

Gender balance in the workforce and abortion attitudes: A cross-national time-series analysis

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Abstract

This article explores the relationship between gender balance in the workforce and attitudes towards abortion worldwide. Studies on macro-level conditions related to abortion attitudes overlook the role of gender balance in the workforce—specifically the degree of female representation in a country's workforce. There are strong reasons why this factor could shape abortion attitudes. We argue that such a gender balance creates necessary conditions to break with traditional, anti-abortion ideology and facilitates dissemination and public acceptance of pro-choice views. We test this argument with two different datasets - the Integrated Values Survey and three waves of the International Social Survey Programme—along with two outcomes: general tolerance towards abortion and tolerance towards abortion for pregnant women of low income. Using three-level random intercept models and multiple controls for individual and country-level conditions, the results support our hypothesis: In countries with higher gender balance in the workforce, individuals display higher tolerance towards abortion.

KEYWORDS

abortion, attitudes, cross-national analysis, gender, survey

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Since the early 1970s, few issues worldwide have drawn more attention or proven as controversial in domestic public arenas as the legal and moral status of abortion. The right to and use of voluntary pregnancy termination has ignited heated debates in politics around the world. Through numerous, country case studies of abortion policy attitudes (for a review, Adamczyk et al., 2020), social scientists have illuminated the divisions articulated by these debates. Some studies have also explored the reasons for the substantial, cross-national differences in public tolerance towards abortion. Such work has shown that several country conditions—for example, a country's average affluence or development (Gaskins et al., 2013; Inglehart & Welzel, 2005); its average level of religiosity (Adamczyk, 2022); its abortion policy regime (Loll & Hall, 2019); and its political regime (Zhang, 2020) - shape these attitudes.

That is a very restricted range of macro-level determinants of abortion attitudes, however. Consequently, our understanding of the contextual forces shaping beliefs on this matter may also, unwittingly, be restricted. To redress this gap, we revisit the scope conditions that foster pro-choice attitudes and specifically examine an important question: What is the relationship between macro-structural conditions and pro-choice attitudes? A more refined understanding of attitudes towards abortion is crucial because these attitudes can affect relevant, individual and collective, dimensions alike. Abortion opinions may influence individual sexuality and reproduction decisions (Adamczyk, 2008) thereby modifying public attitudes towards abortion that can affect fertility trends. Such mood shifts may also have political reverberations that are likely to influence voting decisions and shape abortion policies (Adamczyk et al., 2020).

This article answers the aforementioned question by focusing on a relevant macro-structural factor overlooked by the comparative literature: gender balance in the workforce, which refers to the gender gap in the presence in the labour force, which includes paid workers and job seekers. Our theoretical model draws on classic structuralist theories of gender relations (Chafetz, 1990; Collins et al., 1993; Risman, 2018) and economic studies on the consequences of increasing labour market opportunities for women on areas other than the labour market (Heath & Mobarak, 2015; Jensen, 2012; Majlesi, 2016). Expanding on those approaches, we argue that the existence of a more intense gender balance in the workforce activates a series of interlocked, political and socio-cultural processes that plausibly create the necessary conditions for a break with traditional, anti-abortion ideology and the gradual diffusion of pro-choice views.

By stressing the influence of gender equality on economic participation, our study differs from previous work. Several studies argue that *general* gender equality—combining economic, political and social equality—shapes attitudes towards gender-related matters (Henry et al., 2022; Inglehart & Norris, 2003). We advance the literature by arguing, instead, that *economic* gender equality linked to balance in the workforce affects abortion attitudes in ways that other forms of gender equality (or gender equality in general) do not.

We test our expectation of a positive relationship between gender balance in the workforce and attitudes favourable to abortion by estimating random intercepts multilevel models on two datasets—the Integrated Values Survey and the International Social Survey Programme (ISSP)—that include 292 and 98 country-years from 1989 to 2019, respectively. The analysis involves two indicators of abortion attitudes: one regarding the general justifiability of abortion; the other on the acceptability of abortion for pregnant women under conditions of low-income. The results support our expectation. Controlling for seven, country-level factors and multiple, individual-level factors, workforce gender balance is positively related to abortion attitudes. This indicates that, other things equal, individuals living in countries with large, female, workforce representation display more pro-choice attitudes than individuals living in countries with small, female, workforce representation.

1 | PREVIOUS RESEARCH

The literature on abortion attitudes is extensive and diverse in methodological and theoretical scope. Most of the literature focuses mainly on single countries (principally the United States) but comparative studies have also been undertaken. As shown next, existing works use individual and macro-level factors to explain abortion opinions.

Socio-economic explanations of abortion attitudes usually emphasize individual-level features. Education and labour force participation have received particular attention. Increased levels of education reduce people's exposure to traditional gender ideologies, prescribing that women focus on motherhood and family. Labour force participation also puts women in contact with the real-life views and experiences of other, non-traditional women and increases the cost for women of unwanted pregnancies. These two factors should therefore covary with pro-choice positions, which has been generally supported by previous research (Adamczyk et al., 2020; Banaszak, 1998; Bolzendahl & Myers, 2004; Zhang, 2020). Other socio-economic characteristics also influence abortion views. On average, women, young people and individuals without children display higher tolerance towards abortion (Bolzendahl & Myers, 2004; Loll & Hall, 2019).

Some work regarding socio-economic dimensions does consider macro-level processes. Inglehart and Norris (2003) and Welzel (2013) argue that socio-economic development, together with religious traditions, shape the predominant culture of a given country and, in turn, influence ideas about the 'proper' role of women and men in family and society. Through the transition from agrarian to industrialized societies, increasing numbers of people escaped material insecurity and their survival was no longer under threat. People's priorities then changed, and individuals increasingly valued autonomy, self-expression, and other post-material goals including women's right to control their own lives. In line with this theory, tolerance towards abortion is indeed higher on average in affluent societies (Gaskins et al., 2013; Inglehart & Norris, 2003). As regards other socio-economic dimensions at the macro level, Blofield (2013) argues that income inequality is an obstacle to abortion decriminalization. Because upper class women have the exit option of abortion tourism, in societies with high economic inequality the upper classes have no incentives to politicize abortion or influence the general public in the direction of higher support for abortion. In highly inequitable societies, therefore, support for abortion should be lower than in more equitable societies, as supported by Zhang (2020).

Supra-individual political factors have also received scholarly attention. Loll and Hall (2019) argue that the legal status of abortion influences public attitudes towards its practice. Restrictive abortion regimes induce perceptions of abortion as a secret, stigmatized and discredited practice, whereas liberal regimes induce people to see abortion as a respectable birth-control option. Zhang (2020), moreover, hypothesizes that the absence of political freedom influences abortion opinions since the liberalizing effect of education on views about the voluntary termination of pregnancy is weaker in non-free societies than in free societies. His analysis of 88 countries included in the World Values Survey (WVS) supports this expectation (also, Scheepers et al., 2002).

To our knowledge, no study has assessed the causal role of the gender composition of the political elite on abortion attitudes. We can, however, infer a prediction from the parallel literature demonstrating that as the proportion of women in state legislatures increases, so does the prioritization of reproductive rights agendas (Paxton et al., 2020). For the US, state legislatures with higher proportion of women representatives are more likely to pass more liberal abortion regulations and/or block pro-life legislation (Berkman & O'Connor, 1993; Norrander & Wilcox, 1999). Subsequently, it could be argued that across countries, as women's presence in the political elite augments, people grow more accustomed to seeing women conducting themselves with autonomy in the public sphere and begin recognizing women's right to self-determination. On the other hand, female political leaders can coordinate their efforts to raise public awareness towards reproductive issues.

Cultural dimensions have also received substantial attention in the scholarship. In this regard, the previous literature has focused overwhelmingly on religious factors. Since the orthodox doctrines of several major religions or denominations condemn abortion (Jelen, 2014), religious men and women are less supportive of the procedure than non-religious people (Adamczyk, 2022; Adamczyk et al., 2020; Adamczyk & Valdimarsdóttir, 2018). Regular attendance at religious services appears particularly influential in this regard because it maximizes exposure to official religious doctrines (Bolzendahl & Myers, 2004). Apart from the intensity of religious involvement, religious affiliation shapes abortion attitudes as well. Catholics, fundamentalist Protestants, and Muslims are associated with higher disapproval of abortion than are followers of other denominations and non-religious individuals (Jelen, 2014; Jelen et al., 1993).

Beyond individual religiosity, abortion attitudes scholarship also emphasizes collective religiosity. That work builds on the principle that in highly religious societies there is added, collective pressure on men and women to comply with religiously-led, predominantly pro-life views (Adamczyk, 2022; Scheepers et al., 2002). The imprint of Catholicism could be especially influential. Since the contemporary Catholic Church has prioritized the battle against abortion, individuals living in areas with a higher percentage of Catholics could be more exposed to theologically-based, pro-life messages. Adamczyk and Valdimarsdóttir (2018) show that US counties with, on average, higher religiosity and higher percentages of Catholics display greater opposition towards abortion (also Cook et al., 1993).

Despite valuable contributions made by previous work, however, the extant literature has three main limitations. First, only Adamczyk (2022) and Zhang (2020), to our knowledge, has assessed the role of competing country-level dimensions in the formation of abortion attitudes and even those two studies consider a limited range of factors. Second, all previous work relies on analyses of a single database, thereby making the results sensitive to the wording of questions and sample characteristics. Third, another factor with strong potential to influence attitudes—gender balance in the workforce—has thus far been overlooked in previous research. Given these limitations of previous works, we articulate a theoretical model for the relevance of workforce gender balance in the following section.

2 | THEORETICAL BACKGROUND

In this section, we formulate a novel, macro-structural approach to abortion attitudes focused on workforce gender configurations. Gender social theorists concur that the degree and type of gender inequalities vary at different levels of social reality and that the macro-level constitutes a decisive system of gender stratification that, through recursive processes, sets constraints and opportunities for emancipative social change (Chafetz, 1990; Collins et al., 1993; Risman, 2018).

Through paid employment, women obtain economic resources and improve their bargaining position within households (Heath & Jayachandran, 2016; Majlesi, 2016). Along this line, economists have long argued that increasing labour opportunities for women have consequences outside the labour market, producing (but not limited to): higher survival rates for girls (Qian, 2008); marriage and childbirth postponement (Heath & Mobarak, 2015; Jensen, 2012); higher girls' education attainment and training (Heath & Mobarak, 2015; Jensen, 2012) or higher educational attainment of all children (Qian, 2008); and bettered children's health (especially girls' health) (Jensen, 2012; Majlesi, 2016). Theoretical and empirical research, however, have paid less attention to the consequences of workforce gender composition as regards the formation of *abortion attitudes*. In this regard, workforce gender composition varies substantially across contemporary nation-states. In two extreme cases (considered below)—Yemen in 2014 and Rwanda in 2007—the ratio of female to male, labour force participation rates (multiplied by 100) were 9 and 102, respectively (World Bank, 2020). There are three ways in which this cross-national variation could have relevant consequences for abortion attitudes: through *discursive*, *exposure* and *political* processes.

Discursive processes stem from the interests of economically active women in safe birth control. Since unintended pregnancies produce disruptions in working careers, workforce participation increases the opportunity cost of unplanned pregnancies and boost incentives to use safe forms of birth control - including induced abortion (Heath & Jayachandran, 2016; Sen & Batliwala, 2000). This means that when a large proportion of working-age women are economically active, many women attain self-interest in accessing legal abortion and are likely to have open conversations on topics such as contraception and abortion (Banaszak & Plutzer, 1993). These interactions and subsequent discussions help break the traditional, discursive taboo concerning abortion (Francome, 2016), thereby making birth control needs and other gender-related issues common topics of discussion in the public sphere (Wyndow et al., 2013). Discursive processes are initiated by women who participate in the workforce. Eventually, women outside the labour market and men take part in the public conversation on birth control needs.

Exposure processes build on the exposure approach to attitudes formation, which argues that “individuals develop or change their understanding of women's place in society and their attitudes towards feminist issues when they

encounter ideas and situations that resonate with feminist ideals" (Bolzendahl & Myers, 2004, p. 761; Kroska & Elman, 2009). Living in a country with a gender-balanced workforce multiplies the chances of recurrent interactions with working women who display self-confident and assertive behaviours (Majlesi, 2016). These situations and interactions likely transform the stereotypes about women's capabilities and duties (Seguino, 2007) by dispelling traditional myths about women's weakness and limited capabilities (Eastin & Prakash, 2013). This new understanding that women are purposeful, autonomous actors in the economic field plausibly reverberates into other fields and gradually produces a general shift in gender. Indeed, other things being equal, countries with higher rates of female workforce participation are more likely to reject traditional female roles (André et al., 2013) and the discrimination against women when jobs are scarce (Pandian, 2019; Shu & Meagher, 2018). This overarching cultural shift probably also involves beliefs on contraception and abortion because normative gender equality and reproductive freedom are deeply bound up in individual worldviews (Sapiro & Conover, 2001). As a result, in a structurally driven process of cultural change, tolerance towards the use of contraception and abortion grows as the gender balance in the workforce increases. The aforementioned exposure processes mainly affect women outside the workforce and men, when both of them are confronted with an increasing proportion of women in the workplace.

Political processes also ensue from a shift in gender balance in the workforce. Increasing participation in the workforce provides women with economic, cognitive and social resources with which to share grievances. Empowered by these resources, women can then forge women's collective consciousness and act more effectively as an organized group advancing demands for women's rights (Bolzendahl & Brooks, 2007; Iversen & Rosenbluth, 2008). Women's movements, which have been principal actors demanding reproductive control and access to abortion, are examples of such collective actors (Ferree & Mueller, 2004).

By attaining more economic resources, women more easily become key constituencies in trade unions and progressive political parties that subsequently become more sensitive to feminist principles (Huber & Stephens, 2001). The result is that stronger female presence in the workforce has an enduring and substantial influence in policy-making debates and public policy decisions. For Huber and Stephens (2001), the economic power of women gained through labour force participation is an important (but by no means the only or the most important) determinant of social expenditure. Other research, in fact, shows that countries with higher gender balance in the workforce display higher social spending (Bolzendahl & Brooks, 2007). Moreover, progressive parties and unions can also act upon these feminist principles and jointly help articulate women's political priorities as they broaden awareness among many more women about their interests in contraception and abortion (Asal et al., 2008; Paxton et al., 2020). The aforementioned political processes are originated mainly by women in the workplace, as they become empowered to make their claims visible in the political arena.

In summary: A national context with a gender-balanced workforce likely activates a series of interlocked, socio-cultural and political processes that reverberate into public views on abortion. In countries with gender-balanced workforces, women have more incentives to openly discuss their birth control needs and views on abortion (*discursive processes*). In addition, women gain social visibility as autonomous and competent decision-makers deserving equal rights with men and their own right to self-determination (*exposure processes*). What is more, women attain more enhanced political resources to pursue their collective demands on many fronts—including reproductive control (*political processes*). In combination, and in spite of the "reactionary forces" that "seek to perpetuate the status quo" (Eastin & Prakash, 2013, p. 158), the three aforementioned processes facilitate a break with traditional, anti-abortion ideology and foster gradual, public diffusion of pro-choice views.¹

Let us emphasize that it is the gender balance in the workforce in particular the factor that influences abortion attitudes. Thus, our central claim differs from other studies which posit (or suggest) that the *general* level of gender equality in a given country (and not a specific dimension of gender equality) shapes abortion attitudes (Henry et al., 2022; Inglehart & Norris, 2003).

A caveat on potential inverse explanation is necessary at this point, however. Our theoretical model concludes that the gender composition in the workforce triggers changes in public opinion that facilitate pro-choice options. We deem the opposite process—that changes in abortion attitudes produce more gender balanced labour markets—

unlikely. Increasing women's labour force participation, historically and in the last decades, and across societies, has been explained mainly (but not exclusively) by economic changes such as sectoral shifts towards light manufacturing and services, where women have a comparative advantage (in comparison with labour-intensive agriculture or heavy industry). Attitudinal change (in favour of women's paid employment and other gender equality issues) happened only later on (if at all in the short- and medium-term) (Goldin, 1990; Heath & Jayachandran, 2016; Rindfuss et al., 1996). This is because traditional norms, including gender ideologies, tend to be rather 'sticky' and durable. Cultural change occurs with a lag, as individuals only feel the need to synchronize their gender-related beliefs and their social reality when both are persistently at odds (Anderson & Kohler, 2015). Changes in the gender composition of the workforce, therefore, must precede - rather than follow - attitudinal changes on abortion (Pandian, 2019).

3 | DATA AND METHODS

As noted above, comparative work on abortion attitudes uniformly analyzes a single database of abortion attitudes. Studies mainly utilize either the WVS (Loll & Hall, 2019) or the US General Social Survey (Adamczyk et al., 2020) but, to our knowledge, none of them combine different data sources. This single-database approach has a critical drawback of generating biases in parameter estimates due to (a) coverage error—that is, utilization of sampling frames not fully representative of the target population; (b) unit nonresponse—that is, nonresponse by persons selected in sample; and (c) measurement error—that is, influence of question wording. In the context of using a single data source, these sources of error can produce substantial biases (Firebaugh, 2018).

To minimize the cumulative biases generated by those sources of error, we follow the recommendation of Firebaugh (2018) and structure all the analyses around the principle of internal replication in which hypothesis testing involves assessing a core prediction *in different datasets*. In our case, internal replication involves the estimation of multivariate, multilevel models to assess the determinants of abortion attitudes using two different datasets. Such strategy minimizes biases in the final conclusions caused by either coverage, nonresponse or measurement error.

In the sections that follow, we analyse two datasets: the International Values Surveys (IVS)—that combines the WVS and European Values Survey—and the Religion Modules of the ISSP. Both ISSP and IVS are common sources of cross-national research on moral and policy attitudes (Scheepers et al., 2002; Welzel, 2013). They also have the important advantage of including a diverse range of participating countries on different continents at several time points. The two datasets also cover two types of abortion attitudes since one item asks about tolerance towards abortion in general (IVS) and another about abortion under quite concrete, personal circumstances (ISSP).

The first outcome—*abortion justifiable*—stems from the IVS and captures attitudes towards the general justifiability of abortion. The second outcome *abortion justifiable under low income condition* (hereafter abbreviated as *low income*) stems from ISSP surveys and captures attitudes towards the justifiability of abortion under conditions of low income of the pregnant woman.² Given that both dependent variables are continuous or quasi-continuous, we estimate linear regression models. Furthermore, using ordinal logit model for the *low income* outcome, the results do not differ (Table A4).

Our key independent variable refers to the *gender balance in the workforce*. It represents the ratio of female labour force participation rate (FLFPR) to male labour force participation rate (MLFPR). Several previous studies of gender attitudes operationalize instead women's economic empowerment with the FLFPR (Meuleman et al., 2017; Pandian, 2019). Yet the FLFPR is sensitive to economic and social conditions—for example, higher education enrolment rates, early retirement programs, and the economic cycle—also affecting MLFPR (Esping-Andersen, 1999). For instance, the FLFPR is lower if a higher proportion of young adult citizens are full-time students and the legal pensionable age is lower—two factors that also reduce the MLFPR and are orthogonal to women's average economic empowerment. For these reasons, FLFPR, in itself, does not capture women's relative, economic participation well. Following Crotti et al. (2021), we therefore operationalize women's economic power through the ratio of female to

male labour force participation rates. This indicator captures the relative, national economic empowerment of women and is not affected by demographic, economic and institutional conditions affecting both genders.

At the country-level, all models—for both ISSP and IVS datasets—control for seven factors stressed in the previous research. Higher gross domestic product (GDP) per capita is predicted by Inglehart and Norris (2003) to increase abortion attitudes. Since the level of economic inequality may affect tolerance toward abortion under conditions of low income (Blofield, 2013), all models control for *Gini index*. Following previous research on abortion attitudes (e.g., Adamczyk & Valdimarsdóttir, 2018), we control for the influence of the Catholic Church, which is measured through the *percentage of Catholics*. In addition, the percentage of respondents who attend religious services weekly (*percent weekly attendance*) measures the overall intensity of religiosity in the population. As predicted by Zhang (2020), democratic countries—measured through the *polyarchy index*—should display higher levels of abortion tolerance. More liberal abortion regimes, moreover, send the signal on the appropriateness of liberal abortion attitudes (Loll & Hall, 2019). We therefore include an *abortion policy index*, indicating the number of conditions in which abortion is legal. *Percentage of women in Parliament* reflects the political empowerment that previous work associates with attitudes favourable towards women's interests.

At the individual level, we control for at least 14 characteristics. Unsurprisingly, most works show that *female* respondents hold more liberal abortion attitudes (Adamczyk et al., 2020). The same research indicates that liberal abortion views peak at middle age, therefore we include the variables *age* and *age*.² As noted above, those with more formal education have also been shown having liberal abortion attitudes. To maximize the number of country-years in each analysis, we operationalize the IVS Dataset through attainment of *primary*, *secondary* or *tertiary education*; and the ISSP Dataset through *years of education*. Since *employed* and *unemployed* women face higher opportunity cost of uncontrolled fertility than non-labour force participants, we include interaction terms between gender and employment status to assess if employment status has a stronger impact among women. The influence of individual religiosity is captured through five dichotomous variables: *Weekly religious attendance* addresses the role of religious practices, while *Catholic*, *Protestant*, *Muslim* and *other religion* assess the role of religious self-identification by respondents. The models also control for *marital status* (married, divorced, single or widow) and, in the case of the IVS dataset, it is also possible to control for the concrete *number of children*.³ The Appendix provides formal definitions of all variables and the sources of all country-level factors. Table A1 includes descriptive statistics for all variables in both datasets and Table A2 provides correlation matrices for macro-level variables in both datasets.⁴

The IVS and ISSP Datasets constructed for this project include 292 and 98 country-years corresponding to 91 and 46 countries, respectively. To fully exploit this cross-national variation, we estimate random intercepts multilevel models. Multilevel models account for variance in the response across different levels of analysis and enable us to estimate the effect of aggregate-level variables on individual responses without underestimating the standard errors (Snijders & Bosker, 2011). Since the main goal of this article is to assess average national levels of support—rather than the causes in cross-national variation in a given attitudinal cleavage—we specifically estimate random-intercept three-level models (Snijders & Bosker, 2011). We use a three-level structure in all models because this project involves using comparative longitudinal survey data which includes individuals (level 1) nested within country-years (level 2) which in turn are nested within countries (level 3). A two-level model would have underestimated standard errors of country-level factors (Elff et al., 2021).

$$Y_{ijt} = \beta_{000} + \beta_{100}x_{ijt} + \beta_{020}z_{jt} + \beta_{010}year_t + u_j + u_{jt} + e_{ijt} \quad (1)$$

In Equation (1) Y_{ijt} is the outcome of individual i in country j and year t ; β_{000} the constant; x one of the individual-level covariates; z one of the country-year level covariates; and u_j , u_{jt} and e_{ijt} the country, country-year and individual-country-year error terms, respectively. β_{100} and β_{020} thus capture the effect of individual and cross-national factors, respectively. All models include a continuous *year* variable to capture potential trends shared by all countries. The intraclass correlations obtained from empty three-level models indicate that the country and year random effects

compose 27% and 23% of the total residual variances in the IVS and ISSP databases, respectively. We use listwise deletion of missing data.⁵

4 | DESCRIPTIVE RESULTS

The empirical analysis is structured in two stages: first, we analyse descriptive results of both datasets; second, we analyse multivariate results. Figures 1 and 2 display the average country-year values in *abortion justified* (IVS dataset) and *low income* (ISSP dataset), respectively. The figures show that most of the variation occurs cross-nationally, instead of within-country—that is, for a given country across waves. Northern European, Australasian, and Western European countries display the highest general acceptance of abortion, followed by North American, Eastern and Southern European, Eastern and South-Eastern Asian countries. Central and South American, South-Eastern Asian, and Western and Northern African countries display the lowest general acceptance of abortion.

Irrespective of time, cross-national differences in abortion attitudes do not appear to hinge substantially on the indicator because countries comparatively more tolerant towards abortion in general are also more tolerant towards abortion under conditions of low income ($r = .841, p < .05$). The substantial variation across countries found, regarding the two outcomes, warrants analyses that seek to explain it.

Is there a bivariate association between levels and changes in gender equality in regards to economic participation and abortion attitudes? To assess this, Figures 3 and 4 depict bivariate relationships between, on the one hand, the average values in *abortion justifiable* and *low income* and, on the other, the country-year *gender balance in the workforce*. Both figures provide preliminary evidence of a statistical association between abortion attitudes and the percentage of women among all labour force participants. Countries with higher values in this percentage display higher average levels of *abortion justifiable* and *low income* ($r = .507, p < .05$; and $r = .581, p < .05$, respectively).

5 | MULTIVARIATE RESULTS

The evidence thus far indicates that levels of abortion tolerance differ substantially cross-nationally and that the two indicators of abortion tolerance have a bivariate positive association with *gender balance in the workforce*. We now assess whether this latter finding remains stable after controlling for individual-level and country-level conditions proven significant in previous work on abortion attitudes. Table 1 (models 1–5) includes the multilevel multivariate models predicting the value in *abortion justifiable*, while Table 2 (models 6–10) includes the multilevel multivariate models predicting the value in *low income*. For each of the two outcomes we estimate five models. Models 1 and six include only individual-level covariates. Models 2, 3, 4, 7, 8 and 9 replicate models 1 and 6, adding three groups of country-level variables at a time: economic, political and cultural factors. The final models 5 and 10 include all individual- and country-level variables.

Concerning individual-level factors, abortion tolerance displays an inverted-U relationship with age, increases with the level of formal education, and is higher among non-religiously-active and non-religiously-affiliated respondents. General abortion tolerance and tolerance towards abortion due to low-income peak at age 40.1 and 46.5, respectively, and, in fact, start to decline at those points. The association with individual education is, moreover, positive, whether operationalized in terms of the maximum level in educational attainment (Table 1) or years of education (Table 2). Muslims, Catholics, Protestants and adherents to other religion are significantly more opposed to abortion than the non-religious affiliated. Married and widowed people are more opposed to abortion than single people and the number of children is negatively associated with the outcome.

Regarding the role of gender, the interaction terms depict a uniform situation where employed and unemployed women display more abortion tolerance than employed and unemployed men. More interestingly, employed women and unemployed women are, in general, significantly more likely to find abortion justifiable than economically inactive

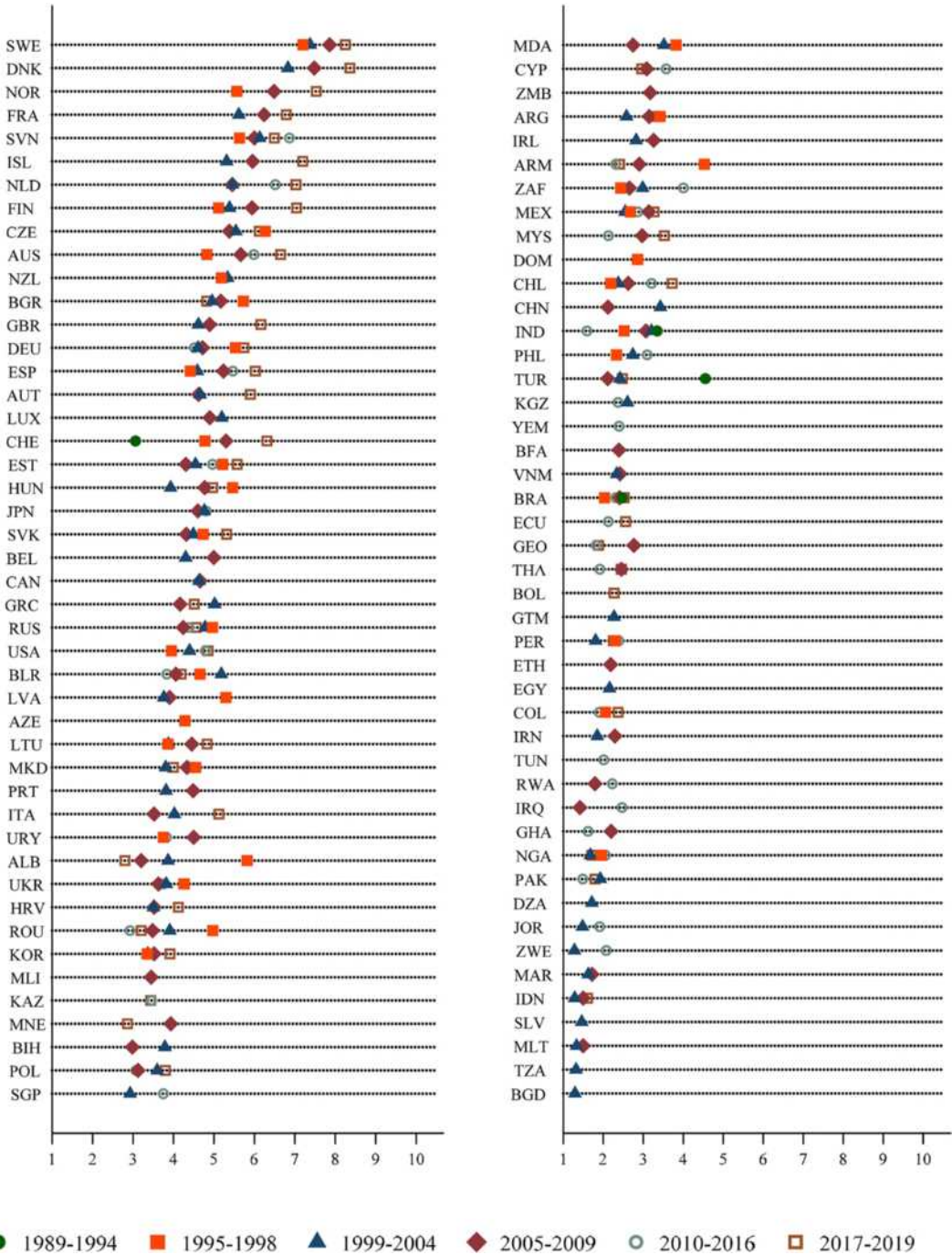


FIGURE 1 Average justifiability of abortion - International Values Surveys (IVS) waves, 1989–2019.

women. This important finding indicates that working women constitute a vanguard group in abortion tolerance. This finding is also consistent with previous research showing that attitudes towards women's roles are highly correlated with attitudes towards abortion (Hout, 1999). Once we introduce country-level variables (models 2-5 and 7-9), all individual-level factors considered remain stable. In sum: the evidence thus far indicates that economically active

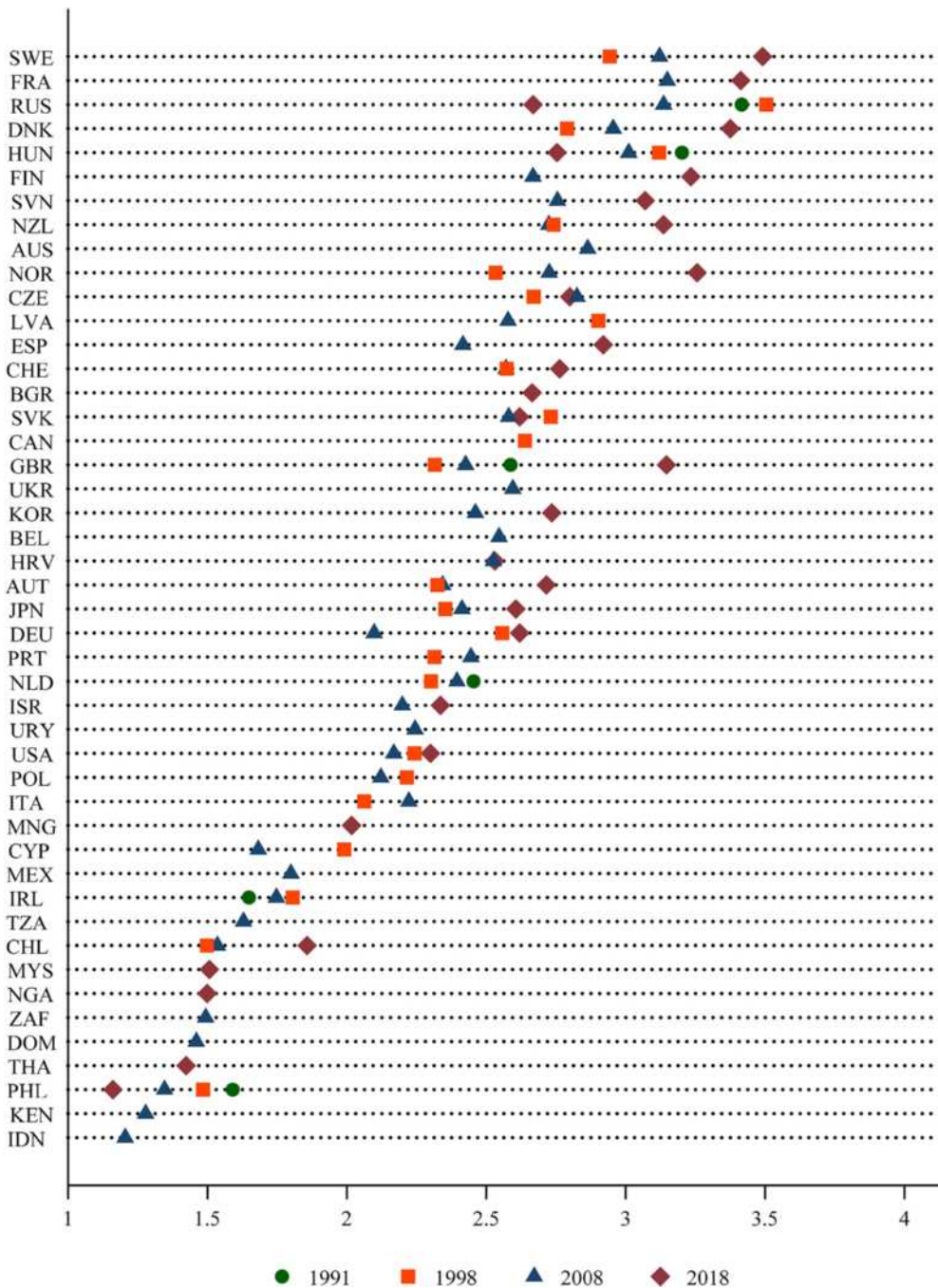


FIGURE 2 Average justifiability of abortion under conditions of low income of the pregnant woman - International Social Survey Programme (ISSP) waves, 1991–2018.

women, middle-aged persons, those with high levels of formal education, no religious affiliation, married or widowed people with children and only limited or no attendance at religious services prove most accepting of this medical procedure.

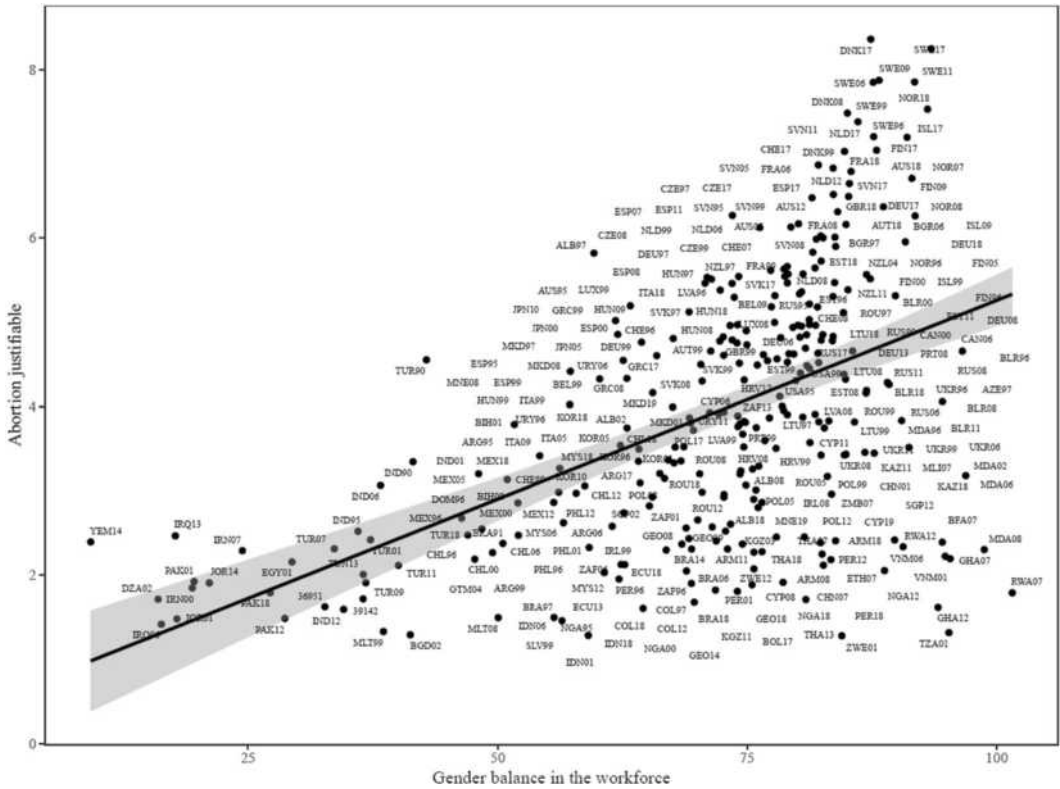


FIGURE 3 Relationship between *abortion justifiable* and *gender balance in the workforce* - International Values Surveys (IVS) waves, 1989–2019.

How are country-level covariates associated with the two indicators of abortion attitudes? To answer, we assess the role of economic, political, and cultural factors. Regarding economic factors - and challenging a core prediction of value modernization theory (Inglehart & Norris, 2003; Welzel, 2013) - GDP per capita does not have a consistent and positive effect on both outcomes. GDP per capita has a positive and significant association with *abortion justified*, but not on *low income*. The level of inequality, by contrast, does have a uniform association. Based on models 2 and 7, living in a highly inequitable country is generally associated with lower abortion tolerance and tolerance towards abortion due to low income. This evidence is clearly supportive of the prediction by Blofield (2013) that income inequality reduces abortion tolerance by undermining the collective consciousness of women - and consistent with Zhang (2020).

What is the association with the *gender balance in the workforce*? Supporting the robustness of this dimension's effect, models 2 and 7 indicate that, controlling for the level of affluence and income inequality, *gender balance in the workforce* is positively associated with abortion attitudes. Respondents in countries where the labour force includes a larger proportion of women report higher levels of general tolerance towards abortion and its practice under conditions of low income.⁶

Regarding political factors, the substantive political representation of women does not prove related to *low income*. Therefore, the women's level of political empowerment is not consistently related to both outcomes. Yet in models 3 and 8—which do not control for economic and cultural dimensions—*polyarchy index* and *abortion policy index* prove positively and significantly associated with the two outcomes. In line with Zhang (2020), countries with persistently high levels of democratic governance display more liberal abortion attitudes. Moreover, consistent with the

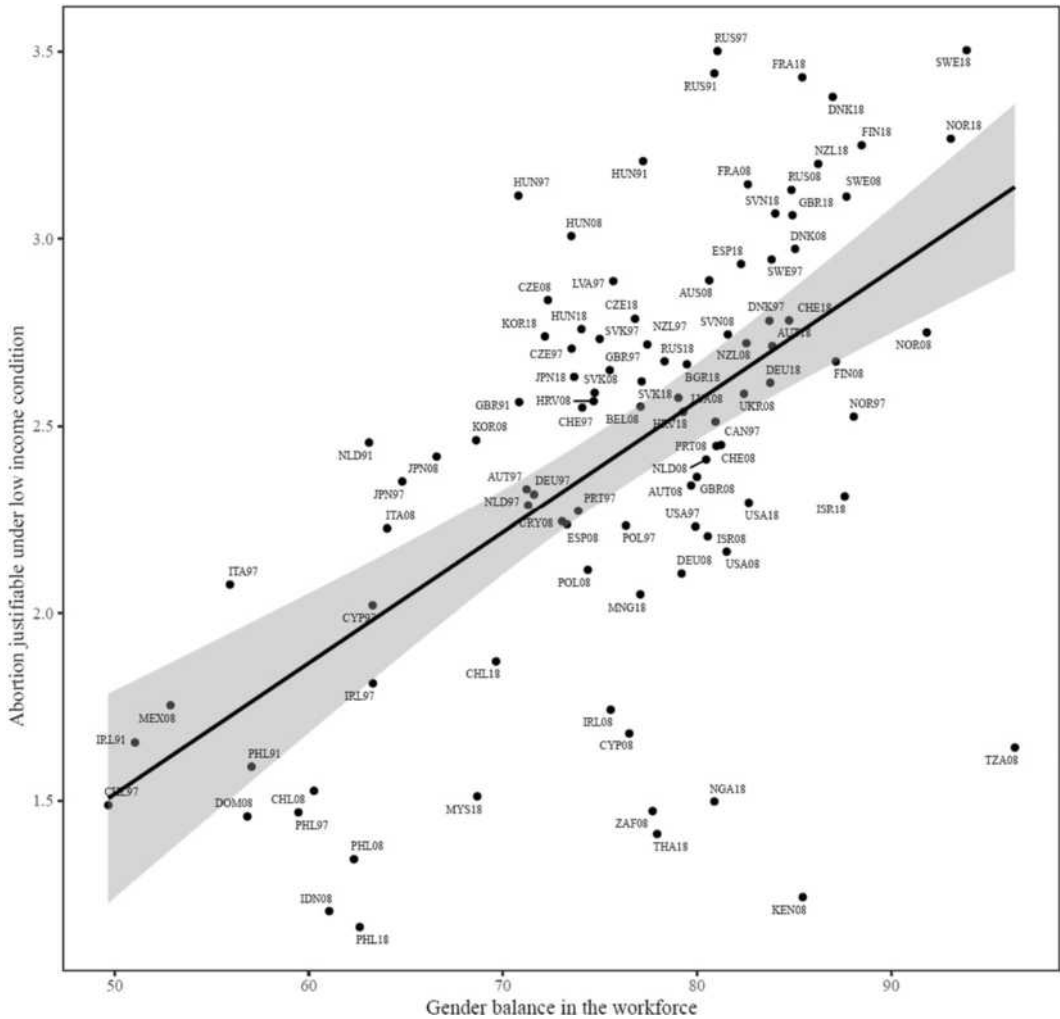


FIGURE 4 Relationship between *low income* and *gender balance in the workforce* - International Social Survey Programme (ISSP) waves, 1991–2018.

policy feedbacks framework (Campbell, 2012), countries with more liberal abortion policies also display more liberal abortion attitudes.

Surprisingly, regarding cultural factors, respondents living in countries with a larger proportion of Catholics are not less accepting of abortion since *percent Catholics* does not have negative and significant associations with either of the two outcomes. Moreover, in models with socio-cultural macro-level factors, higher levels of societal religiosity—measured through *percent weekly attendance*—are (negatively) related to *low income* (model 9) and *abortion justifiable* (model 4).

In models 2–4 and 6–9, five country-level factors prove related to the two outcomes: *gender balance in the workforce*; *Gini index*; *polyarchy index*; *abortion policy index*; and *percent weekly attendance*. To assess the stability of the effects of these variables, we estimate final models 5 and 10 that include all country-level factors. *Abortion policy index* and *percent weekly attendance* then become non-consistently significantly related to both outcomes. By contrast, three variables maintain their associations: *gender balance in the workforce*, *Gini index*, and *polyarchy index*. In sum, abortion tolerance proves significantly higher among respondents living in countries with a gender-balanced workforce, less income inequality, and solid democratic institutions.

TABLE 1 Multilevel models predicting justifiability of abortion in 292 country-years—International Values Surveys (IVS) database, 1989–2019.

	Model 1	Model 2	Model 3	Model 4	Model 5
Individual-level factors					
Female	0.035* (2.381)	0.035* (2.383)	0.035* (2.389)	0.034* (2.374)	0.035* (2.382)
Age	0.040*** (24.445)	0.040*** (24.425)	0.040*** (24.432)	0.040*** (24.437)	0.040*** (24.412)
Age ²	-0.001*** (-29.273)	-0.001*** (-29.265)	-0.001*** (-29.264)	-0.001*** (-29.271)	-0.001*** (-29.257)
Secondary education (ref. Primary education)	0.318*** (27.214)	0.318*** (27.178)	0.318*** (27.207)	0.318*** (27.179)	0.317*** (27.151)
Tertiary education	0.706*** (51.505)	0.705*** (51.481)	0.706*** (51.519)	0.705*** (51.475)	0.705*** (51.464)
Employed (ref. Non-active)	0.042** (2.779)	0.042** (2.778)	0.042** (2.789)	0.042** (2.782)	0.042** (2.788)
Unemployed	-0.089*** (-3.902)	-0.088*** (-3.892)	-0.089*** (-3.914)	-0.089*** (-3.904)	-0.088*** (-3.897)
Employed*Female	0.159*** (8.764)	0.159*** (8.746)	0.159*** (8.753)	0.159*** (8.765)	0.159*** (8.744)
Unemployed*Female	0.167*** (5.548)	0.167*** (5.540)	0.167*** (5.542)	0.168*** (5.552)	0.167*** (5.541)
Religious attendance	-0.878*** (-83.951)	-0.877*** (-83.915)	-0.878*** (-83.936)	-0.877*** (-83.809)	-0.877*** (-83.822)
Catholic (ref. No religion)	-0.822*** (-58.691)	-0.822*** (-58.722)	-0.822*** (-58.699)	-0.822*** (-58.666)	-0.821*** (-58.646)
Protestant	-0.646*** (-39.076)	-0.645*** (-39.047)	-0.645*** (-39.042)	-0.645*** (-39.029)	-0.645*** (-39.022)
Muslim	-1.023*** (-44.399)	-1.019*** (-44.205)	-1.020*** (-44.280)	-1.023*** (-44.362)	-1.018*** (-44.162)
Other	-0.669*** (-42.624)	-0.669*** (-42.639)	-0.669*** (-42.646)	-0.669*** (-42.638)	-0.670*** (-42.669)
Married/living together (ref. single)	-0.124*** (-9.519)	-0.124*** (-9.535)	-0.124*** (-9.535)	-0.124*** (-9.535)	-0.124*** (-9.547)
Divorced/separated	0.137*** (7.013)	0.136*** (7.001)	0.136*** (7.002)	0.136*** (7.005)	0.136*** (6.995)
Widowed	-0.131*** (-6.161)	-0.131*** (-6.172)	-0.131*** (-6.175)	-0.131*** (-6.172)	-0.131*** (-6.182)
Number of children	-0.075*** (-20.228)	-0.075*** (-20.183)	-0.075*** (-20.206)	-0.075*** (-20.214)	-0.075*** (-20.169)

(Continues)

TABLE 1 (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
Country-level factors					
Gender balance in the workforce		0.021*** (5.468)			0.012** (2.963)
GDP per capita logged		0.302*** (4.766)			0.149* (1.975)
Gini index		-0.057*** (-5.509)			-0.046*** (-4.523)
Polyarchy index			1.750*** (5.466)		1.096** (3.180)
Women in parliament			0.012+ (1.881)		0.011* (1.968)
Abortion policy index			0.237*** (6.049)		0.073+ (1.720)
Perc. Catholics				0.375 (1.232)	-0.241 (-0.978)
Perc. Weekly attendance				-2.616*** (-7.010)	-0.594 (-1.542)
Year	0.013** (2.877)	-0.004 (-0.849)	-0.002 (-0.321)	0.011* (2.361)	-0.008 (-1.351)
Constant	-23.797* (-2.566)	9.581 (0.958)	4.489 (0.366)	-19.065* (-1.979)	17.930 (1.488)
Variance country	1.375 (.220)	.403 (.081)	.555 (.109)	.817 (.141)	.281 (.066)
Variance country-year	.285 (.029)	.303 (.031)	.306 (.032)	.294 (.030)	.305 (.032)
N/country-years/countries	395,533 /292/91	395,533 /292/91	395,533 /292/91	395,533 /292/91	395,533 /292/91
AIC	1,850,712	1,850,634	1,850,659	1,850,679	1,850,622
BIC	1,850,962	1,850,917	1,850,942	1,850,951	1,850,959

Note: T-statistic in parentheses, except variances that report standard errors.

Abbreviations: AIC, Akaike Information Criterion; BIC, Bayesian Information Criterion; GDP, gross domestic product.

+ $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$.

To illustrate the substantiveness of the *gender balance in the workforce* effect, Figures 5 and 6 depict subplots with the predicted values of *abortion justifiable* and *low income* at different levels than the *gender balance in the workforce* and other significant country-level variables in models 5 and 10. Both figures show that *gender balance in the workforce* has a substantive association with the outcome. A shift in this variable from the average value in *gender balance in the workforce* to one standard deviation above the mean in the IVS and ISSP datasets is associated with a 0.21 and a 0.16 increase in the predicted value in *abortion justifiable* and *low income*, respectively.

We also estimate a series of sensitivity analyses. The effect of *gender balance on the workforce* may hinge on one influential country-year. We therefore re-estimate models 5 and 10 by excluding each country-year and each country at a time.⁷ Finally, since the outcome variable in the ISSP sample is ordinal in nature, we replicate model 10 with an

TABLE 2 Multilevel models predicting tolerance towards abortion under conditions of low income of the mother in 97 country-years—International Social Survey Programme (ISSP) database, 1991–2018.

	Model 6	Model 7	Model 8	Model 9	Model 10
Individual-level factors					
Female	0.012 (1.046)	0.012 (1.055)	0.012 (1.046)	0.012 (1.041)	0.012 (1.056)
Age	0.009*** (7.310)	0.009*** (7.307)	0.009*** (7.305)	0.009*** (7.294)	0.009*** (7.299)
Age ²	-0.000*** (-7.715)	-0.000*** (-7.718)	-0.000*** (-7.717)	-0.000*** (-7.707)	-0.000*** (-7.713)
Education years	0.009*** (11.263)	0.009*** (11.207)	0.009*** (11.227)	0.009*** (11.245)	0.009*** (11.204)
Employed	-0.005 (-0.439)	-0.005 (-0.449)	-0.005 (-0.433)	-0.005 (-0.436)	-0.005 (-0.435)
Unemployed	-0.083*** (-3.657)	-0.082*** (-3.645)	-0.083*** (-3.653)	-0.082*** (-3.644)	-0.082*** (-3.642)
Employed* Female	0.084*** (5.993)	0.084*** (5.980)	0.084*** (5.987)	0.084*** (5.993)	0.084*** (5.973)
Unemployed* Female	0.160*** (5.392)	0.160*** (5.390)	0.159*** (5.380)	0.160*** (5.387)	0.159*** (5.379)
Religious attendance	-0.511*** (-56.802)	-0.511*** (-56.789)	-0.511*** (-56.739)	-0.510*** (-56.680)	-0.510*** (-56.686)
Catholic (Ref. No religion)	-0.420*** (-40.078)	-0.419*** (-40.029)	-0.419*** (-40.090)	-0.419*** (-40.031)	-0.419*** (-40.036)
Protestant	-0.339*** (-30.951)	-0.339*** (-30.980)	-0.339*** (-30.967)	-0.339*** (-30.910)	-0.339*** (-30.953)
Muslim	-0.526*** (-23.657)	-0.525*** (-23.643)	-0.524*** (-23.578)	-0.524*** (-23.557)	-0.523*** (-23.532)
Other	-0.306*** (-22.931)	-0.306*** (-22.990)	-0.305*** (-22.896)	-0.306*** (-22.976)	-0.305*** (-22.934)
Married/living with partner (ref. Single)	-0.078*** (-8.173)	-0.079*** (-8.186)	-0.078*** (-8.176)	-0.078*** (-8.176)	-0.079*** (-8.192)
Divorced/separated	0.003 (0.247)	0.003 (0.250)	0.003 (0.242)	0.003 (0.246)	0.003 (0.237)
Widowed	-0.107*** (-6.818)	-0.106*** (-6.805)	-0.107*** (-6.815)	-0.107*** (-6.817)	-0.107*** (-6.818)
Children	-0.069*** (-9.028)	-0.069*** (-9.016)	-0.069*** (-8.999)	-0.069*** (-9.022)	-0.069*** (-9.004)
Country-level factors					
Gender balance in the workforce		0.018*** (4.180)			0.016*** (3.339)

(Continues)

TABLE 2 (Continued)

	Model 6	Model 7	Model 8	Model 9	Model 10
GDP per capita logged		0.038 (0.883)			-0.084 (-1.555)
Gini index		-0.025*** (-4.090)			-0.020** (-3.231)
Polyarchy index			0.714** (2.584)		0.683* (2.424)
Women in parliament			0.005 (1.280)		0.001 (0.167)
Abortion policy index			0.091*** (3.868)		0.031 (1.235)
Perc. Catholics				0.067 (0.417)	0.124 (0.953)
Perc. Weekly attendance				-1.075*** (-4.390)	-0.438+ (-1.652)
Year	0.001 (0.384)	-0.005 (-1.457)	-0.001 (-0.429)	-0.001 (-0.376)	-0.003 (-0.759)
Constant	0.262 (0.044)	11.880+ (1.774)	4.449 (0.637)	5.091 (0.815)	7.567 (1.099)
Variance country	.161 (.040)	.211 (.036)	.078 (.022)	.098 (.027)	.039 (.013)
Variance country-year	.044 (.009)	.213 (.021)	.041 (.008)	.047 (.009)	.038 (.008)
N/country-years /Countries	112,904/98/46	112,904/98/46	112,904/98/46	112,904/98/46	112,904/98/46
AIC	330,659	330,622	330,632	330,647	330,616
BIC	330,871	330,862	330,873	330,878	330,905

Note: T-statistic in parentheses, except variances that report standard errors.

Abbreviations: AIC, Akaike Information Criterion; BIC, Bayesian Information Criterion; GDP, gross domestic product.

+ $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$.

ordinal logit model (Table A3). The results do not change substantially: in all these additional models *gender balance in the workforce* still has a significant positive effect.

We finally address the possible concern of the presence of reversed causality: The gender balance in the workforce may covary with average national abortion attitudes mainly because beliefs on reproduction rights drive labour force participation. To address this concern, we use IVS data to estimate a dynamic structural equation model (Table A4) predicting the influence of temporal changes in *gender balance in the workforce* and *abortion justifiable*. The standardized coefficients indicate that the positive covariation of temporal changes in *gender balance in the workforce* with *abortion justifiable* at t_2 is stronger than the covariation of changes in *abortion justifiable* with the *gender balance in the workforce* at t_2 . This evidence does not suggest that reversed causality drives the association between abortion attitudes and the gender balance in the workforce.

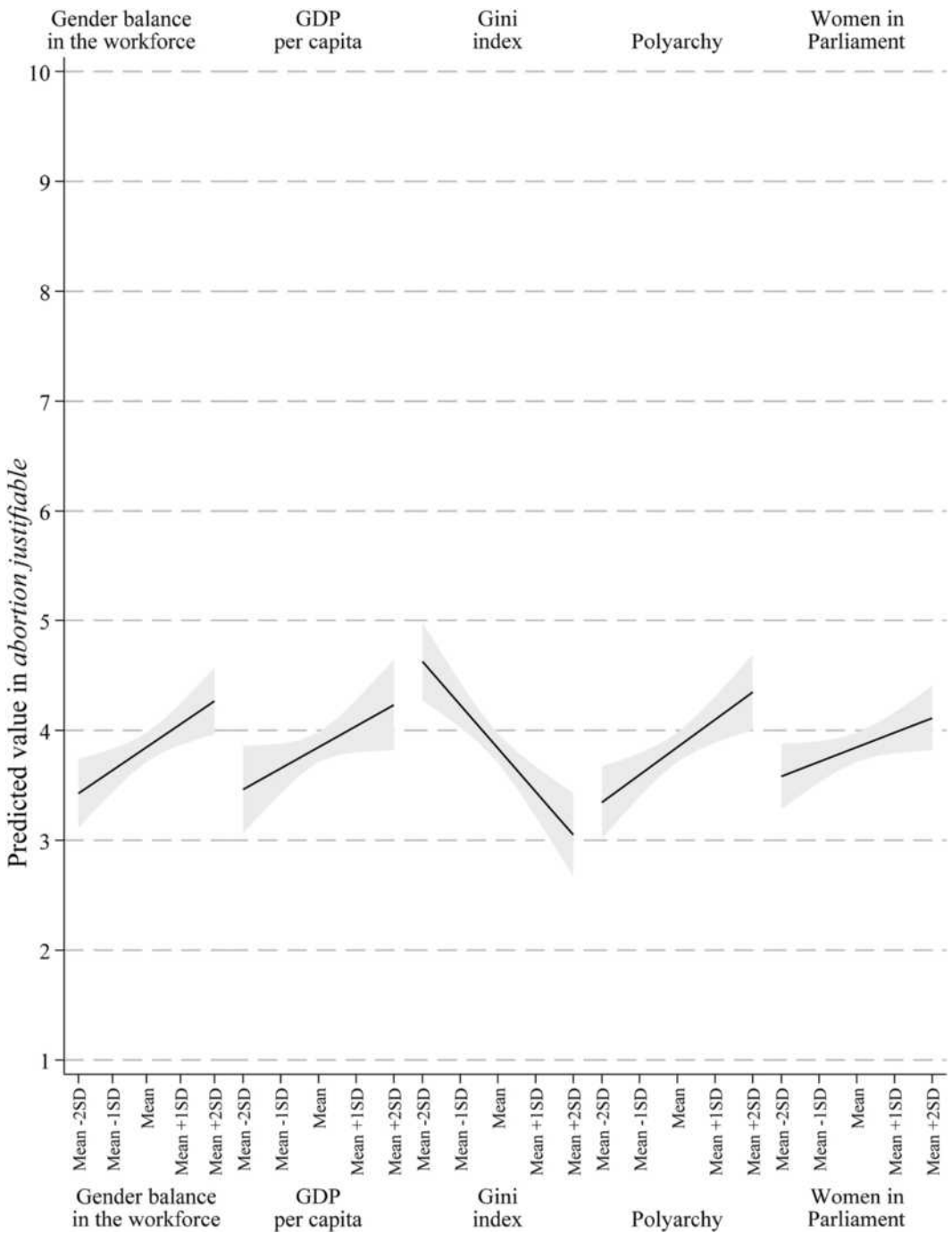


FIGURE 5 Predicted value in *Abortion Justifiable* at different levels of five independent variables.

6 | DISCUSSION AND CONCLUSION

This article contributes to the comparative literature on pro-choice attitudes by examining the role of a hitherto under-analyzed dimension - the gender balance in the workforce - and analyzing two different databases—the IVS

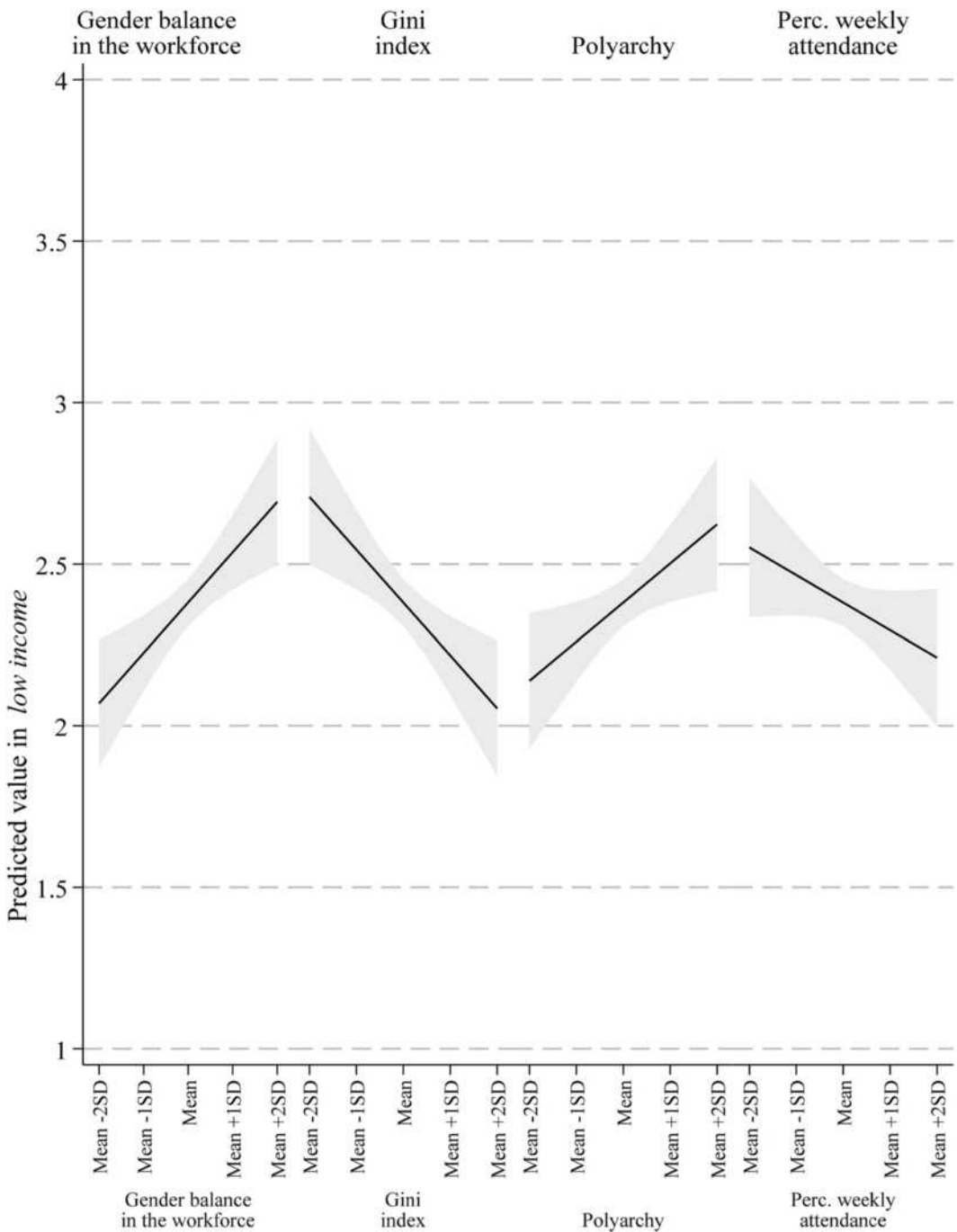


FIGURE 6 Predicted value in low income at different levels of three independent variables.

and ISSP datasets—with disparate questions on abortion attitudes. These sources were constructed through different sampling designs, cover heterogeneous sets of countries and periods, and include two very different indicators of abortion attitudes. Reaching conclusions based on both databases thereby reduces the risks of systematic errors and biases in results associated with exclusive reliance on a single dataset. Utilizing three-level models, the analysis yields four main findings.

First, descriptive results of the two sources indicate relevant uniform patterns. Measured either as general abortion justifiability or justifiability of abortion when the pregnant woman has low-income, pro-choice attitudes display substantial cross-national variation and common patterns across sources. Northern and Western European countries display the most pro-choice positions, followed by other countries in Europe, North and South America, South-East Asia and Western and Northern Africa.

Second, turning to associations with country-level dimensions, several cultural, economic, and political aspects prove largely unrelated to abortion attitudes. Despite the centrality of religious actors in many domestic abortion debates and the salience of this topic in orthodox doctrines of certain religions and denominations—especially Catholicism—neither the level of collective religiosity nor the percentage of Catholics prove, on average, related to pro-life attitudes. Considering that several Islamic and Protestant denominations hold no belligerent stances on abortion and that secularization has attenuated the cultural influence of orthodox, pro-life, doctrine in many Catholic countries, this latter result is understandable. While country affluence, women's descriptive representation and abortion policy liberalism display associations with either *abortion justifiable* or *low income*, they do not have a robust effect: none of these three variables are significantly related both to *abortion justifiable* and *low income*.

Third and most important, three political and macro-economic dimensions—the level of democratization, income inequality, and workforce gender balance—are robustly related to the outcome. On average, individuals in democratic societies are more tolerant towards abortion than individuals in undemocratic or partially democratic societies. This finding is consistent with the expectation of Zhang (2020) that people in democratic regimes hold more liberal, social attitudes because they do not face efforts of autocratic governments to forestall social and political change.

Individuals living in very inequitable societies find abortion less acceptable than individuals living in less inequitable societies. As Blofield (2013) theorizes: In contexts of high-income inequality, first, wealthy women can ensure their access to abortion through foreign travel and, second, large gaps between income groups thwart feminist consciousness-raising, thus hampering women's pro-choice mobilization. Further work could examine the socio-political processes mediating income inequality and abortion attitudes. If income inequality undermines women's collective consciousness, average feminist mobilization should be negatively correlated with levels of income inequality.

Consistent with the prediction formulated in the theoretical framework of this article, gender balance in the workforce is also related to pro-choice attitudes. All else being equal, in countries where women and men are likely to be equally active in the workforce, individuals are more likely to deem abortion justifiable in the two conditions considered—in general, and if pregnant women are of low-income—than individuals in countries where primarily men constitute the workforce. We can infer from this result that future increases in female representation in the labour force may facilitate the expansion of pro-choice beliefs. Prior work on this topic has neither theorized nor empirically assessed the association between workforce gender balance and abortion attitudes documented in this article.

One important theoretical implication arises from this article: our theoretical model and empirical results vindicate the centrality of accounts of gender-related beliefs that focus on macro-economic factors. In the early 1990s, structuralist theorists noted that all-inclusive gender composition in the macro-social field of economic production transforms gender relations pertaining to unpaid production, sexuality and politics (Chafetz, 1990; Collins et al., 1993). This line of reasoning became less salient in gender studies in the 2000s and scholars started to consider the influence of gender equality in general (Henry et al., 2022; Inglehart & Norris, 2003) or other gender equality dimensions such as abortion policy (Loll & Hall, 2019) and women's presence in political decision-making (Paxton et al., 2020). We advance the literature by harking back to a structuralist approach and stressing the role of macro-economic conditions. Structural economic dimensions—for example, the gender composition of the workforce and overall income inequality—constitute social facts with substantial relevance even when agents are not conscious of the influence exerted by them. The emphasis of this research on structural explanatory factors is in line with other works, for example, Homan (2019)'s study, which for the US, found that structural sexism has detrimental implications on health outcomes. As demonstrated in this article, structural economic dimensions could therefore be fruit-

fully incorporated into the analytical toolkit of comparative gender scholars to account for resilient, cross-national variations in gendered beliefs and practices.

The main results of the study also have relevant policy implications. Our study does not document a robust association between abortion policy liberalism and abortion attitudes, indicating that policy-makers should not expect abortion decriminalisations to produce consistent positive policy feedback effects on public opinion. Similarly, the relevance of the gender balance in the workforce for abortion attitudes suggests conditions under which the abortion issue will be most salient. Abortion ought to remain a contentious issue in countries with intermediate balance in the workforce while it is likely to remain a low-salience issue in countries with a strong gender balance in the workforce, which should affect the agenda of progressive and conservative policy-makers.

The analysis and results in this manuscript may, however, be limited by several aspects. Interpretations of the meaning of an “always justifiable” and a “never justifiable” abortion or “very low income” as grounds for not affording more children may differ between countries. Similarly, the theoretical model formulates that women’s assertiveness; receptivity to open conversations on abortion; acceptance of women’s self-direction; the agenda of political parties and women’s movements; and the salience of women’s issues in the public agenda mediate the relationship between the gender balance in the workforce and abortion attitudes. Due to data limitations, the role of each of these concrete processes could not be studied. Further research could examine the relative relevance of each of these factors. On a more general level, although this article shows that gender-balanced workforces are robustly linked to pro-choice public views, a third variable might affect both gender-balanced workforces and pro-choice attitudes simultaneously. The existence of such a third variable cannot be completely dismissed.

Future work could also explore the role of gender equality in the workforce for other types of gender-related attitudes. Given that the gender balance in the workforce reconfigures women’s incentives and reshapes everyday interactions across and within genders, it may be related to the support for different dimensions like new family forms, women’s personal goals or gender equality policies. Until such research is conducted, this article contributes to our understanding of gender relations in contemporary societies by showing a robust, positive association between gender balance in the workforce and pro-choice attitudes.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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ENDNOTES

¹ Granted, additional macro social and economic characteristic may make the influence of the gender ratio in the workforce on abortion attitudes particularly large. Since labour force participation includes employed and unemployed individuals, two gender-balanced workforces may contain different proportions of unemployed women and men. Additionally, the level of industrialization and tertiarization of the economy may be relevant. In the manufacturing and service sector, women and men are more exposed to each other and subsequently have a chance to influence each other’s attitudes. In contrast, in certain countries, women and men tend to work in separate sectors (e.g., women in textile/clothing in South-East Asia). We, thus, expect that the association between gender balance in the labour market and views favourable to abortion to be especially intense in countries with low proportions of unemployed women, a larger service sector and low gender occupational segregation.

- ² The ISSP Religion Module waves do include a second item concerning attitudes towards abortion under conditions of “a strong chance of a serious defect in the baby”. Yet this latter item is not included in the analysis because it is only available for 1991–2008 and because foetal defect is a far less likely cause to seek an abortion than socioeconomic concerns (Chae et al., 2017).
- ³ In the case of the ISSP dataset it was only possible to distinguish (dichotomously) between respondents who have children from those who do not.
- ⁴ The variation inflation factors (VIF) of the macro-level variables included in models 5 and 10 are all lower than 5, indicating the absence of a multicollinearity.
- ⁵ Neither of the dataset have a serious problem of missing data. In the WVS dataset, missing data for the individual variables is below 5%, except in the case of the dependent variable (5.6%) and education (13.3%) and gender balance in the workforce is only missing in 9.2% of the sample. In the ISSP dataset, missing data for the individual variables is below 5%, except in the case of the dependent variable (9.3%), religious attendance (8%) and children (13.9%), while gender balance in the workforce is only missing in 4.4% of the sample.
- ⁶ Indeed, in light of the BIC values, models 2 and 7—including only economic macro-level factors—provide the best fit of the two databases.
- ⁷ This additional evidence is available upon request.

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