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Multidimensional domestic gender inequality and the global diffusion of women's ministries, 1975–2015

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Abstract

Since the 1970s, many countries have passed policy and institutional reforms to promote gender equality and the wellbeing of women. The global diffusion of gender and women's ministries constitutes a manifestation of this process. However, our understanding of the diffusion of this organizational form is very limited. To fill this gap, we examine the adoption of cabinet-level, women's ministries worldwide, between 1975 and 2015. Our argument builds on the fact that, within a given country, gender (in)equality is heterogeneous across the economic, political and social domains, and that shifts in women's descriptive political representation and feminization of the labor force hasten the adoption of these ministries. As women expand their formal political power, they are better able to foster the perception of a linked fate and promote the creation of women's machineries. Moreover, rapid feminization of the labor force increases the opportunity costs of all forms of gender discrimination and improves women's collective socio-political economic resources to act against all forms of discrimination. Commensurate with our argument, penalized maximum likelihood fixed-effects (PML-FE) models indicate that countries which observe faster increases in women's presence in the political elite and feminization of the labor force are more likely to adopt a women's ministry.

In 1975, Mauritius was the first country to create a cabinet-level, gender/women's ministry. In subsequent years, many other countries (e.g. Canada, Central African Republic, Gabon, Ivory Coast, Papua New Guinea and Togo) followed suit, leading to a worldwide wave in the creation of gender/women's ministries. By women's ministries, we mean full, cabinet-level ministries or departments (in department-based cabinets) that seek to improve women's living conditions and redress the discrimination and subordination of women in all social fields. Between 1975 and 2015, as many as 107 countries had a women's ministry. The countries that

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created these ministries are located on all continents and differ substantially in their socio-political economic conditions. In 2015, 37.56 percent of all countries worldwide had a women's ministry. Once established, most of these ministries have proven to be long-lasting. Almost two thirds (63%) of all the countries that adopted a women's ministry between 1975 and 1989 still had one in 2015.

The diffusion of women ministries has taken place within a broader process of legal and institutional reforms that seek to fast-track the advancement of women (Beckwith, 2020). These ministries have become outstanding institutions, as they have attained an ideal status to make a substantial political and social impact. Gender-based ministerial institutions usually have a larger share of a state's financial and personnel resources than lower level agencies.[1] While the latter have had limited influence due to underfunding, reduced staff, and organizational isolation (e.g. ESCAP, 2015; United Nations General Assembly, 2000), women's ministries may have a critical procedural importance as gatekeepers, with the ability to veto (gender-insensitive) proposals from other ministries and fashion other gender mainstreaming proposals that they can fast-track for discussion in cabinet meetings (Warwick and Druckman, 2006).[2] Ministries and the ministers themselves also obtain "unparalleled symbolic power" in domestic public debates (O'Brien and Reyes-Housholder, 2020: 254), as their existence and actions send a clear normative signal that the head of government is committed to the principle of gender equality and seeks to improve the welfare of women (Escobar-Lemmon and Taylor-Robinson, 2005).[3] For these reasons, women's ministries have particular potential among institutional actors seeking the improvement of women's socio-political economic empowerment.

The question of which factors generally account for the adoption of women's portfolios remains under-explained. Several qualitative case studies have assessed the evolution of national gender machineries (McBride and Mazur, 2010; Outshoorn and Kantola, 2007; Rai, 2003). However, these case studies rarely address the socio-political and economic context that facilitates their creation. Several analyses in the quantitative macro-level literature on gender politics have considered the determinants of descriptive women's representation in cabinets (Davis, 1997; Escobar-Lemmon and Taylor-Robinson, 2005; Krook and O'Brien, 2012), while three quantitative studies have analyzed the diffusion of gender mainstreaming policies and national machineries in general (Krook and True, 2012; True, 2016; True and Mintrom, 2001). As yet, however, no quantitative work has specifically sought to explain the creation of women ministries. To fill this gap in the literature on gender and politics, this article conducts the first global analysis of the diffusion of this form of gender machinery. It addresses a single question: which factors help account for the adoption and global diffusion of women's ministries?

Our analysis considers the period 1975–2015 and more than 100 countries. Since our study covers an extensive period from the creation of the first ministry onward, it addresses most of the historical process for this particular organizational diffusion. Indeed, following extant work on the diffusion of political institutions that show the role that domestic, international, and socio-political economic conditions play (for reviews, see Dobbin et al., 2007; Hughes et al., 2017a, 2019; Linos, 2013), we follow a broad perspective from which to explore the influence of a wide range of factors. To minimize the role of unobserved heterogeneity, we estimate the penalized maximum likelihood fixed-effects (PML-FE) models (Cook et al., 2020), which combine the desirable properties of allowing the analysis of dichotomous rare events while using country fixed effects. The use of fixed effects prevents biases in parameter estimates caused by all possible unobserved, time-constant characteristics (e.g. colonial history, cultural background, and geographical elements). It also

implies that the results strictly report the association between longitudinal changes in predictor variables and ministry adoption.

We argue that the multidimensional domestic configuration of gender inequalities affects the enactment of women's ministries. Whereas gender inequality remains pervasive in contemporary societies, it is usually heterogeneous across areas of social life (Bose, 2015; Connell, 2005). Within a given country, women's empowerment evolves at different speeds in the political field, civil society, and the labor market. Leveraging this multidimensionality, we show that the speeds of women's political and socio-economic empowerment are related to the adoption of these ministries. Countries undergoing faster increases in the descriptive political representation of women are significantly more likely to create these ministries. As women expand their formal political power, they are better able to foster the perception of a linked fate and promote the creation of women's machineries.

Moreover, countries undergoing faster increases in the feminization of the labor force are also significantly more likely to create these ministries. By opening up new job opportunities for women, accelerated feminization of the labor force increases the opportunity cost of gender discrimination and incentivizes broad-based demand for anti-discriminatory policies. Moreover, rapid feminization of the labor force helps women acting upon those incentives, as it improves their collective socio-political and economic resources. In addition, this original database allows us to examine the effects of variables that have hitherto been omitted or less studied in the literature on this scholarship. These variables include international factors (membership of and participation in international organizations), political factors (level of democracy, ideology, cabinet size, and violence), and socio-structural factors (fertility rate, GDP per capita), most of which are being measured and assessed for the first time to determine their effects.

International factors and the adoption of gender ministries

Previous quantitative work has shown that the adoption and diffusion of gender equality policies is a multidimensional process influenced by multiple levels (international and domestic) and dimensions (socio-political and economic) (Bush, 2011; Hughes et al., 2017b, 2019; O'Brien and Reyes-Housholder, 2020; True, 2016). By reviewing previous work and building on it, we take an encompassing approach and consider the influence of these multiple levels and dimensions. While we pay particular attention to studies on the evolution and diffusion of national gender machineries, we also consider other studies on gender equality policies and women's political representation.

We first consider the role of four international and transnational factors: participation in UN conferences on women; ratification of the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW); the activities of international governmental organizations; and peer effects. Several studies have demonstrated the association of these factors with the diffusion of political gender equality (Htun and Weldon, 2012; Hughes et al., 2015; True and Mintrom, 2001). The UN has historically held a central, agenda-setting role on women's rights (Krook and True, 2012). From 1975 to 1990, the UN organized three international women's conferences—in Mexico (1975), Copenhagen (1980) and Nairobi (1990). Bringing together thousands of government officials, as well as national and international female activists, these conferences enabled a fertile exchange of experiences of women's status worldwide, the formulation of emerging analytical and normative consensuses, and the establishment of transnational networks for the promotion of women's rights. These conferences institutionalized certain global norms, according to which women's rights are integral to human rights, and women are central actors and the necessary beneficiaries of economic development (Stienstra, 1994). A later conference in Beijing (1995)

further institutionalized the inclusion of women in decision-making roles and the need to create national machineries to place women in higher positions. The four conferences also catalyzed domestic mobilizations that were preceded by myriad regional and national preparatory meetings, followed by regular international meetings and reviews assessing the domestic implementation of commitments. There is evidence that UN conferences stimulated the establishment of national machineries for women in several countries (Joachim, 2007; True and Mintrom, 2001).

CEDAW has also generated a great deal of interest among scholars regarding the diffusion of gender policies. Adopted in 1979, it established states' commitment to achieving gender equality and preventing discrimination against women. CEDAW ratification facilitates domestic gender policy change by providing domestic activists with a legal instrument through which to leverage their cases for specific anti-discriminatory policy proposals (Byrnes and Freeman, 2012; Keck and Sikkink, 2014). CEDAW ratification has also had indirect "soft power" effects through its regular reports and assessments of implementation at domestic level, which "promote the diffusion of the language of women's rights and encourage transnational collaboration among diverse actors" (True, 2016: 314, Zwingel, 2016). Recent work has shown a relationship, first, between the enactment of CEDAW and current levels of women's representation (Jacob et al., 2014); second, between CEDAW ratification and the effective political and social rights of women recognized by governments (Englehart and Miller, 2014); and, third, between CEDAW ratification and the degree of liberalization of abortion policies (Hunt and Gruszczynski, 2019).[4]

International organizations constitute the backbone of global culture (Boli and Thomas, 1999; Willetts, 2010). Women's international non-governmental organizations (WINGOs), in particular, are long-standing leaders in the formulation of global policy scripts on "women's issues" (Berkovitch, 1999; Lavrinenko, 2023). WINGOs have made a key contribution by turning gender inequity into a salient issue and popularizing policy scripts such as the creation of domestic gender machineries (True and Mintrom, 2001), gender quotas (Hughes et al., 2015) and women's legislative caucuses (Adams et al., 2019). They have also put pressure on recalcitrant governments unwilling to adopt and implement global norms on women's rights (True, 2003, 2016). Other international organizations beyond the UN and WINGOs have also been key actors in the formulation and diffusion of policy scripts on gender equality. Indeed, previous work indicates that a higher exposure to the influence of international governmental organizations, in general, also maximizes the chances of these policy scripts being transferred from the global to the domestic sphere (Adams et al., 2019; Cao, 2010). Concerning peer effects, True and Mintrom (2001) and Jacob et al. (2014) did not find consistent neighborhood effects on the adoption of gender machineries or the percentage of women's ministries, respectively. However, peer effects have been documented for many other policy areas, as they generally facilitate the peer assessment of policy effects in neighboring countries and/or scale up normative pressures to mimic a policy or institution (Adams et al., 2019; Gilardi and Wasserfallen, 2019).

Domestic factors and the adoption of gender ministries

Beyond international and global processes, two domestic factors have also received particular attention in the literature on the adoption of gender equality policies: the degree of democratization and government ideology. Democratic systems make decision-making more permeable to the influence of anti-discriminatory discourses promoted by international organizations and international policy learning (True, 2016). Improving the openness of the political system thus reduces the costs women face to mobilize in defense of their interests and increases their access to policy scripts on gender equality. In the only large-N analysis of national gender machineries conducted so far, True and Mintrom (2001) showed that democratic nations are more likely to establish these

organizations. Previous work also noted that democratic systems reduce the costs of political participation faced by lower status groups and foster a culture of inclusion which stimulates the incorporation of women into public affairs and can be associated with their substantive representation (Kittilson and Schwindt-Bayer, 2010; Krook and O'Brien, 2012; Paxton et al., 2010).

Historically, left-of-center parties have shown greater commitment to gender equality and tend to have stronger women's caucuses and feminist groups within their organizations compared to right-of-center parties—this has been specifically demonstrated in Western European countries (Kittilson, 2006). They have also provided more favorable venues for the representation of women's interests (Erzeel and Celis, 2016) and are more likely to include women in decision-making positions (Claveria, 2014; Goddard, 2021; O'Brien et al., 2015) than other types of political parties. The relationship between progressive parties and feminist, anti-discriminatory stances has also strengthened over time due to the rise of post-materialist values and the weakening of traditional, redistributive politics in national arenas (Sundström and Stockemer, 2022; Welzel, 2013).

There are strong reasons to consider that, independently from the level of democratization and the ideological orientation of government, the national configuration of gender inequalities may also affect the enactment of women's ministries. Since these ministries share the goal of achieving improvements in the wellbeing of women and/or shaping gender relations (Outshoorn and Kantola, 2007; Stetson, 1996), their establishment is likely to be affected by multidimensional gender inequalities. Indeed, gender inequality is still pervasive in contemporary societies. As documented by multiple cross-national reports, on average, women still hold a subordinate position in most domains and most countries (World Economic Forum, 2022). At the same time, the level and trends in gender inequalities and women's empowerment are not homogeneous across all areas of social life (Risman, 2018). Within a given country, women observe different degrees of subordination across domains (Desai et al., 2022; Homan, 2019). A recent report of the European Institute for Gender Equality (2022), for instance, shows that Germany displays higher political equality than most European countries but only an average level of work-related equality.

Indeed, shifts in women's empowerment differ substantially across the economic, political and social domains. Within a given country, women's empowerment may be faster in the economic than the political or social dimensions, or vice versa. In the rest of this section, we take this multidimensionality and heterogeneity in women's empowerment seriously and argue that different types of empowerment influence the likelihood of the establishment of a women's ministry separately and through disparate processes. We focus on three domains—formal politics, civil society, and the labor market—and discuss the processes triggered by each of them.

We first consider shifts in women's political empowerment. Although over the last five decades women have been consistently underrepresented in positions of political representation or leadership in most countries, this underrepresentation has not remained static. In this period, several countries have actually undergone substantial improvements in women's descriptive representation in politics,[5] which has proven to be consequential for multiple and relevant aspects (O'Brien and Piscopo, 2019). Indeed, controlling for multiple factors, women's presence in political representation is positively linked to higher social spending (Bolzendahl and Brooks, 2007), legal gender equality (Kim, 2022) and abortion rights (Asal et al., 2008).

The relationship between women's political representation and social and political change occurs through shifts in the gender balance of power and women's capacity for coordinated mobilization. An extensive body of literature asserts that the higher the number of women in a legislative body, the more attention will be paid to substantive issues of importance to women (Paxton et al., 2020; Schwindt-Bayer, 2006). Women's presence in political arena brings into public debate different preferences and priorities than their male counterparts in terms of policy decisions, speeches, or roll call votes (Clayton, 2021). As noted also by the power resources theory in political sociology

(Bolzendahl and Brooks, 2007; Huber and Stephens, 2001), changes in women's political power affect their potential to identify shared grievances and act on them collectively. As women as a group increase their organizational and political resources, they are better able to act as a group in themselves and advance their demands (Iversen and Rosenbluth, 2008; True, 2016).[6] This strengthened mobilization capacity can manifest in several ways. Women are then able to become major constituencies in state institutions such as the judicial system and public administration. This means that they are better able to leverage the state apparatuses to influence the government agenda and promote the prioritization of gender equality measures (Banaszak, 2010; Goddard, 2021).

In contexts of especially intense women's political empowerment, women are also more likely to become key constituencies in trade unions and political parties which then become more sensitive to feminist principles (Huber and Stephens, 2001). Progressive parties and unions can consequently act on these feminist principles and strive to influence public opinion, thereby raising general awareness of persisting gender inequalities. These organizations also become more likely to prioritize the adoption of institutional measures to fight diverse forms of discrimination and improve the wellbeing of women, including the adoption of gender machineries (Paxton et al., 2020; Moyer, 2013).[7] They are thus able to achieve "audience effects" that alter public opinion perceptions of women-related issues (Franceschet et al., 2012). In societies where women are politically empowered, small cliques of elite women also gain direct access to and can persuade key decision-makers (especially the head of government) to promote the adoption of gender equality policies (Childs and Krook, 2009).[8] In sum, increases in women's presence in political institutions shape women's capacity to establish women's ministries (H1).

H1. Countries undergoing increases in women's descriptive representation are significantly more likely to establish women's ministries.

Women's empowerment in civil society can also be consequential (Sundström et al., 2017). By civil society, we refer to the ensemble of networks and voluntary organizations that lie between the state and the economy and do not seek to gain direct influence on the state apparatus. Women's movements are of central importance in domestic civil society. These movements constitute networks of mainly female activists led by women and concerned with women's gendered experiences. They usually target the state in order to achieve the implementation of policies that will challenge women's subordination or at least improve women's wellbeing (Beckwith, 2013). As part of the second wave of the women's movement, since the 1960s, these networks have proliferated in many countries worldwide, with agendas focused on women's personal safety, reproductive rights, access to power, and equal opportunities for men and women, all of which have had major cultural and political consequences. Through their repeated, creative, and sometimes disruptive mobilizations, domestic women's movements have made a key contribution to the fostering of women's awareness of their subordination and linked fate.[9] In parallel to this, at elite-level, they have raised awareness of persistent gender inequities, their deleterious effects and the need to adopt policies to revert them (Stetson, 1996).

Qualitative literature has documented the institutional consequences of these mobilizations. A research program on state feminism in high-income countries concluded that "the strength of women's movement organizations is important to maintaining or strengthening women's policy agencies, not surprisingly as weaker movements cannot exert pressure on state policies" (Outshoorn and Kantola, 2007: 280; also McBride and Mazur, 2010). Since the 1970s, many middle and low-income countries have also observed significant women's movements (Basu, 2010) which laid the cultural and political groundwork for the creation of women's ministries:

H2. Countries undergoing increases in women's civil society participation are significantly more likely to establish women's ministries.

Changes in the social structure of the labor market can also set conditions that are favorable to the establishment of women's ministries. Despite partial progress toward work-related gender parity—for example, increasing the proportion of women among skilled professionals, multiple sources of gender inequality persist in national labor markets. Worldwide, women are on average still more likely to suffer from wage discrimination, fewer promotion opportunities, work-related sexual harassment, and in-job violence than men (Crotti and Zahidi, 2021; Kalev and Deutsch, 2018). This means that economically active women face substantial opportunity costs due to gender discrimination, which in turn affects their incentive structure. Indeed, classic work on gender attitudes has noted that personal experiences of subordination and discrimination incentivize economically active women to adopt feminist outlooks (Klein, 2013 [1984]). In line with this, comparative work has shown that economically active women are significantly more likely to hold gender-egalitarian attitudes than economically inactive women (Bolzendahl and Myers, 2004; Pandian, 2019).

More importantly, as the number of active women in the labor force increases, the "personal problem" of gender discrimination becomes more visible, widely shared and discussed, and more costly. Active and inactive women then have more opportunities to engage in open conversations about the personal problems posed by discrimination (Banaszak and Plutzer, 1993). Women also have more chances to encounter economically independent and assertive women who serve as role models (Rhodebeck, 1996). Furthermore, in a gender-egalitarian workforce, working-age women become collectively portrayed as conscientious and reliable workers (Seguino, 2007), which increases their employment opportunities—for example, access to high-paying jobs—and therefore the costs that gender discrimination poses for them.

In addition to shifting their incentive structure, increases in women's representation in the workforce also boost women's resources. This allows them to make their own choices, giving them real social and political alternatives (Kabeer, 1999). Hence, in contexts of rapid increases in the feminization of the workforce, women have more incentives and capabilities to establish policy and institutional measures that reverse gender discrimination and may include the creation of a women's ministry.

H3. Countries undergoing increases in the ratio of female-to-male workers are significantly more likely to establish women's ministries.

Data and methods

Construction of the dependent variables

Analyses of the global diffusion of political organizations require appropriate conceptualizations and reliable data on their establishment in each of the nation-states considered. Concerning conceptualizations, this study specifically analyzes the diffusion of women's ministries, which we define as top-level government offices—cabinet ministries or departments—that seek to improve women's living conditions and redress the discrimination and subordination of women in all social fields.

In line with previous research (Escobar-Lemmon and Taylor-Robinson, 2005; Krook and O'Brien, 2012), we operationalize this definition by considering only the organizations of ministerial rank most commonly denoted by the titles "ministry"/"minister." As regards "secretaries" and

"departments," we only consider them in cabinets where "ministries" do not predominate.[10] In terms of the ministry goals, we also follow a restrictive approach and only consider those with the terms "women," "gender," or "equality" in their title.[11] By restricting the cases to these terms, we can be certain of the centrality of gender issues in the ministry's agenda.[12]

To apply this conceptualization and identify all women's ministries, we collect and contrast information from multiple sources, which generally present information organized by officials (ministers) rather than by organizations (ministries). As a first step, after compiling the information included in the periodical *Chiefs of State and Cabinet Members of Foreign Governments* (CoS; Central Intelligence Agency, several years), we construct a database on the composition of all cabinet ministries in all independent states for one month of each year between 1970 and 2015.[13] Applying the operationalization discussed earlier produced an initial list of all cabinet-level women's ministries worldwide. The content in the CoS is sometimes inaccurate or outdated, however. We therefore triangulate this initial information with other comparative databases on government cabinets (Christensen, 2019; Döring and Manow, 2019; European Consortium of Political Research, 2019; Nyrup and Bramwell, 2020), online descriptions of country cabinets, and at least two case studies for each separate state. Where the sources provide inconsistent information, we select the most authoritative source, for example, government websites.[14]

Combining these sources, we were able to identify whether a country had ever had a women's ministry, the specific year of its enactment, and how long the ministry had been active since then. The database assembled for this project includes 198 countries.[15] After enactment, a women's ministry might evolve in two directions: (1) it could remain in place uninterrupted until the end of the observation period, as is the case in many counties (e.g. Germany); or (2) it could have been disbanded and later re-established (or not re-established). As discussed below, this two-stage process is also a relatively common situation. The multivariate analysis therefore involves two dependent variables: *first enactment* and *second enactment*. The Online Appendix includes a list with all the countries with an event and the title of the first ministry.

Independent variables

Our theoretical model stresses the potential relevance of national configurations of gender inequalities. We specifically argue that there are reasons to believe that changes in women's empowerment in major macro-fields (politics, civil society, and the labor market) may shape the likelihood of the adoption of women's ministries. To operationalize gender inequality in politics, we follow most previous research and use the level of women's descriptive representation (O'Brien and Piscopo, 2019) represented by the percentage of *women in parliament*. To capture gender equality in civil society, we utilize the *women's civil society participation index* of the V-Dem project (Coppedge et al., 2022; Pemstein et al., 2019), which combines information on the freedom of discussion for women, the participation of women in civil society organizations and the percentage of female journalists. This index has been proven to be related to country economic growth (Dahlum et al., 2022) and to shape the influence of women's political power on the infant mortality rate (Mechkova and Carlitz, 2021).

Regarding women's economic empowerment, several studies have operationalized it through the female labor force participation rate (FLFPR; Kittilson and Schwindt-Bayer, 2010; Krook and O'Brien, 2012). However, the FLFPR is sensitive to economic and social conditions—for example, higher enrolment rates in education, early retirement programs, and the economic cycle—that also affect male labor force participation (Esping-Andersen, 1999). All else being equal, increases in educational enrolment rates or reductions in the retirement age, for instance, reduce FLFPR while also affecting male labor force participation (MLFPR). For this reason, FLFPR does not in itself adequately capture women's relative economic participation.[16]

In line with the *Gender Gap Report 2021* published by the World Economic Forum (Crotti and Zahidi, 2021), we therefore operationalize women's economic empowerment through the ratio of FLFPR to MLFPR, using the term *feminization of the workforce*. This indicator captures the relative national economic empowerment of women and is not affected by the demographic, economic, or institutional conditions that affect both genders.

Since potential effects of changes in the average national level of women's empowerment on the likelihood of the enactment—or re-enactment—of a women's ministry may reflect shifts in other economic, political, and international dimensions, all models include multiple control variables. As noted earlier, international factors are also prominent in the comparative macro-level literature on women's empowerment. In the "International factors and the adoption of gender ministries" section, we note that UN-related institutions have galvanized multiple efforts to create gender equality policies. *Participation in UN meetings on women* contributed to the diffusion of best practices, discourses, and political strategies. The implementation of CEDAW has also helped legitimize gender mainstreaming and gender equality institutions. We specifically consider *CEDAW ratification* without reservations as many states ratify CEDAW without a full commitment to the principles in the Convention (Hill and Watson, 2019). The influence of other international organizations is measured through *memberships to WINGOs* and *memberships to IGOs*, respectively. The former provides an indicator of the country's embeddedness in world society and the latter of the state's participation in the world polity (Cole, 2017). We focus on WINGOs and not INGOs in general because WINGOs are more likely to transmit global norms on the status and rights of women. The most established indicator of memberships to WINGOs is the one devised by Paxton et al. (2017), which has a long historical coverage, considers memberships to more than 100 WINGS and covers more than 140 countries. However, this data source ended in 2013 and does not cover many small states. To assess potential peer effects, the models include a variable with the percentage of *neighboring countries with a women's ministry*. Missing data were imputed for all independent variables prior to the estimation of statistical models.[17]

The full models include six additional control variables related to domestic social and economic factors. Economic modernization frees up resources that can be devoted to socio-political matters. It also boosts the perception of existential security, which undermines support for traditional gender norms and enhances support for the gender equality beliefs (Inglehart, 1990; Welzel, 2013) that legitimate the adoption of policy measures aimed at fostering gender equality. All models therefore control for *gross domestic product (GDP) per capita*. The number of children that women and families have to raise may also affect women's capacity for political mobilization and the strategies of governmental agencies. Indeed, previous research has shown a negative relationship between fertility and democracy (Sommer, 2018). All models thus control for the *total fertility rate*.

Political factors have been given particular attention in large-N research on the diffusion of women's political representation and related policies. Periods of domestic or interstate violence could also be related to the adoption of women's ministries. At the end of military conflicts, international actors in peacekeeping operations attempt to foster gender equality as a mechanism to deflate persistent tensions. As a result, they exert pressure on post-conflict settlements and governments for the adoption of gender equality policies (Bush, 2011; Krook, 2006). Since the conflict may be domestic or international, we control for both through *societal and interstate violence*.

Improvements in the democratic nature of the political system and the increased presence of left-wing elected officials in government are expected to foster women's political empowerment (Htun and Weldon, 2012). We thus control for *democracy* and *left-wing head of government* (HoG). We also explore the role of cabinet size. When distributing offices, the number of available positions is crucial (Alozie and Manganaro, 1993). Increases in *cabinet size*, for instance, may create a window of opportunity for the establishment of new ministries such as a women's ministry. The Online Appendix includes formal definitions and sources for all independent variables.

Analytical strategy

Concerning the analytical strategy, we leverage recent methodological advances on the estimation of fixed effects (FE) models for rare and dichotomous events (Cook et al., 2020). Methodologists and experts on macro-level political change increasingly concur that FE models provide substantial advantages over more conventional random effects models (Collischon and Eberl, 2020).

By restricting tests to within-case, longitudinal variation, FE models prevent (otherwise likely) biases in parameter estimates caused by correlations between unobserved, time-constant unit effects and observed explanatory variables. Unfortunately, macro-level analysis of rare events has not benefited from these desirable properties of FE models due to concerns about the "sample selection" problem—that is, the fact that many right-censored units/countries may not observe an event and do not therefore enter the log likelihood in the FE framework (Gao and Shen, 2007; King and Zeng, 2001). This sample bias causes an inflated average estimate of the event risk, which in turn produces biased marginal effect estimates of the predictors.

These analytical challenges also affect the database utilized in this study, since not all countries adopt a ministry and those that do, do so only once or twice. This leaves the proportion of events at 2.6 percent, whereas rare events are usually defined as below the 8 percent threshold (King and Zeng, 2001). To overcome the sample selection problem in the analysis of rare events, while also leveraging the properties of FE models, Cook et al. (2020) recently designed a new penalized maximum likelihood fixed-effects estimator (PML-FE). The PML-FE estimator achieves this by modifying the score function of the log likelihood, wherein each event-experiencing unit contains a separate intercept and those that do not have an event share a common intercept. Through this procedure, the full sample is maintained and more accurate estimates for the baseline event risk are produced. This innovative solution has been proven to outperform the usual alternatives such as pool, random effects, and unconditional fixed effects.[18] For example, the PML-FE estimator has recently been successfully utilized to explain terrorist group formation (Tschantret et al., 2021).[19]

Given the rare nature of the creation of women's ministries, we follow Cook et al. (2020) and utilize the PLM-FE estimator to predict the probability of first and second adoptions. In addition to the main models, we conduct supplementary analyses to assess the stability of the results. First, we re-estimate the models, using both conditional and unconditional fixed-effect regressions (see Table A2). The results are mainly consistent. As expected, however, the conventional models produce inflated estimates of predictor effects. Second, Tables A3 and A4 present the results using unstandardized variables.

Results

Descriptive results

Quantitative analyses of the diffusion of policies or organizational forms are preconditioned on the number of adoptions and the concentration of those adoptions. If adoption events are too sparse or heavily concentrated in certain polities, multivariate analyses are not warranted. We therefore begin our analysis by examining descriptive patterns in the diffusion of women's ministries. The first adoption of a women's ministry occurred in 1975 in Mauritius. Since then, a clear wave of adoptions has taken place. The wave shows an inverted U-shape with a peak in the 1990s, indicating that 10 events took place in the 1970s, 18 in the 1980s, 44 in the 1990s, 23 in the 2000s, and 12 in the 2010s (Figure 1).

The top map in Figure A1 depicts the decades of the first event in every country that has adopted a women's ministry. The map first makes it clear that the decline in the number of events occurring
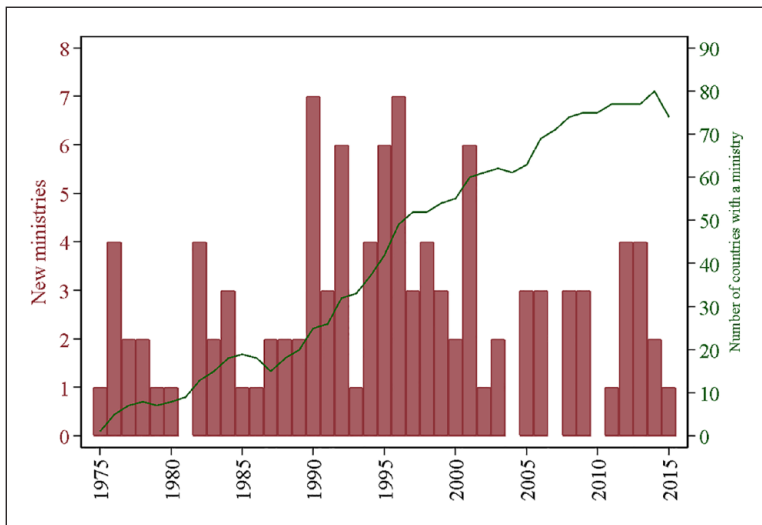
Figure 1. New women's ministries and number of countries with a ministry, 1970–2015.

since the 1990s can only be partially attributed to a gradual reduction in the number of countries at risk of an event, as the number of countries that had never adopted a women's ministry still remained substantial in 2015. The map also points to a clear geographical concentration of events. Whereas events have been rare in Central and East Asia and the Middle-East, many events have occurred in South-East Asia and especially in Africa. The African continent clearly stands out for its pioneering role and widespread adoption of gender machineries with the highest political status. Many African nations were the earliest adopters; for example, Ivory Coast and Central African Republic (1976), Togo (1977), Burkina Faso (1978) and Zimbabwe (1980), as well as Equatorial Guinea, Chad, Grenada and Burundi (1982). By 2015, as many as 83.93 percent of all African nations had at some point had a women's ministry. By contrast, the proportion of countries that had at some point had an event is lower in the Americas (54.29%), Europe (34.78%), and Asia (29.17%). Due to the overall number of events and the geographic breadth of this process, we can confidently speak of a global wave of women's ministry adoptions from the mid 1970s to the present day.

What are the general characteristics of these ministries? An analysis of the titles accompanying these first enactments gives us interesting clues as to the nature of these organizations. Overall, 103 (96.26%) are designated as formal ministries and four (3.74%) as departments, secretariats, and other institutional forms. More interestingly, the terminology used to name these new ministries is relatively diverse and has actually evolved over time. Among all first events, 91 (85.05%) include the term "women" in their title, 12 the term "gender," and 6 the term "equality."[20] In fact, the term "gender" only appeared from the mid 1990s onwards—and especially in the 2000s—possibly signaling a growing awareness of the relational foundation of women's status. Many women's ministries are ultimately multipurpose, with as many as 71 (66.36%) also tasked with other goals. Among these additional goals, the most common is the protection of children, young adults or families. 35 (49.26%) of the multipurpose ministries also include these terms in their titles.

Not all first events led to the continuation of this organizational form. As we mentioned earlier, a non-negligible number of women's ministries have been disbanded since their creation, suggesting the need to consider the conditions that lead to their re-adoption. The database constructed for this project indicates that 55 (51.40%) of all women's ministries were actually disbanded between

their enactment and 2015. Of those 55 countries, 35 (63.64%) then re-established the women's ministries, leading to a second event. The lower map in Figure A1 indicates the distribution of countries that were at risk of a second event and actually adopted a second event. It shows that most of these second events occurred in Africa.

Multivariate results

Having documented the existence of a real wave of policy diffusion, it is now possible to assess the country-level determinants of this process. What conditions hasten the adoption of women's ministries? To answer this question, we structure the analysis in two steps. We first examine the determinants of the first adoption. Thereafter, in a second step, we focus on the countries that disbanded the ministry and examine the determinants of a second adoption. For both types of events, models 1–3 are baseline models with three variables testing H1–H3, model 4 includes all international factors, and a final model 5 includes all 14 factors. It is important to keep in mind that the inclusion of FE affects the interpretation of parameter estimates. Rather than reporting the association between the overall level of independent variables and the existence of an event, the models below report the association between longitudinal (within-case) changes in independent variables and the existence of an event.

In short, the adoption of women's ministries has a multidimensional foundation. A complex mix of economic, political, and international factors accounts for both events. Models 1–3 indicate positive bivariate associations between, on one hand, *women in parliament, women's civil society index*, and *feminization of the labor force* and, on the other hand, the first adoption of a women's ministry. This preliminary evidence is consistent with the three hypotheses mentioned earlier. Due to country FE, the association between these three factors and the outcome cannot absorb the influence of any form of time-invariant factors—for example, world region, year of independence, or colonial past. That being said, the association between within-case changes in those factors and the outcome may still absorb the influence of shifts in other socio-economic, political, and international conditions. For this reason, models 4 and 5 consider international and all factors, respectively.

Model 4 (Table 1) focuses on the role of international factors, which have been given extensive attention by previous research on women's substantive representation and gender equality policies. *CEDAW ratification* and *memberships to WINGOs* turn out to be unrelated to the establishment of a women's ministry. However, three international factors are strongly related to the adoption of these ministries. In model 4, a country's *memberships to IGOs* and the *percentage of neighboring countries with a women's ministry* are both positively significantly linked to the outcome. *Participation in UN meetings on women* is negatively significantly related to the outcome.

So far, all three domestic dimensions of gender inequality and three international factors are significantly related to women's ministry adoption. However, these factors may absorb the influence of other domestic political or socio-economic factors. To address this possibility, the full model 5 includes all 14 independent variables. Including these other domestic dimensions, four political and one demographic factor prove having a non-significant association. Changes in the level of democratization, violent conflicts, presence of left-of-center HoG and cabinet size are all unrelated to the outcome. This is also the case for changes in fertility rates.

Controlling for five international and six domestic political and socio-economic factors, *women's civil society participation* is also rendered non-significant. Yet, *women in parliament* and *feminization of the labor force* still have a positive and significant association with the outcome. Increases in the domestic, political, and economic empowerment of women hasten the adoption of a women's ministry. In light of Table 1, it is clear that the adoption of women's ministries has

Table 1. Penalized maximum likelihood fixed effects models with determinants of the first event.

	M1	M2	M3	M4	M5
Women in parliament (t–1)	1.499***				0.842*
	(0.299)				(0.410)
Women's civil society participation (t–1)		1.295***			0.041
		(0.298)			(0.508)
Feminization of the labor force (t–1)			8.302***		6.635**
			(1.580)		(2.096)
Memberships to IGOs (t–1)				0.114**	0.106**
				(0.037)	(0.035)
CEDAW ratification without reservations (t–1)				0.443	0.445
				(0.506)	(0.526)
Memberships to WINGOs (t–1)				1.018	0.904
				(0.674)	(0.682)
Participation on UN meetings on women (t–1)				−0.816**	−0.640+
				(0.298)	(0.365)
Percentage of neighboring countries with a women's ministry (t–1)				0.932***	0.924***
				(0.227)	(0.236)
GDP per capita (t–1)					3.890+
					(2.203)
Total fertility rate (t–1)					−4.423
					(3.209)
Societal and interstate violence (t–1)					−0.534
					(0.734)
Democracy index (t–1)					0.049
					(0.706)
Left-of-center head of government (t–1)					0.456
					(0.563)
Cabinet size (t–1)					0.046
					(0.036)
Constant	−12.781***	−10.601***	−14.894***	−25.243***	71.953**
	(1.672)	(1.500)	(1.924)	(3.757)	(24.532)
Bayesian Information Criterion	1590.461	1625.233	1600.899	1472.287	1477.148
log likelihood	−344.8011	−362.1874	−350.0203	268.5552 −	232.3773
Observations	5322	5322	5322	5322	5322

Notes: CEDAW: Convention on the Elimination of All Forms of Discrimination against Women; GDP: Gross domestic product.
$^{+}p < 0.1$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

multidimensional foundations. Socio-economic, political, and international factors play a role in the diffusion of this organizational form. This evidence is consistent with H1 and H3.

Since several variables predict the adoption of women's ministries, it is helpful to assess which ones have a stronger association with the outcome and whether the association of the structural factors is substantial or not. For this purpose, we standardized the coefficients in model 5 (Table 1). The largest association is that of *memberships to IGOs*, followed by *feminization of the labor force, percentage neighboring countries with women's ministries*, and *women in parliament*.

Models 1–5 in Table A3 explore the determinants of the second event. The results of this analysis are less relevant than those of the first event, as the risk of having a second event is restricted to

countries that (1) had the first event and (2) subsequently disbanded the ministry during the period of observation. Indeed, as mentioned earlier, only 55 countries were ever at risk of a second event. However, assessing the predictors of the second event is informative as it could point to heterogeneity in the determinants of the first and second events. The evidence actually provides indications of such heterogeneity. Three factors that were significantly associated with the first event—*women in parliament, feminization of the labor force*, and *memberships to IGOs*—prove to be unrelated to the adoption of the second event. However, the *percentage of neighboring countries with a women's ministry*, which was a significant determinant of the first event (Table 1) also proves to be a significant determinant of the second event (Table A3). The second event clearly has different determinants than the first one.

The estimation strategy used in this study, based on penalized maximum likelihood fixed effects (PLM-FE), is still uncommon in large-N analyses of policy diffusion and could affect the findings. We therefore estimate a series of sensitivity analyses with more conventional strategies. In particular, we estimate a country fixed-effects logit model and a conditional logit model with country fixed effects, in both cases for the first (and most important) event. These are included in Table A2. The results are partially consistent with those presented in model 5 in Table 1. Using FE logistic or conditional logistic models, the first event is (also) predicted by *women in parliament, feminization of the labor force, memberships to IGOs*, and *percentage of neighboring countries with a women's ministry*.

Discussion

Over the last four decades, women's ministries have gradually become a worldwide fixture in national governments. Through their institutionalization, they have also emerged as some of the most relevant actors in the promotion of gender mainstreaming and, more generally, gender equality worldwide. Seeking to address an important gap in the gender politics literature on this process, our study examines the diffusion of women's ministries worldwide. In particular, we assess the country changes over time that hastened the first or second adoption of this ministerial form in almost all independent states from 1975 to 2015. Our multivariate analysis with country fixed effects yields four main findings.

First, the evidence points to a clear global wave in the diffusion of women's ministries. Despite clear difficulties for gender equality policy issues to be recognized by the executive (e.g. Annesley et al., 2019), as many as 107 independent states created women's ministries between 1975 and 2015. The number of adoptions increased gradually from the mid 1970s onwards and peaked in the mid 1990s, with many adoptions occurring since then. Although particularly common in African countries, the adoption of women's ministries is now a worldwide phenomenon. Moreover, once they have been established, women's ministries display substantial continuity. This descriptive evidence indicates that these top-level gender machineries have been institutionalized at cabinet-level by the governments of most independent states, which could have major consequences for the domestic field of gender politics. The presence of these organizations could accelerate the adoption of gender equality policies such as gender quotas, laws on domestic violence, or anti-discrimination policies. Future work could explore these possible consequences.

Second, two major political factors—the level of democratization and the ideological orientation of governments—prove to be unrelated to the adoption of women's ministries. Although previous research has documented that democratization (Kittilson and Schwindt-Bayer, 2010; Krook and O'Brien, 2012) and left-of center governments (Claveria, 2014; Goddard, 2021; O'Brien et al., 2015) facilitate the incorporation of women into public affairs, neither of these two dimensions are robustly associated with the establishment of women's ministries. This partial inconsistency with previous research on gender and politics may be due to the fact that the creation of these ministries

constitutes a qualitatively different event from increases in women's descriptive representation or the adoption of gender quotas. The creation of a women's ministry as a new top-ranking bureaucracy demands a particularly significant short and medium-term fiscal commitment. The higher sunk costs of these adoptions make them particularly high-stakes policy events with their own causal relevance.

Third, among all the considered international factors, country embeddedness in the world polity is robustly associated with the outcomes: countries that underwent larger increases in their memberships to IGOs were significantly more likely to adopt these ministries. This finding indicates that IGOs may be especially able to transfer normative demands for increases in gender equality from the global polity arena to domestic arenas. Further research could explore which particular IGOs may be especially prone to exert this influence. Moreover, the presence of this ministry in neighboring countries is also positively related to this political event. These findings may suggest that political elites tend to focus on nearby areas when assessing the perceived policy and political advantages associated with the adoption of women's ministry.

Fourth and most importantly, the multidimensional domestic configuration of gender inequalities proves to be related to these policy events. Gender equality in domestic civil society is not robustly related to the outcome. However, the level of domestic political and economic gender equality exerts independent and positive effects on ministry adoption. All things being equal, increases in the descriptive political representation of women hasten the first adoption of this organizational form. This is consistent with previous work documenting the self-reinforcing impact of women's presence among the political elite (Paxton et al., 2006) and its association with gender equality policy adoptions among neighboring countries (Hughes et al., 2015). As women increase their positional power, they are better able to foster perceptions that women share a linked fate and promote the creation of gender machineries.

Moreover, countries undergoing rapid increases in the feminization of the labor force are more likely to adopt a women's ministry. Importantly, all models were estimated with country fixed effects, which means that neither of those two factors can absorb the effect of time-constant unobserved factors such as the country's geographical location, colonial history, or cultural background. Strictly structural conditions, such as the overall balance of economic power between genders, therefore have an important bearing on the adoption of the most powerful forms of gender machineries. This finding is in line with our structuralist theoretical approach, which establishes that the feminization of the labor force creates favorable conditions for the creation of women's ministries. Rapid feminization of the labor force revolutionizes women's incentives and capacities for collective action. As the proportion of female workers grows, women are increasingly perceived as active labor market participants. New job opportunities then open up for them, boosting the opportunity costs they face for gender discrimination in the labor market. Rapid feminization of the labor force also facilitates acting on a revolutionized incentive structure by improving the collective sociopolitical economic resources available to women.

This study has limitations. First, the capacities and responsibilities of women's ministries vary significantly among the countries we considered, and our database does not allow us to address this heterogeneity. In addition, political parties and social movements may change their demands concerning women's rights or gender equality policies over time. Furthermore, these organizations might have shifted the targets of their demands in recent years due to the growing debate on trans-exclusionary issues in national and international contexts. This may influence how countries establish women's ministries in the coming years. Second, the results may be affected by reverse causality or bidirectional causality between independent variables. Third, the analysis does not explain the causes of the dissolution of women's ministries. Future research could address this different but highly relevant question.

The results noted earlier have a clear and important theoretical implication. Comparative studies with a global scope on the political empowerment of women tend to focus on the role of political or transnational factors and commonly overlook the role of heterogeneous domestic configurations of gender inequalities (Hughes et al., 2015; Kittilson and Schwindt-Bayer, 2010; Paxton et al., 2006). However, our study demonstrates that shifts in two different—political and economic—dimensions of these domestic configurations shape major policy events such as the creation of women's ministries. Therefore, these results underpin the relationship between descriptive and substantive women's representation. Future work could continue to explore how different dimensions of domestic gender inequality regimes affect the diffusion of other policies. Future work could also explore the domestic characteristics that shape the influence of gender inequality regimes on the adoption of gender equality policies.

Moreover, the evidence of this study indicates that a socio-structural perspective sheds substantial explanatory light on relevant macro-level developments in the establishment of women ministries. Structural conditions such as the gender composition of the labor market, demographic trends, or predominant networks constitute social facts with significant relevance to behavioral and cultural dynamics, even when agents are not conscious of their existence or influence (Durkheim, 2014 [1895]). Changes in these structural conditions shape the incentive structure of different groups and therewith their interest in social and political change. Shifts in societal characteristics also affect the relative power of certain groups when, for instance, they become proportionally more numerous. A socio-structural perspective should therefore be considered as a suitable theoretical alternative to the more established institutional and action-based perspectives of global cross-national analyses of gender politics.

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Supplemental material

Supplemental material for this article is available online.

Notes

1. We define women's ministries as top-level governmental offices—cabinet ministries or departments—that seek to improve women's living conditions and redress the discrimination and subordination of women in all social fields.
2. The influence of this ministry/minister within the cabinet can vary across countries. While previous studies on coalition governments acknowledge the veto power that they may wield (Müller and Strøm, 2008; Thies, 2001), the effectiveness of this power may diverge across different countries. The factors that can affect this variation include the level of democracy, the type of government, the degree of territorial decentralization, and the party influence on each country. For instance, in New Zealand, the Ministry of Women's Affairs holds a prominent position within the government (Curtin and Teghtsoonian, 2010), whereas in Ghana, this ministry is subject to more scrutiny (Tsikata, 2009). Furthermore, the powers and budget allocated to this specific ministry may also differ from one country to another. This divergence implies that gender ministries might hold less central roles in policy-making, resulting in fewer opportunities for engaging in the substantive representation of women. Consequently, they could become more

susceptible to the effects of a ministerial reshuffle (Franceschet et al., 2017). However, it is anticipated that these ministries will serve as substantive representatives for specific social groups and play a vital role in shaping a government's policy priorities and organizing interactions among ministers across different countries. The establishment of such ministries therefore highlights the significance of addressing representation in this domain.

3. The gender ministry, far from merely being a "particular women's issue," can be a supporter and promoter of gender mainstreaming—even more than previous party or legislative institutions. In fact, as a gender ministry holds ministerial rank, it can boost other gender mainstreaming proposals, fast-tracking them for discussion in cabinet meetings.

4. However, other studies have found no relationship between Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) ratification and the adoption of gender mainstreaming bureaucracies (True and Mintrom, 2001) and women's representation (Paxton et al., 2006).

5. Women's descriptive representation refers to the degree of similarity between representatives and the represented regarding gender. This involves the numerical presence of women in political representation (such as parliaments or cabinets), as well as their distinctive characteristics.

6. Women are not a homogeneous, but rather a heterogeneous group. Gender intersects with various characteristics such as race, class, ideology, and sexual orientation, leading to diverse political perspectives that are encompassed within the representation process. Consequently, this diversity can give rise to conflicting interests among them (Celis, 2012). Nevertheless, the shared experiences of women are likely to result in commonalities in their perceived priorities (Mansbridge, 1999; Phillips, 1995; Sapiro, 1981), which may also contribute to gender-based substantive representation. This study aims to investigate the circumstances under which women in positions of power may influence the adoption of this ministry.

7. Nonetheless, there is a lively debate about what substantive representation means. Women's issues are often defined as either those traditionally associated with women (such as childcare and the family), or those with a "feminist accent" (such as abortion or domestic violence; Celis and Childs, 2012). However, simply having more women in office does not automatically bring about substantive representation, as women do not speak with a single voice—"women" are not a homogeneous but a heterogeneous group— and party discipline may force female deputies to vote in a specific direction (Paxton et al., 2007). In a nutshell, although this study focuses on a specific substantive representation of "gender ministries," it is important to show that women's issues or concerns and interests are both wide and rich categories that tend to interact with an intersectional perspective.

8. Previous scholars have argued that the substantive representation of women is more likely to materialize when a "women's critical mass" is achieved—referring to the numerical presence of women in legislatures. This critical mass typically constitutes a specific percentage of a legislature, often estimated to be between 15 percent and 30 percent (Childs and Krook, 2006). Nevertheless, reaching such a critical mass may not be essential to drive change across various political domains. Rather, the emphasis lies in adopting a strategic standpoint (Childs and Krook, 2006). Consequently, it can be posited that a select few women occupying particular positions within legislative bodies or the executive branch may emerge as pivotal agents who wield substantial positional influence.

9. Linked fate is used to describe when members of an identity group—in this case, women—elevate group interest above their own individual interest. That is, individuals who perceive their fates as closely linked to those of other in-group members are posited to be more conscious of the group's interests as a whole when making political decisions.

10. We therefore exclude auxiliary or subsidiary offices corresponding to deputy, delegate, state, or vice-ministers of gender equality, as well as commissions, councils, institutes, or agencies specialized in gender relations, as they do not usually attend regular cabinet meetings (De Winter, 1991; Woldendorp et al., 1998). Vice-presidents with a focus on women or gender issues are also defined as women's ministries.

11. Concerning ministries of equality, we only consider those that are mainly focused on gender equality.

12. While the responsibilities of these ministries may differ among countries, the purpose of this study is not to analyze the actions or policies they may undertake. Instead, the study focuses on understanding the factors that account for the establishment of these ministries. One of the advantages of only examining their creation is that it allows cross-national and over-time comparisons.

13. Our data collection process began prior to the publication of the WhoGov source (Nyrup and Bramwell, 2020). We select March because it is the month for which we were able to find the largest number of CoS reports.
14. The information used and preferred for each country is included in a 200-page report, which is available upon reasonable request.
15. If a country became independent after 1970, it enters the analysis in the official year of independence. If a country was disbanded after 1970, it stops being at risk of an event.
16. For an exception, see True and Mintrom (2001).
17. Imputation was performed using the Multivariate Imputation by Chained Equations (*mice)* package in R. Specifically, 2510 multiple imputations were carried out, and the imputation method used was predictive mean matching (*pmm*). For more information on how this algorithm works, please refer to this link: https://cran.r-project.org/web/packages/mice/mice.pdf.
18. For a comprehensive description of the model's development and evaluation, see Cook et al. (2020).
19. All models were estimated with the R package "brglm."
20. Two ministries include both terms: "women" and "gender."

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