are standardized.
*= $p < .05$;.
**= $p < .01$;.
*** = $p < .001$.

gender stereotypes as operationalized by the Project Implicit stereotype-index was descriptively in the opposite direction but was not reliably different from zero, $\beta = -3.04$, $p = .236$, 95% CI [−8.21, 2.12].

Protected parental leave for fathers was not reliably related to traditional gender stereotypes as operationalized either by the Project Implicit stereotype-index, $\beta = 2.36$, $p = .747$, 95% CI [−12.38, 17.09], or by the IVS stereotype-index, $\beta = -9.35$, $p = .203$, 95% CI [−24.01, 5.30]. Stepwise regression indicated that traditional gender stereotypes accounted for 1.33% of the variance over and above the covariates. Best subsets regression suggested a 4-predictor model that did not include either of the traditional gender stereotype indices.[8]

5.2.3. Overall parental leave

We ran two separate models, one with paid and one with protected overall parental leave as dependent variable. We started with a regression model predicting paid overall parental leave from traditional gender stereotypes as operationalized by the Project Implicit and the IVS stereotype-indices. More paid overall parental leave was available in countries with higher traditional gender stereotypes, as operationalized by the Project Implicit stereotype-index, $\beta = 20.61$, $p = .026$, 95% CI [2.67, 38.55]. Descriptively, the effect for the IVS stereotype-index was in the same direction but was not reliably different from zero, $\beta = 9.69$, $p = .277$, 95% CI [−8.15, 27.53]. Stepwise regression revealed that traditional gender stereotypes accounted for 0.42% of the variance over and above the covariates. Best subsets regression suggested a 5-predictor model that did not include either of the stereotype-indices.

Protected overall parental leave was not reliably related to traditional gender stereotypes as operationalized either by the Project Implicit stereotype-index, $\beta = 18.85$, $p = .213$, 95% CI [−11.37, 49.06], or the IVS stereotype-index, $\beta = -1.23$, $p = .934$, 95% CI [−31.28, 28.83]. Stepwise regression showed that traditional gender stereotypes accounted for 2.63% of the variance over and above the covariates. Best subsets regression suggested a 4-predictor model that included the Project Implicit stereotype-index included, which was not reliably different from zero, $\beta = -18.12$, $p = .216$, 95% CI [−47.43, 11.20].

[8] We preregistered that on an exploratory basis we would run zero-inflated negative binomial regression models predicting parental leave for fathers from regional traditional gender stereotypes to account for floor effect in the data. In the final aggregated dataset, though countries overall offer very little parental leave for fathers, the mean amount across years often adds up to something a little above zero. Running a zero-inflated regression model was thus not warranted and we did not run this additional analysis.

5.2.4. Inequality in parental leave

We ran two models, one with the paid and one with the protected parental leave inequality indices as dependent variable. Inequality in availability of paid parental leave was higher in countries with higher traditional gender stereotypes as operationalized by the Project Implicit stereotype-index, $\beta = 19.82$, $p = .033$, 95% CI [1.69, 37.94]. The IVS stereotype-index descriptively showed an effect in the same direction but was not reliably different from zero, $\beta = 7.05$, $p = .432$, 95% CI [−10.98, 25.08]. Stepwise regression revealed that traditional gender stereotypes accounted for 3.03% of the variance over and above the covariates. Best subsets regression suggested a 5-predictor model which included the IVS stereotype-index but not the Project Implicit stereotype-index. In this 5-predictor model, inequality in paid parental leave was lower in countries with higher traditional gender stereotypes as operationalized by the IVS stereotype-index, $\beta = -18.92$, $p = .046$, 95% CI [−37.52, −0.326].

Inequality in protected parental leave was not reliably related to either the Project Implicit stereotypes-index, $\beta = 14.13$, $p = .225$, 95% CI [−9.12, 37.39], or the IVS stereotype-index, $\beta = 17.48$, $p = .133$, 95% CI [−5.65, 40.62]. Stepwise regression showed that traditional gender stereotypes explained 1.96% over and above the covariates. Best subsets regression suggested a 4-predictor model that did not include either of the stereotype-indices.

6. Discussion

Gender inequality in the workplace is an important and pressing problem facing the world today. Building upon previous investigations into structural factors that relate to gender inequality, in the present research we adopt a psychological perspective to examine the relationship between country-level traditional gender stereotypes and gender inequality in the workplace. Across 35 OECD countries, we found that regional traditional gender stereotypes were negatively related to the representation of women in the workforce and, specifically, to the share of women working in manager positions. This pattern of results was robust across model specifications, such that women were less represented in the workforce and in manager positions in countries where men are more strongly associated with careers and women are more strongly associated with families. To increase the generalizability of our findings, we operationalized traditional gender stereotypes based on two data sources: Project Implicit and the Integrated Values Survey. Together, both indices of regional traditional gender stereotypes accounted for large and significant amounts of variance in representation of women in

Table 7
Results of regression models predicting the availability of paid parental leave from regional traditional gender stereotypes.

DV	Simple Model			Best Subsets Model			Full Model		
	β	SE	p	*β*	SE	P	*β*	SE	p
Paid Parental Leave									
for Mothers									
PI-Stereotypes	20.23	8.61	.025	–	–	–	−2.53	10.07	.804
IVS-Stereotypes	8.36	8.56	.336	–	–	–	−9.34	11.08	.408
GDP							3.97	9.83	.690
HDI							−2.61	17.13	.880
GII				42.07	9.04	.000	52.91	18.89	.010
GINI Coefficient				−54.30	8.58	.000	−58.00	11.22	.000
Female Population				16.02	5.28	.005	16.24	8.88	.080
Median Age							3.97	20.13	.845
Employment Rate				9.49	5.65	.104	7.99	7.41	.292
Total Fertility Rate				−10.73	6.45	.108	−14.43	11.52	.223
R^2		.157			.694***			.706***	
for Fathers									
PI-Stereotypes	0.40	2.08	.850	−3.04	2.50	.236	−3.33	2.54	.203
IVS-Stereotypes	1.32	2.06	.527	6.80	2.29	.007	8.17	2.79	.008
GDP				5.55	2.45	.033	5.75	2.48	.029
HDI				−10.95	4.07	.013	−12.15	4.32	.010
GII				−7.67	4.66	.113	−8.39	4.76	.091
GINI Coefficient				3.81	2.79	.185	4.10	2.83	.161
Female Population				−5.47	2.06	.014	−6.20	2.24	.011
Median Age				9.66	3.90	.021	12.45	5.07	.022
Employment Rate				6.40	1.82	.002	6.73	1.87	.002
Total Fertility Rate							2.51	2.90	.396
R^2		.013			.616**			.628**	
Overall									
PI-Stereotypes	20.61	8.81	.026	–	–	–	−5.85	10.78	.593
IVS-Stereotypes	9.69	8.76	.277	–	–	–	−1.17	11.87	.922
GDP							9.70	10.53	.366
HDI							−14.71	18.35	.431
GII				39.12	9.71	.000	44.53	20.23	.038
GINI Coefficient				−50.65	9.22	.000	−53.87	12.02	.000
Female Population				13.57	5.67	.024	10.03	9.51	.302
Median Age							16.39	21.56	.455
Employment Rate				12.54	6.07	.048	14.71	7.94	.077
Total Fertility Rate				−16.02	6.94	.029	−11.94	12.34	.343
R^2		.160			.661***			.677***	
Inequality Index									
PI-Stereotypes	19.82	8.90	.033	–	–	–	0.81	9.98	.936
IVS-Stereotypes	7.05	8.85	.432	−18.92	9.08	.046	−17.52	10.98	.124
GDP							−1.81	9.74	.855
HDI							9.58	16.98	.578
GII				59.63	11.81	.000	61.32	18.72	.003
GINI Coefficient				−62.40	8.60	.000	−62.07	11.12	.000
Female Population				18.91	5.20	.001	22.43	8.80	.018
Median Age							−8.51	19.95	.674
Employment Rate							1.26	7.35	.865
Total Fertility Rate				−13.08	7.71	.101	−16.97	11.42	.151
R^2		.140			.719***			.727***	

Note. GDP = Gross Domestic Product, HDI = Human Development Index, GII = Gender Inequality Index. All predictors are standardized.
* = $p < .05$;.
** = $p < .01$;.
*** = $p < .001$.

the workforce, over and above the theoretically relevant covariates. Our findings dovetail with previous work by Fortin (2005) and Uunk (2015), and show that even 10–20 years later, regional gender stereotypes are still an important factor to explain the gender employment gap. Our research replicates and extends previous work using additional countries, additional measures of regional traditional gender stereotypes, and different data on the representation of women in the workforce (i.e., the OECD employment dataset), which demonstrates the robustness of these findings. Moreover, our findings corroborate social role theory (Eagly and Wood, 2016), and extend it from the individual level to the country level, showing that culturally-shared gender stereotypes are closely linked to the actual representation of women in counter-stereotypic roles such as the workplace and manager positions.

To our surprise, regional traditional gender stereotypes were largely unrelated to parental leave policies. The fact that gender stereotypes did not generally relate to parental leave for fathers is perhaps unsurprising: given that most countries offer no parental leave at all to fathers, our null results may reflect floor effects. Fortunately, a recent European Union directive on work-life balance requires member countries to offer at least 10 working days of leave to fathers for the birth of their child,

Table 8
Results of regression models predicting the availability of protected parental leave from regional traditional gender stereotypes.

DV	Simple Model			Best Subsets Model			Full Model		
	b	SE	p	b	SE	p	b	SE	p
Protected Parental Leave									
for Mothers									
PI-Stereotypes	16.51	11.09	.146	–	–	–	−4.03	14.61	.785
IVS-Stereotypes	8.12	11.02	.467	–	–	–	−19.84	16.08	.230
GDP				−14.74	8.52	.094	−8.74	14.26	.546
HDI							−3.33	24.86	.895
GII							5.10	27.41	.854
GINI Coefficient				−31.99	7.88	.000	−42.21	16.29	.016
Female Population				26.27	7.81	.002	33.72	12.88	.015
Median Age							−23.55	29.20	.428
Employment Rate							−11.36	10.76	.302
Total Fertility Rate							−21.13	16.72	.219
R^2		.073			.546***			.595**	
for Fathers									
PI-Stereotypes	2.36	7.23	.747	–	–	–	−7.89	13.03	.551
IVS-Stereotypes	−9.35	7.20	.203	–	–	–	−2.62	14.35	.856
GDP							3.41	12.72	.791
HDI				−19.59	13.51	.157	−16.19	22.18	.473
GII				−24.51	15.56	.126	−11.71	24.45	.636
GINI Coefficient							−8.86	14.53	.548
Female Population							−0.73	11.49	.950
Median Age				14.87	12.90	.258	20.36	26.06	.443
Employment Rate							−4.99	9.60	.608
Total Fertility Rate				18.77	10.09	.073	20.18	14.91	.189
R^2		.057			.194			.227	
Overall									
PI-Stereotypes	18.85	14.83	.213	−18.12	14.33	.216	−11.92	21.36	.582
IVS-Stereotypes	−1.23	14.75	.934	–	–	–	−22.47	23.52	.349
GDP							−5.35	20.86	.800
HDI							−19.47	36.36	.597
GII							−6.60	40.08	.871
GINI Coefficient				−49.04	13.01	.001	−51.04	23.81	.043
Female Population				34.23	10.76	.003	32.99	18.83	.093
Median Age							−3.22	42.71	.941
Employment Rate				−13.91	11.21	.225	−16.35	15.73	.309
Total Fertility Rate							−0.97	24.44	.969
R^2		.050			.462***			.500*	
Inequality Index									
PI-Stereotypes	14.13	11.42	.225	–	–	–	3.86	17.61	.828
IVS-Stereotypes	17.48	11.36	.133	–	–	–	−17.22	19.39	.384
GDP							−12.17	17.19	.486
HDI							12.90	29.97	.671
GII							16.83	33.04	.615
GINI Coefficient				−27.24	12.61	.039	−33.32	19.63	.103
Female Population				33.99	9.90	.002	34.44	15.53	.037
Median Age				−34.41	16.85	.050	−43.93	35.21	.225
Employment Rate							−6.38	12.97	.628
Total Fertility Rate				−30.53	12.82	.024	−41.34	20.15	.052
R^2		.097			.424**			.465	

Note. GDP = Gross Domestic Product, HDI = Human Development Index, GII = Gender Inequality Index. All predictors are standardized.
* $= p < .05$;.
** $= p < .01$;.
*** $= p < .001$.

along with the right to at least two non-transferable months of parental leave by August 2022 (OECD, 2021). Thus, future research may be better positioned to examine the relationship between gender stereotypes and parental leave for fathers once this directive has been implemented. However, parental leave for mothers varies considerably between countries around the world, so our apparent null results would not seem to reflect floor effects in the case of mothers. That said, we articulated competing hypotheses for how gender stereotypes might relate to parental leave. For example, we proposed that countries with stronger traditional gender stereotypes might provide less parental leave to mothers based on the belief that women should stay at home to care for families; but at the same time, we recognize that countries with stronger traditional gender stereotypes might instead provide more parental leave to mothers to encourage them to be caretakers. Thus, the possibility remains that we have overlooked a third variable that determines when gender stereotypes contribute to more versus less parental leave, and future research should continue to investigate this.

Aligning with our psychological approach to the present research, we expected the gender stereotype measures in the Project Implicit dataset and in the IVS dataset to all reflect a common construct – and, thus,

to correlate positively with one another. However, to our surprise, the gender stereotype measures in the two datasets correlated negatively with one another. A variety of reasons – some theoretical and others methodological – may explain this divergence. One clear difference between the two datasets is that the measures are articulated at different levels of abstraction. The IVS measures capture relatively concrete beliefs that may reflect hostile sexism (e.g. "Men should have more right to a job than women"; "Pre-school child suffers with working mother"). In contrast, both the Implicit Association Test and the self-report items from the Project Implicit dataset assess gender stereotypes in more abstract terms (e.g. "How strongly do you associate family/career with males and females?"). Additionally, the measures in the two datasets are structurally dissimilar. The Project Implicit measures are both operationalized in terms of difference scores that capture the strength of the association between men and careers versus families, and contrast it against the strength of association between women and careers versus families. In contrast, the IVS measures are largely articulated in terms of men's versus women's fit in careers, with only one item articulated in terms of families (i.e., "Pre-school child suffers with working mother"). Moreover, the two datasets differ in their collection methods. Specifically, the IVS reflects representative samples and all surveys are translated into the predominant language spoken in a given country. In contrast, the Project Implicit data reflects an ad-hoc, volunteer sample who completed all measures in English. As such, the participants in the Project Implicit data could substantially differ from participants in the IVS data. For instance, non-native English-speaking participants who visit the Project Implicit website to voluntarily take a test on gender stereotypes may potentially be more educated than the average in their country of residence. This difference between the average citizens of a country and Project Implicit visitors could additionally be distorted in some countries compared to other countries. Table 16 in the supplement summarizes key demographic similarities and differences by country in the two datasets. For countries like the USA, Australia, and France, Project Implicit had disproportionately more participants than did the IVS dataset, whereas for countries like Chile, Estonia, and Luxembourg, Project Implicit had disproportionately fewer participants. Further, Project Implicit participants were on average 15 years younger (M = 29.65, SD = 10.13) than IVS participants (M = 45.50, SD = 17.16).

Despite all these differences, across all analyses, the pattern of effects (if not the p-values) was largely consistent for both datasets, and in no case did the two datasets produce reliable but opposite effects. Given that IVS effects were more often reliably different from zero than were Project Implicit effects, our findings may suggest that concretely-measured gender stereotypes, representative samples, and/or measures articulated in respondents' native language are better suited to predict gender employment gaps – possibilities that merit further investigation.

6.1. Limitations

The present research is correlational – with all variables measured – and correlational research is inherently limited by the variables included in analyses. Consequently, we cannot rule out that other, unobserved variables could explain the observed relationship between regional traditional gender stereotypes and women's representation in the workforce. That said, in the present research we aimed to avoid another, related, issue – overfitting – by using best subsets regression to identify the most parsimonious models. Because best subsets regression consistently included one or both stereotype measures in the models predicting women's representation in the workforce, we can be confident that our findings are relatively robust against seemingly-arbitrary choices about covariates and model specifications.

The present research aimed to expand geographic representation in the psychological literature on regional intergroup bias, which thus far has largely relied on American samples (Calanchini et al., 2022). Using a variety of data sources, we achieved this goal and examined the relationship between traditional gender stereotypes and the gender employment gap in 35 countries across five continents. That said, our analyses were nevertheless limited to countries that are affiliated with the OECD – and have the resources to engage in high-quality data collection. Thus, the present research expands beyond the West to include the Global South (i.e., Chile, Colombia) and East (i.e., Korea, Japan), but is primarily limited to countries that are relatively educated, industrialized, rich, and democratic (Henrich et al., 2010). More research is desperately needed to examine, identify, and mitigate factors related to the gender wage gap in more diverse sets of countries.

6.2. Implications

The present research has important implications for research on regional intergroup bias, for theorizing on the persistence of gender inequalities, and for practitioners interested in reducing gender inequalities. The fact that regionally aggregated measures of stereotypes across 35 countries were related to societal level outcomes such as the representation of women in the workforce is yet another piece of evidence highlighting the importance of studying intergroup biases beyond the individual. The present findings further suggest that the concept of regional intergroup bias is applicable to broader cultural units such as countries which, in turn, helps to generalize this literature to a broader context beyond the US where most studies on the topic have been conducted thus far (Calanchini et al., 2022).

The findings are also in line with social role theory (Eagly and Wood, 2016), illustrating that a social norm of traditional gender stereotypes is directly linked to more gender stereotypic behavioral outcomes in a society. Of course, this relationship is likely bi-directional, which underscores the vicious cycle of gender stereotypes and gender inequalities in the workforce: Traditional gender stereotypes keep women out of the workforce, and lack of women in the workforce reinforces traditional gender stereotypes. Consequently, the present research sends a clear message to practitioners and policy makers to address cultural as well as structural barriers to women's participation in the workforce.

7. Conclusion

The present work investigated the relationship between traditional gender stereotypes and the gender employment gap. Women were less represented in the workforces of countries that more strongly associated careers with men and families with women. However, parental leave policies were inconsistently related to traditional gender stereotypes. Our findings highlight the relationship between traditional gender stereotypes and gender inequalities throughout the world. With the present work, we contribute to the ongoing debate over how to address gender inequalities by providing a psychological perspective that focuses on contexts rather than individuals. We hope that decision-makers in positions of power will take this perspective into account as they continue to work towards changing long-standing gender roles and closing gender employment gaps.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Ethics and Informed Consent

This research is based on secondary data analysis and, thus, we did not recruit any participants directly. The original data sources complied with all ethical and informed consent guidelines.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.cresp.2023.100138.

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