

Aleksandr Grigoryan and Knar Khachatryan, American University of Armenia  
September 2021

# Female Representativeness and Covid-19 Policy Responses: Political Representation and Social Representativeness



**FREE  
NETWORK**

POLICY  
PAPER SERIES

## Abstract

There is anecdotal evidence that countries with female leadership in policymaking are more efficient in combating the Covid-19 pandemic. This paper studies whether countries with high female representativeness in political and social layers respond differently to the Covid-19 outbreak. We explore patterns at a cross-country level, which enables us to consider the variation of gender implicated institutions. Our findings indicate that it is women's social representation, rather than female political leadership, that has the potential to capture cross-country variation in Covid-19 policy responses. Our study confirms that well-functioning and effective institutions are not established from the top-down but rather from the bottom-up.



## Introduction

In light of the Covid-19 outbreak and the resulting actions developed and implemented by countries worldwide, questions have been raised about government policy responses and what can trigger them. The pandemic brought forward the need for measures that help mitigate the spread of the virus such as hand washing, reduced face touching, face mask policies, and physical distancing. In many countries, the implementation of lockdowns and social distancing measures had a large impact on employment, including reductions in working hours, furloughs, and work from home arrangements (Brodeur et al., 2020; Coibion et al., 2020; Gupta et al., 2020). There are notable concerns about the potential damage non-pharmaceutical interventions can inflict on economies and labor markets (Andersen et al., 2020; Kong and Prinz, 2020). Further, the implementation of these measures requires certain institutional and individual behavioral changes. While some countries were successful in developing and implementing policy responses that addressed the challenges of the pandemic, others have experienced considerable difficulties.

There is anecdotal evidence suggesting that countries with female leadership in governmental policies are more efficient in combating the Covid-19 pandemic. Several articles from prominent media outlets, such as [CNN](#), [The Conversation](#) and [Forbes](#), hypothesize that female leaders are systematically better at managing the pandemic and that this divergence can be attributed to gender differences in management style and risk-taking behavior.

This policy paper explores whether countries distinguished by higher female representation in government policies, both in development and implementation, responded differently to the Covid-19 outbreak, and if so, how the response differed from other countries. For this purpose, we identify two layers of female representation: political representation and social representativeness. The layer of *political representation* considers the role of women's representation in public policy design and implementation at the top level of executive and legislative institutions. *Social representativeness* captures women's representativeness in different layers of society and spheres of life. It reflects social norms, legal inequality between men and women in different spheres of private, economic, and business life, as well as realized gender inequality, e.g., in labor market participation, education, or local leadership.

With respect to *political representation*, we address the question of whether countries distinguished by a higher female representation at top executive and legislative levels differ in terms of policy responses to Covid-19. With respect to *social representativeness*, we aim to capture the variation in these responses that may originate from differences in the expected reaction of the public, which in turn is driven by women's representativeness in different layers of society. We derive evidence-based conclusions capturing the role of female leadership at the country's executive and legislative level, as well as the role of gender representativeness in other layers and institutions of society.

The motivation for this research stems from the extensive literature on differences in values and social attitudes between men and women. For example, women have been shown to be more trustworthy, public-spirited, and likely to exhibit 'helping' behavior (Eagly and Crowley, 1986), vote based on social issues (Goertzel, 1983), score better on 'integrity tests' (Ones and Viswesvaran, 1998), take stronger stances on ethical behavior (Glover et al., 1997; Reiss and Mitra, 1998) and behave more generously when faced with economic decisions (Eckel and Grossman, 1998). Thereby, one may ask to which extent these differences transmit to public policies in societies where women are better represented, either politically or socially. While our study primarily concerns Covid-19 policy responses, we discuss other related literature on the relationship between women's representativeness and public policy in the next section.



Our analysis shows that it is the women's social representativeness layer, which can explain government reactions to the Covid-19 pandemic. This goes in line with the institutionalist literature, suggesting that more a gender-balanced character of institutions translates into policy measures and related outcomes. With this finding, our study suggests further evidence on the central role of institutions. Consistent with the existing evidence, we claim that well-functioning and effective institutions are not established from the top-down, but rather from the bottom-up (Easterly, 2008; Dixit, 2011; Greif, 2006). In such institutions, women's participation in labor markets, businesses, and other spheres is essential as these are factors that distinguish countries in their response to the pandemic. While the evidence provided is suggestive, it opens further avenues for studies to assess causal relationships.

## Covid-19 Policy Measurements

To conduct our analysis, we collect data from a number of different sources. For data on the Covid-19 situation and government policy responses, we use the [Our World in Data](#) portal. This online platform compiles a number of data sources, most of them updated on a daily basis. Statistics on female participation and leadership is retrieved from the World Bank and UNDP. Summary statistics of the variables are reported in Table A1 of the Appendix.

The policy response variables are based on a number of different measures implemented by national governments. These are aggregated into three composite indices: *Stringency*, *Containment & health*, and *Economic support*. (The index methodology can be found [here](#).) We present the components of the three indices in Table 1 and a detailed description of the policy measures and their scoring in Appendix C.

As seen in Table 1, the Stringency and Containment & health indices have some common dimensions; containment & closure policies (C1 - C8) and public information campaign (H1). Both are rescaled to a value from 0 to 100 (100 = strictest).

The Economic support index records measures such as income support and debt/contract relief and does not share any common dimensions with the other two policy response indices. The scale of the index also ranges from 0 to 100 (100 = full support).

The extent of heterogeneity in government policy responses across countries is illustrated in Figures 1 – 3. While containment and closure policies are stricter in many Asian and Latin American countries, economic support is more extensive in many European countries, Canada, New Zealand, and few other countries.



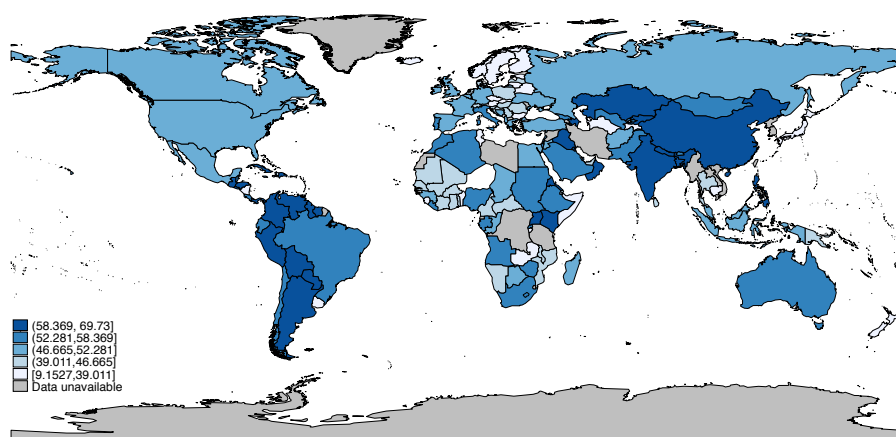
**Table 1.** The structure of the Covid-19 policy measurements.

		Stringency index	Economic support index	Containment & health index
	Number of dimensions $k$	9	2	13
	Index name			
<i>Containment and closure policies</i>				
C1	School closing	x		x
C2	Workplace closing	x		x
C3	Cancel public events	x		x
C4	Restrictions on gatherings	x		x
C5	Close public transport	x		x
C6	Stay at home requirements	x		x
C7	Restrictions on internal movement	x		x
C8	International travel controls	x		x
<i>Economic policies</i>				
E1	Income support		x	
E2	Debt/contract relief		x	
<i>Health system policies</i>				
H1	Public information campaigns	x		x
H2	Testing policy			x
H3	Contact tracing			x
H6	Facial Coverings			x
H7	Vaccination Policy			x

*Note:* Categories and assigned values of policy measurements are in Appendix C.

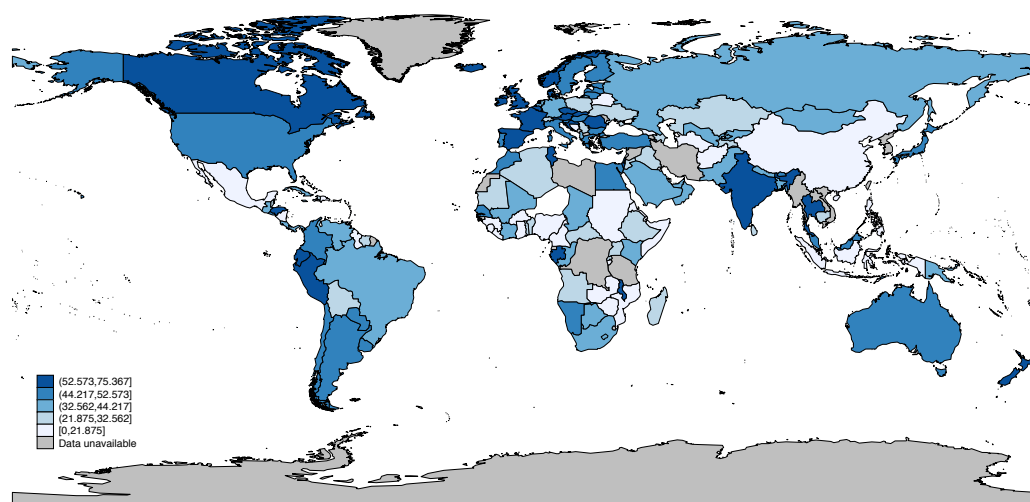


**Figure 1. Stringency Index**



**Note:** A choropleth map shows countries/territories by their Stringency index score, based on data collected from the portal of <https://ourworldindata.org/policy-responses-covid>. Countries are grouped into five groups (quantiles), from the lowest to the highest values of the index.

**Figure 2. Economic support index.**

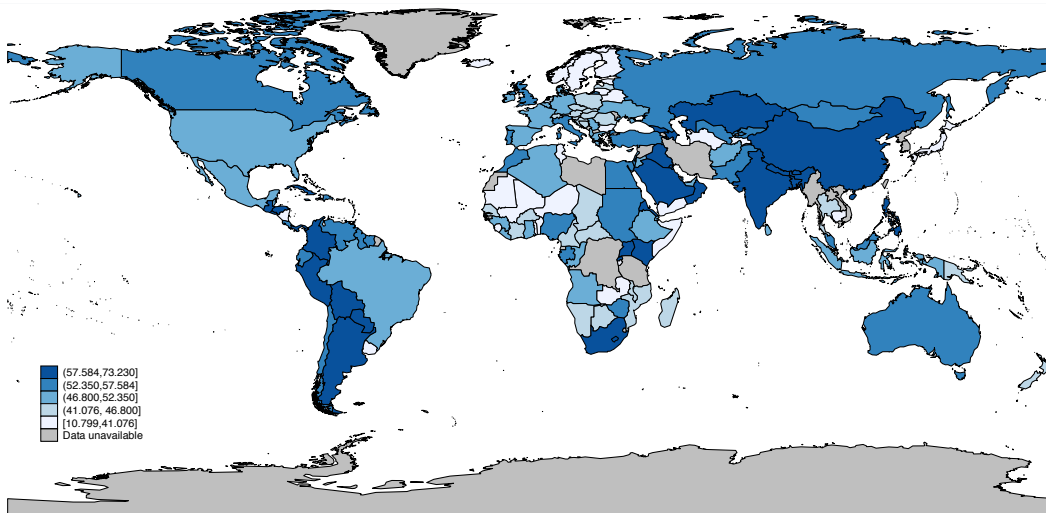


**Note:** A choropleth map shows countries/territories by their economic support index score, based on data collected from the portal of <https://ourworldindata.org/policy-responses-covid>. Countries are grouped into five groups (quantiles), from the lowest to the highest values of the index.





**Figure 3.** Containment & health index.



**Note:** A choropleth map shows countries/territories by their Containment and health index scores, based on data collected from the portal of <https://ourworldindata.org/policy-responses-covid>. Countries are grouped into five groups (quantiles), from the lowest to the highest values of the index.

## Female Representativeness: Layers and Indicators

Multiple studies in economics and political science suggest that the gender of public officials shapes policy outcomes (Chattopadhyay and Duflo, 2004; Iyer et al., 2012; Svaleryd, 2009). Evidence suggests that increasing the number of women in higher ranks of public administration (legislative bodies and ministries) has a substantial impact on the political office and policymaking (Borrelli, 2002; Davis, 1997; Reynolds, 1999). On the other hand, a number of studies demonstrate that gender has no association with policy outcomes (Besley et al., 2007; Besley and Case, 2003; Bagues and Campa, 2021). The role of the institutional setting and environment can, thus, be decisive in this regard. Women are also found to be more concerned about social policy issues and prefer higher social spending than men (Lott and Kenny, 1999; Abrams and Settle, 1999; Aidt and Dallal, 2008). Further, women are more likely to use a collective or consensual approach to problem and conflict resolution rather than an approach founded on unilateral imposition (Rosenthal, 2000; Gidengil, 1995).

In our study, the political representation layer is measured as female leadership at a country's executive level (representation in government cabinets) and participation at the legislative institution (parliament) level. To assess this, we consider the following indicators: 1) the presence of a female president or prime minister and proportion of women in ministerial positions, and 2) women's representativeness in legislative bodies measured as the proportion of seats held by women in national parliaments. The variation of these indicators across countries is illustrated in Figures B4 – B6 in the Appendix.

Our approach to social representativeness is in line with social role theory. This framework provides a theoretical explanation of a structural approach to gender differences (Eagly, 1987; Eagly and Karau, 2002; Wood and Eagly, 2009). It claims that men and women behave according to stereotypes associated with the social roles they occupy, and these differences can, in turn, influence the role of women in local governance and leadership. In line with other research on gender, the social role theory proposes a rigorous framework for analyzing the gendered aspect of government organizations. For instance,



evidence shows that women tend to be more collaborative and democratic, hence demonstrating a more caring and community-oriented behavior (Eagly and Johannesen-Schmidt, 2001).

The gender aspect of local governance indicates that the personal preferences and opinions of leaders predominate and shape policymaking (Besley and Coate, 1997). Female leaders (including municipality heads) are more inclined to favor the inclusion of citizens in the decision-making process (Fox and Schuhmann, 1999; Rodriguez-Garcia, 2015), implying that the society is a more informed and engaged stakeholder in the public policymaking (Ball, 2009). Given that municipalities are taking on a greater and more interactive role in citizens' well-being, they become a key channel in reinforcing trust in government. Furthermore, the literature finds an interrelationship between female voters and government outcomes, whereby women's enfranchisement affects government size and spending (Lott and Kenny, 1999; Miller, 2008, Aidt and Dallal, 2008). As such, this can lead to improvements in government outcomes and policy effectiveness. The evidence from Bloomberg's Covid-19 Resilience Ranking suggests that success in containing Covid-19 while minimizing disruption appears to rely more on governments fostering a high degree of trust and societal compliance.

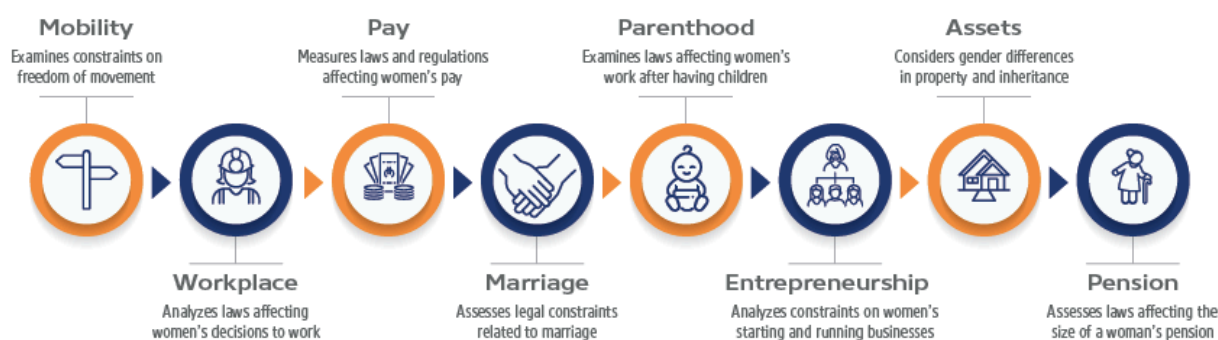
Furthermore, the patterns of gender relations in societies reflect formal and informal institutional rules and policies. Gender equality enhances good governance and helps to further improve relationships between government and citizens (OECD 2014). Similarly, Elson (1999) argues that labor markets are structured by practices, norms, and networks that are "bearers of gender". Societies with better legal frameworks for women have more balanced gender participation in labor markets, governance, and leadership, along with more equal gender roles and less gender-biased stereotypes. We anticipate that better representation of women in policymaking in such societies is also reflected in the choice and effectiveness of Covid-19 policy measures.

Building on the above theories explaining the relevance of women's representativeness in diverse societal layers for policy development and implementation, we identify three indices that have the potential to capture the effect of social representativeness - Women, Business and the Law index (WBLI), Gender Development Index (GDI) and Gender Inequality Index (GII). The WBLI is composed of eight indicators, covering different areas of the law related to the decisions women make at various stages of their career and life. These indicators include mobility, workplace, salary, marriage, parenthood, entrepreneurship, assets, and pension. Hyland et al. (2020) show that, globally, the largest gender inequalities are observed in the areas of pay and parenthood. That is, women are most disadvantaged by the legal system when it comes to compensation and how they are treated once they have children. The index scales from 0 to 100 (100 = equal opportunities). The diagram in Figure 3 illustrates how the components of the WBLI index measure key activities of economic agents throughout their life.





**Figure 4.** The linkages of 8 indicators in Women, Business and the Law index (WBLI)



Source. Women, Business and Law, 2020. World Bank Group.

The second index, the GDI, measures gender inequality in the achievements in three basic dimensions of human development: Health, measured by life expectancy at birth; Education, measured by expected years of schooling for children and mean years of schooling for adults aged above 25; and Command over economic resources, measured by estimated earned income. The same dimensions are included in the Human Development Index (HDI), and the GDI is defined as the female-to-male HDI ratio (i.e.  $GDI = HDI_f / HDI_m$ ). Perfect gender equality corresponds to a GDI equal to one.

Turning to the third index measuring social representativeness, the GII reflects gender-based disadvantages in the following dimensions—reproductive health, empowerment, and the labor market. The index measures the loss in potential human development due to gender inequality in achievements across these dimensions. It ranges from zero, where women and men fare equally, to one, where one gender fares as poorly as possible in all measured dimensions. One of the dimensions of the GII, women's empowerment, has a sub-dimension - "Female and male shares of parliamentary seats", one of our measures of political representation. Generally, we do not consider the two layers being as mutually exclusive, but intersections are expected to be minimal.

Central to our study, the three indices capturing social representativeness in a country encompass the institutional quality of its society from a gender development perspective. The distribution of each index across countries is shown in Figures B1 – B3 (See Appendix B).

## Women's Representativeness and Covid-19 Policy Responses: Partial Correlation Analysis

In this section, we explore the relationship between Covid-19 policy responses and the measures of political representation and social representativeness. For this purpose, we explore (i) correlations between the indicators and indices of the political and social representation layers and (ii) partial correlations between these measures and policy response indices.

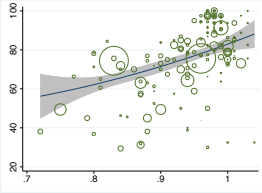
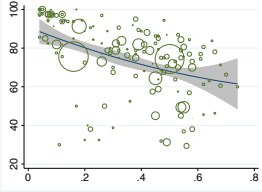
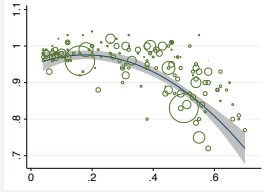
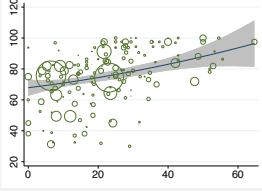
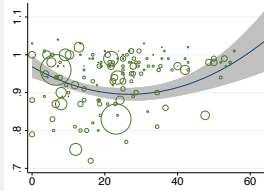
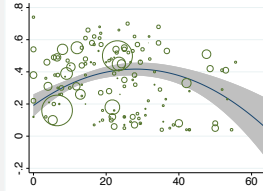
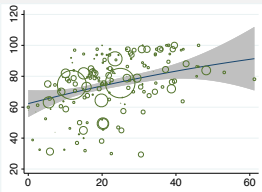
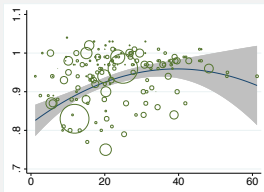
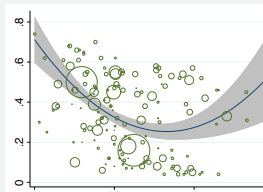
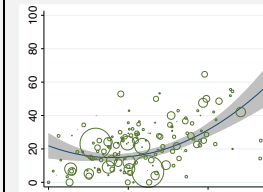
We start with a correlation analysis of the different indicators in the layers. It shows that the WBLI is in high correlation with other representativeness variables. This index captures the legal equality between women and men which has been shown to be "associated with a range of better outcomes for women, such as more entrepreneurship, better access to finance, more abundant female labor supply, and reductions in the gender wage gap". (WB, 2021). One can think of the GDI and GII indices, as well as the political representativeness indicators, as reflections of a broad policy framework in diverse areas of social, business, and legal activities. A legal environment that promotes gender equality, even if not sufficient by itself, is likely to lead to progress in these areas. Indeed, Hyland et al. (2020) show that greater legal



equality between men and women is associated with a lower gender gap in opportunities and outcomes, fewer female workers in vulnerable positions, and greater political representation of women. This way, the WBLI may capture key predispositions for women's representativeness in society. Further, Hyland et al. (2021) show that the WBLI index is in high (partial) correlation with country GDP per capita, polity score, legal origin, religion and geographic characteristics. This evidence suggests that the WBLI may have the capacity to reflect important country characteristics which ultimately shape cross-country institutional variation.



**Table 2.** Scatterplot table for GDI, GII and Women, Business and the Law Index, Proportion of seats in parliament held by women and Proportion of ministerial seats held by women.

<p><i>Women, Business and the Law Index</i> (WBLI)</p>				
 <p><math>\rho = 0.5068^{***}</math></p>	<p><i>Gender Development Index (GDI)</i></p>			
 <p><math>\rho = 0.4937^{***}</math></p>	 <p><math>\rho = -0.5973^{***}</math></p>	<p><i>Gender Inequality Index (GII)</i></p>		
 <p><math>\rho = 0.4499^{***}</math></p>	 <p><math>\rho = 0.2355^{***}</math></p>	 <p><math>\rho = -0.2243^{***}</math></p>	<p><i>Proportion of ministerial seats, held by women</i></p>	
 <p><math>\rho = 0.4503^{***}</math></p>	 <p><math>\rho = 0.2178^{***}</math></p>	 <p><math>\rho = -0.3001^{***}</math></p>	 <p><math>\rho = 0.5336^{***}</math></p>	<p><i>Proportion of seats in parliament held by women</i></p>

Note: Scatterplots are constructed for 149 countries. Fitted lines are based on a quadratic function, shaded areas indicate 95 percent confidence intervals and country population is used for weights applied for fitted lines and bubbles. For each scatterplot, correlation coefficients and their significance are reported. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



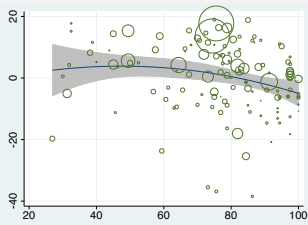
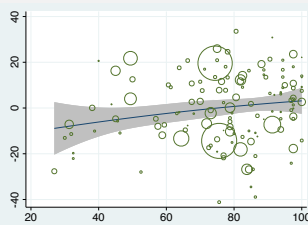
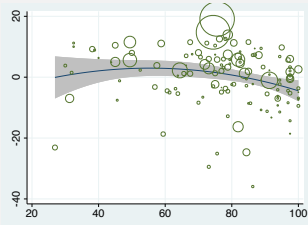
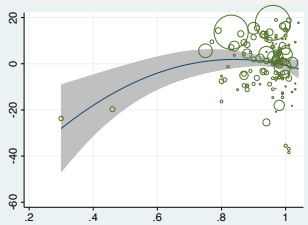
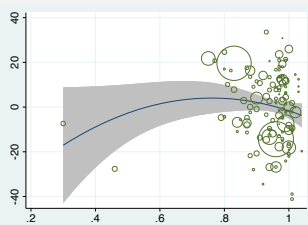
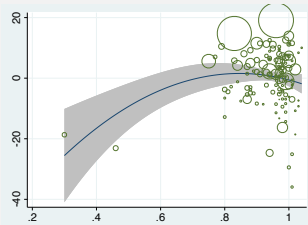
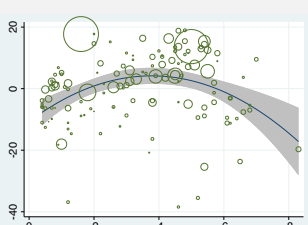
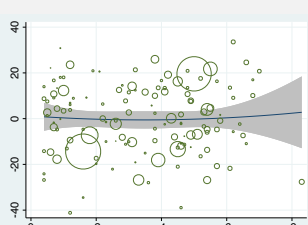
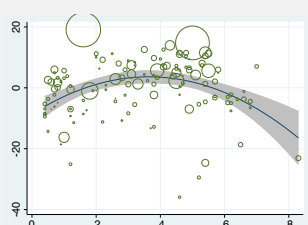
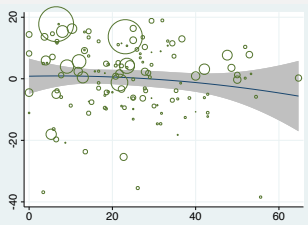
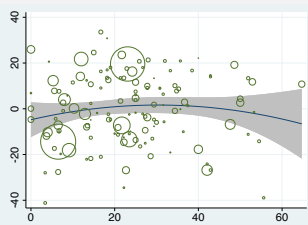
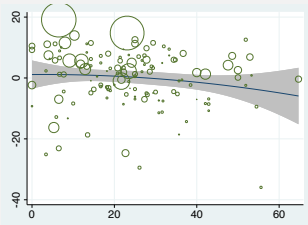
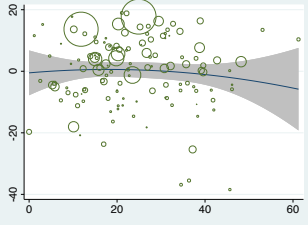
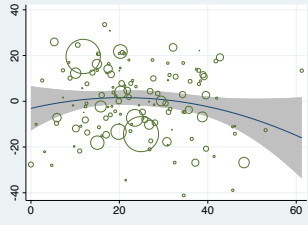
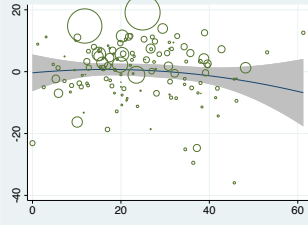
Next, we explore partial correlations of these indicators with Covid-19 policy responses (Table 3). In this analysis, we control for a number of factors that potentially confound the relationship between a particular policy response and representation layer. Specifically, we control for (i) the number of infected cases per million inhabitants, (ii) the number of deaths per million, (iii) GDP per capita, and (iv) life expectancy. The number of infected cases and deaths enter the model in order to control for country differences in the spread and consequences of the virus. GDP per capita captures the stage of country development, accounting for cross-country differences in resource capacities and constraints. Both of these control variables are claimed to have an important role in Covid-19 related research (Coscieme et al., 2020; Aldrich and Lotito, 2020; Elgar, Stefaniak and Wohl, 2020; Gibson, 2020; Conyon and Thomsen, 2020). Life expectancy is an important proxy for country inhabitants' resilience against the virus, conditioned by health and health infrastructures.

Significant correlations are observed between the WBLI and the three policy response indices. The correlation between the WBLI and Stringency (and Containment & health) index is negative, implying that lighter restrictions have been imposed in countries with better business and legal conditions for women. A positive correlation is observed between the WBLI and the economic support index, suggesting that countries with better conditions for women in diverse business and societal areas have provided more extensive economic support in the pandemic. This finding is in line with existing evidence showing that women are more concerned about social policy issues and prefer higher social spending than men (Lott and Kenny, 1999; Abrams and Settle, 1999; Aidt and Dallal, 2008). Also, lighter restrictions and more generous economic support do not presume any trade-off in terms of the allocation of financial resources constrained by a state budget.

Interestingly, we do not observe significant correlations between policy responses and other indicators of women's representativeness. The only exception is a correlation between GDI and the Containment & health index, which is significant at the 10% level and hinges heavily on two outliers (If we drop the two outliers, the P-value of the correlation increases from 0.0931 to 0.2735).



**Table 3.** Scatterplots of policy responses and social representativeness and political representation variables.

	<i>Stringency</i>	<i>Economic support</i>	<i>Containment and health</i>
<i>Women, Business and the Law Index</i>	 <p><math>\rho = -0.2188^{**}</math></p>	 <p><math>\rho = 0.1905^{**}</math></p>	 <p><math>\rho = -0.1935^{**}</math></p>
<i>Gender Development Index</i>	 <p><math>\rho = 0.1246</math></p>	 <p><math>\rho = -0.0077</math></p>	 <p><math>\rho = 0.1462^{*}</math></p>
<i>Gender Inequality Index</i>	 <p><math>\rho = 0.1217</math></p>	 <p><math>\rho = -0.0016</math></p>	 <p><math>\rho = 0.0805</math></p>
<i>Proportion of ministerial seat, held by women</i>	 <p><math>\rho = -0.0969</math></p>	 <p><math>\rho = 0.0425</math></p>	 <p><math>\rho = -0.1343</math></p>
<i>Proportion of seats in parliament, held by women</i>	 <p><math>\rho = -0.0589</math></p>	 <p><math>\rho = -0.0902</math></p>	 <p><math>\rho = -0.0915</math></p>

Note: Scatterplots are constructed for 133 countries. Fitted lines are based on a quadratic function, shaded areas indicate 95 percent confidence intervals and country population is used for weights applied for fitted lines and bubbles. Correlation coefficients are reported with significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



In our partial correlation analysis, we do not control for the direct effects of the gender dimension of social norms and practices. Social norms, practices, as well as informal and formal rules can, however, explain a substantial part of the gender gap (Hawkesworth, 2003; Mackay, 2009; Franceschet, 2011; Elson, 1999; Froehlich et al., 2020) relevant for making decisions. Our measures of women's political and social representativeness do not fully cover gender differences in norms and practices. As Hyland et al. (2020) point out, de-jure female empowerment does not necessarily translate into de-facto empowerment, especially in countries with social norms and informal rules that result in low representation of women in diverse societal spheres. The authors indicate that laws are actionable in a short period, while more time is needed to bring changes in social norms. In our paper (Grigoryan and Khachatryan, 2021), we attempt to address this issue by incorporating the Social Institutions and Gender Index (SIGI) into the model and evaluating the confounding effect on the covariates of the model. We show that the WBLI captures the effect of the gender gap owing to social norms and practices on Covid-19 policy responses as measured by SIGI. This result suggests that the endogeneity arising from the omission of a measure of such a gender gap is likely to be minimal.

## Discussion and Conclusions

Our correlation analysis suggests that it is the layer of women's social representativeness that can explain the policy reactions of governments in times of the Covid-19 pandemic. This result is in line with the institutionalist literature on gender inequality and social role theory, which suggests that a more gender-balanced character of institutions translates into policy measures and related outcomes. Among the three indices constituting the social representativeness layer, the WBLI is, by construction, more inclusive in terms of capturing women's role in diversified societal areas. From Table 2, we observe that the WBLI is the only index that is in strong correlation with all other indicators. We also identify strong dominance of the WBLI in correlations with policy responses: it is the only indicator that is significantly correlated with all three policy response measurements (Table 3).

To conclude, our results establish an association between female social representativeness, as measured by the (legal) equality of opportunities between men and women, and Covid-19 related policies. One potential interpretation of these findings concerns the central role of the gender balance in different institutions and layers of society in understanding policy responses to the Covid-19 pandemic. While it was parliaments and governments that implemented policies, we find that the measures undertaken correlate more strongly with factors related to the social representativeness of women rather than those related to their political representation. This suggests a dominant role of gender-balanced institutions at the 'grass root' level in terms of the scale and scope of the crisis response. Naturally, these institutions may result (or be correlated) with more gender-balanced political representation, but the latter alone is not helpful in explaining the variation in the reaction to the pandemic. These results underline the importance of balanced gender representation in the labor market, business, and other spheres of social life. Further investment and development of 'grass root' institutions that improve women's socioeconomic opportunities, could provide a fundamental foundation for policy development in a crisis situation.

There could also be alternative interpretations of our findings. There is rich evidence that the gender dimension is deeply implicated in institutions (Acker, 1992; Chappell and Waylen, 2013; Lovenduski, 2005). Gender norms and gender practices have been shown to have an influence on the operation and





interaction between formal and informal institutions (see, for instance, Chappell, 2010; Krook and Mackay, 2011; Chappell and Waylen, 2013) and the gender dimension of political institutions is reflected in their practices and values, hence affecting their outcomes (such as laws and policies), formation, and implementation (for instance, Acker, 1992). In turn, governmental policies and rules shape societal norms and expectations. These considerations imply that our results could be driven by the overall values, culture, and institutions of respective societies. These factors would both result in a more gender-neutral legal environment and 'grass-root' institutions, and ultimately, distinguish countries in their response to the Covid-19 pandemic. In this way, our results open an avenue for future studies in this important domain to better understand the causality of observed relationships.

## References

- Abrams, B. A., & Settle, R. F. (1999). Women's suffrage and the growth of the welfare state. *Public Choice*, 100(3), 289-300.
- Acker, J. (1992). From sex roles to gendered institutions. *Contemporary sociology*, 21(5), 565-569.
- Aidt, T. S., & Dallal, B. (2008). Female voting power: the contribution of women's suffrage to the growth of social spending in Western Europe (1869–1960). *Public Choice*, 134(3), 391-417.
- Andersen, A. L., Hansen, E. T., Johannesen, N., & Sheridan, A. (2020). Pandemic, shutdown and consumer spending: Lessons from Scandinavian policy responses to Covid-19. *arXiv preprint arXiv:2005.04630*.
- Bagues, M., & Campa, P. (2021). Can gender quotas in candidate lists empower women? Evidence from a regression discontinuity design. *Journal of Public Economics*, 194, 104315.
- Ball, C. (2009). What Is Transparency? *Public Integrity* 11 (4): 293–308. doi:10.2753/PIN1099-9922110400.
- Besley, T., & Coate, S. (1997). An economic model of representative democracy. *The Quarterly Journal of Economics*, 112(1), 85-114.
- Besley, T., & Case, A. (2003). Political institutions and policy choices: evidence from the United States. *Journal of Economic Literature*, 41(1), 7-73.
- Besley, T., Folke, O., Persson, T., & Rickne, J. (2017). Gender quotas and the crisis of the mediocre man: Theory and evidence from Sweden. *American economic review*, 107(8), 2204-42.
- Borrelli, M. A. (2002). The first lady as formal advisor to the president. *Women & Politics* 24 (1), 25–45.
- Brodeur, A., Gray, D., Islam, A., & Bhuiyan, S. (2020). A literature review of the economics of Covid-19. *Journal of Economic Surveys*.
- Chappell, L., & Waylen, G. (2013). Gender and the hidden life of institutions. *Public Administration*, 91(3), 599-615.
- Chappell, L. (2010). Comparative gender and institutions: Directions for research. *Perspectives on Politics*, 183-189.
- Chattopadhyay, R., & Duflo, E. (2004). Women as policy makers: Evidence from a randomized policy experiment in India. *Econometrica*, 72(5), 1409-1443.
- Coibion, O., Gorodnichenko, Y., & Weber, M. (2020). *The cost of the Covid-19 crisis: Lockdowns, macroeconomic expectations, and consumer spending* (No. w27141). National Bureau of Economic Research.



- Davis, R. H. (1997). *Women and power in parliamentary democracies: Cabinet appointments in Western Europe, 1968-1992*, Volume 2. U of Nebraska Press.
- Dixit, A. K. (2011). *Lawlessness and economics*. Princeton University Press.
- Eagly, A. and M. Crowley (1986, November). Gender and helping behavior. a meta-analytic review of the social psychological literature.
- Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological review*, 109(3), 573.
- Eagly, A. H., & Johannesen-Schmidt, M. C. (2001). The leadership styles of women and men. *Journal of social issues*, 57(4), 781-797.
- Eagly, A. H. (1987). Reporting sex differences. Eckel, C. and P. Grossman (1998). Are women less selfish than men? evidence from dictator experiments. *Economic Journal* 108 (448), 726–35.
- Easterly, W. (2008). Institutions: Top down or bottom up?. *American Economic Review*, 98(2), 95-99.
- Elson, D. (1999). Labor markets as gendered institutions: equality, efficiency and empowerment issues. *World development*, 27(3), 611-627.
- Fox, R. L., & Schuhmann, R. A. (1999). Gender and local government: A comparison of women and men city managers. *Public Administration Review*, 231-242.
- Franceschet, S. (2011). Gender policy and state architecture in Latin America. *Politics & Gender*, 7(2), 273.
- Froehlich, L., Olsson, M. I., Dorrough, A. R., & Martiny, S. E. (2020). *Gender at work across nations: Men and women working in male-dominated and female-dominated occupations are differentially associated with agency and communion*. *Journal of Social Issues*, 76(3), 484-511.
- Gidengil, E. (1995). Economic man—social woman? The case of the gender gap in support for the Canada-United States free trade agreement. *Comparative Political Studies*, 28(3), 384-408.
- Glover, S. H., M. A. Bumpus, J. E. Logan, and J. R. Ciesla (1997). Re-examining the influence of individual values on ethical decision making. In: *From the universities to the marketplace: the business ethics journey*, 109–119.
- Goertzel, T. (1983). The gender gap: Sex, family income and political opinions in the early 1980's. *JPMS: Journal of Political and Military Sociology* 11 (2), 209.
- Greif, A. (2006). *Institutions and the path to the modern economy: Lessons from medieval trade*. Cambridge University Press.
- Grigoryan, A. & K. Khachatryan (2021). *Covid-19 policy responses through the lenses of female political and social representation*. Mimeo.
- Gupta, R., Ghosh, A., Singh, A. K., & Misra, A. (2020). Clinical considerations for patients with diabetes in times of Covid-19 epidemic. *Diabetes & metabolic syndrome*, 14(3), 211.
- Hartl, T., K. W. and E. Weber (2020, 4). Measuring the impact of the German public shutdown on the spread of Covid-19. *Covid Economics* 1 (11), 25-32.



- Hawkesworth, M. (2003). Congressional enactments of race-gender: Toward a theory of raced-gendered institutions. *American Political Science Review*, 529-550.
- Hyland, M., S. Djankov, and P. Goldberg. 2020. *Gendered Laws and Women in the Workforce*. *American Economic Review: Insights*, 2 (4): 475-90.
- Hyland, M., S. Djankov, & P. Goldberg. 2021. *Do Gendered Laws Matter for Women's Economic Empowerment?* Peterson Institute for International Economics Working Paper No. 21-5.
- Iyer, L., Mani, A., Mishra, P., & Topalova, P. (2012). The power of political voice: women's political representation and crime in India. *American Economic Journal: Applied Economics*, 4(4), 165-93.
- Kong, E., & Prinz, D. (2020). Disentangling policy effects using proxy data: Which shutdown policies affected unemployment during the Covid-19 pandemic?. *Journal of Public Economics*, 189, 104257.
- Krook, M. L., & Mackay, F. (2011). Introduction: Gender, politics, and institutions. In *Gender, politics and institutions* (pp. 1-20). Palgrave Macmillan, London.
- Lott, Jr, J. R., & Kenny, L. W. (1999). Did women's suffrage change the size and scope of government?. *Journal of political Economy*, 107(6), 1163-1198.
- Lovenduski, J. (2005). *Feminizing politics*. Polity.
- Mackay, F., Kenny, M., & Chappell, L. (2010). New institutionalism through a gender lens: Towards a feminist institutionalism?. *International Political Science Review*, 31(5), 573-588.
- Mackay, F., & Waylen, G. (2009). Feminist institutionalism. *Politics & Gender*, 5(2), 237-237.
- Miller, G. (2008). Women's suffrage, political responsiveness, and child survival in American history. *The Quarterly Journal of Economics*, 123(3), 1287-1327.
- OECD. (2014). Women, Government and Policy Making in OECD Countries: Fostering Diversity for Inclusive Growth. OECD. doi:10.1787/9789264210745-en.
- Ones, D. S. and C. Viswesvaran (1998). The effects of social desirability and faking on personality and integrity assessment for personnel selection. *Human Performance* 11 (2-3), 245-269.
- Reiss, M. C. and K. Mitra (1998). The effects of individual difference factors on the acceptability of ethical and unethical workplace behaviors. *Journal of Business Ethics* 17(14), 1581-1593.
- Reynolds, A. (1999). Women in the legislatures and executives of the world: Knocking at the highest glass ceiling. *World Politics* 51(4), 547-572.
- Rodriguez-Garcia, M. J. (2015). Local Women's Coalitions: Critical Actors and Substantive Representation in Spanish Municipalities. *European Journal of Women's Studies* 22 (2): 223-240. doi:10.1177/1350506814549424.
- Rosenthal, C. S. (2000). Gender Styles in State Legislative Committees: Raising Their Voices in Resolving Conflict. *Women & Politics* 21 (2): 21-45. doi:10.1300/J014v21n02\_02.
- Svaleryd, H. (2009). Women's representation and public spending. *European Journal of Political Economy*, 25(2), 186-198.
- Wood, W., & Eagly, A. H. (2009). Gender identity. *Handbook of individual differences in social behavior*, 109-125.



## Appendix A.

**Table A1.** Summary statistics.

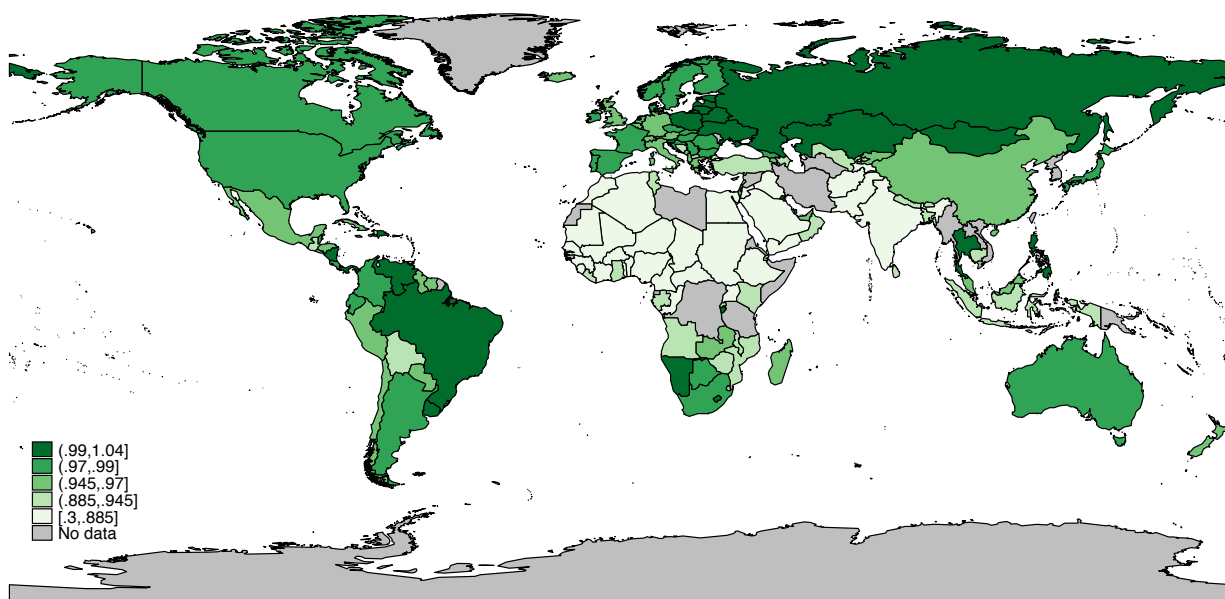
	Obs.	Mean	Std. dev.	Min.	Max.
(1) Stringency index	134	48.665	11.914	9.153	69.728
(2) Containment and health index	134	49.253	10.686	10.798	73.229
(3) Economic support index	134	37.647	17.932	0	75.368
(4) Proportion of women in ministerial level positions (%)	134	23.508	13.863	0	64.700
(5) Proportion of seats held by women in national parliaments (%)	134	23.900	11.697	0	61.250
(6) Gender Inequality Index (GII)	134	0.337	0.196	0.040	0.830
(7) Gender Development Index (GDI)	134	0.939	0.093	0.300	1.040
(8) Women, Business and the Law Index Score (scale 1-100)	134	77.164	18.033	26.9000	100.000
(9) New cases per million	134	24.260	31.456	0.0407	159.066
(10) New deaths per million	134	0.590	0.856	0	4.665
(11) GDP per capita (in current 1000 USD)	134	20.663	20.568	0.6612	116.936
(12) Life expectancy	134	73.720	7.306	53.2800	84.630

Note. Covid-19 pandemic related variables, (1) – (3) and (9) – (10), are average values calculated from daily data, for the period January – October 10, 2020. Summary statistics are calculated for observations, included in Models 1 and 2, for the baseline specification.

## Appendix B. Maps

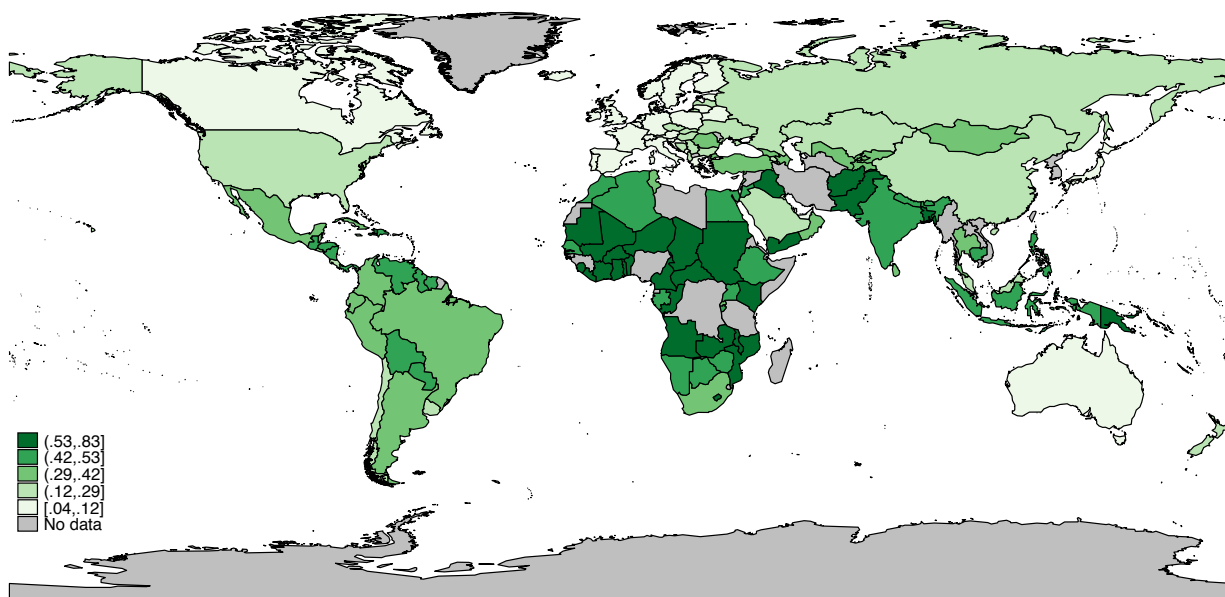
**Figure B1.** The world map for Gender Development Index.





**Note:** A choropleth map showing countries/territories by their Gender Development Index (GDI) score based on data collected in 2018, published by UNDP. Countries are grouped into five groups (quintiles), from 1 (closest to gender parity: “high equality in HDI achievements between women and men”) to 5 (furthest from gender parity).

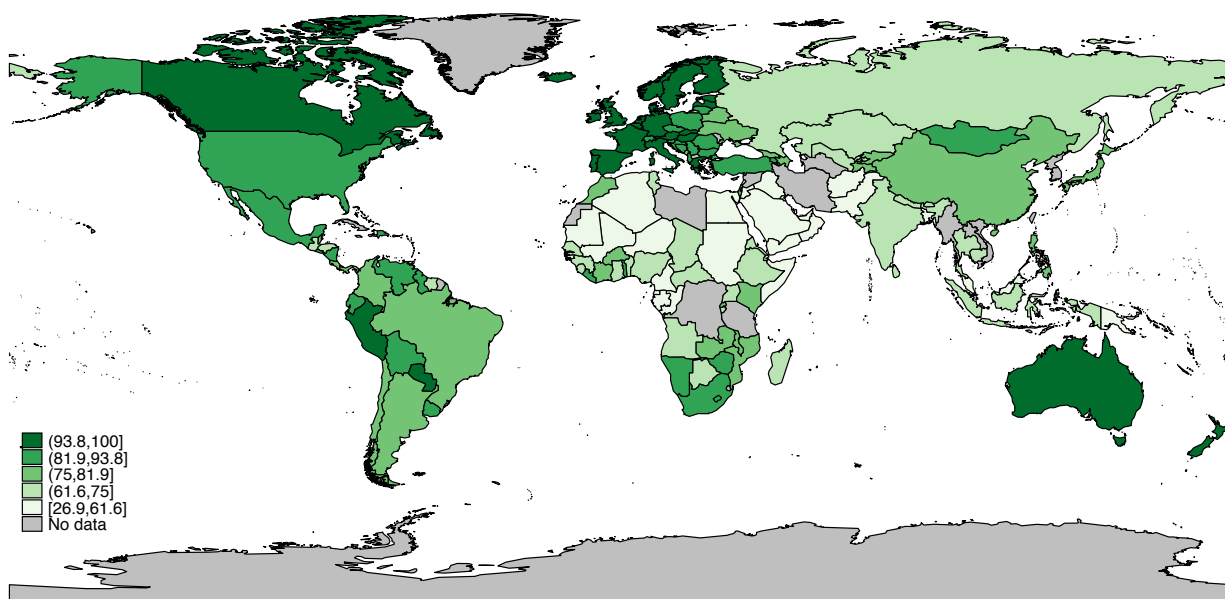
**Figure B2.** The world map for gender inequality index



**Note:** A choropleth map showing countries/territories by their Gender Inequality Index (GII) score based on data collected in 2018, published by UNDP. Countries are grouped into five groups (quintiles), from 1 (lower inequality) to 5 (highest inequality).

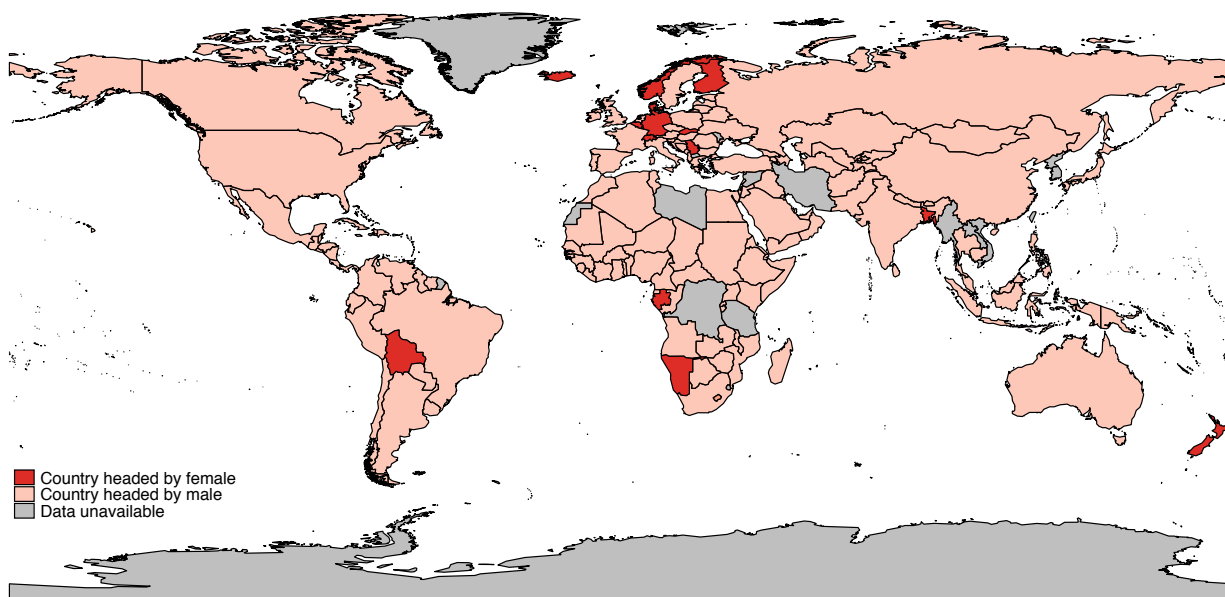
**Figure B3.** Women, Business and the Law Index.





*Note:* A choropleth map showing countries/territories by Women, Business and Law index (WBLI) score based on data collected in 2018, published by World Bank. Countries are grouped into 5 groups (quintiles), from the lowest to the highest.

**Figure B4.** Women leadership at a country level: president or prime minister.

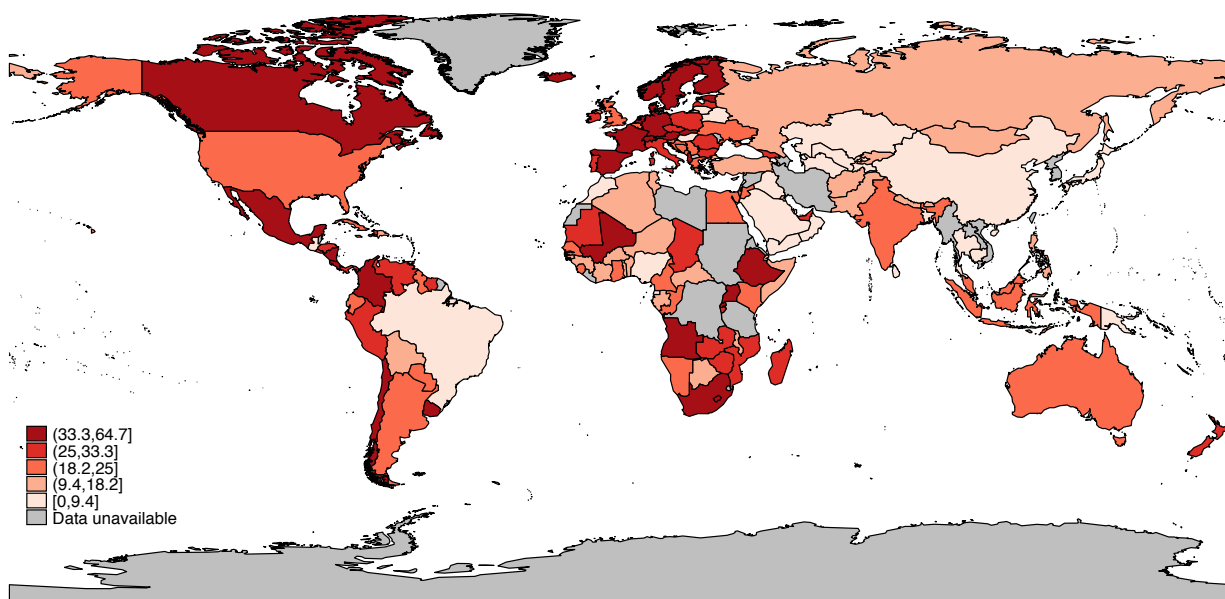


*Note:* A choropleth map showing countries/territories headed by women as president or prime minister, based on data collected for 2019, published by World bank.

**Figure B5.** Proportion of ministerial seats held by women.

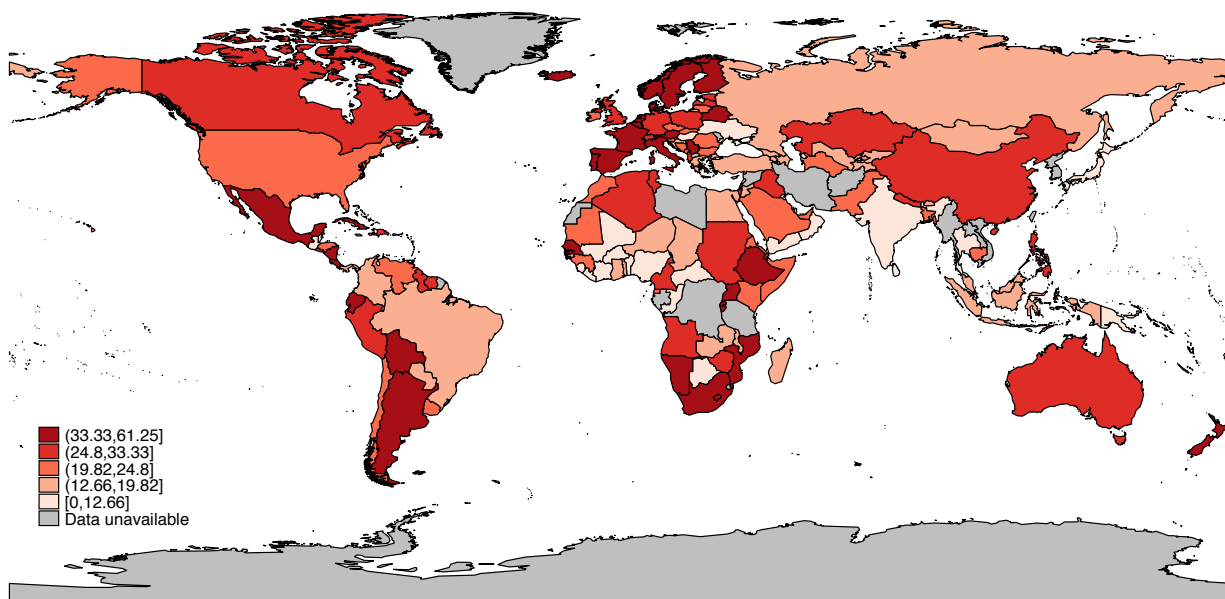






*Note:* A choropleth map showing countries / territories by proportion of ministerial seats held by women (0% - 100%), based on data collected for 2019, published by World bank.

**Figure B6.** *Proportion of seats in parliament held by women.*



*Note:* A choropleth map showing countries / territories by proportion of seats held by women (0% - 100%), based on data collected for 2019, published by World bank.



## Appendix C.

*Categories and assigned values of policy measurements listed in Table 1.*

### Containment and closure policies

*School closing:* 0 - no measures, 1 - recommend closing, 2 - require closing (only some levels or categories, e.g. just high school, or just public schools), 3 - require closing all levels;

*Workplace closing:* 0 – targeted, 1- general;

*Cancel public events:* 0 - no measures, 1 - recommend cancelling, 2 - require cancelling;

*Restrictions on gatherings:* 0 - no restrictions, 1 - restrictions above 100 people, 2 - restrictions on gatherings between 101-1000 people, 3 - restrictions on gatherings between 11-100 people, 4 - restrictions on gatherings of 10 people or less;

*Close public transport:* 0 - no measures, 1 - recommend closing (or significantly reduce volume/route/means, 2 - require closing (or prohibit most citizens from using it);

*Stay at home requirements:* 0 - no measures, 1 - recommend not leaving house, 2 - require not leaving house with exceptions for daily exercise, grocery shopping, and 'essential' trips;

*Restrictions on internal movement:* 0 - no measures, 1 - recommend not to travel between regions/cities, 2 - internal movement restrictions in place; International travel controls.

### Economic policies

*Income support:* 0 - no income support, 1 - government is replacing less than 50% of lost salary (or if a flat sum, it is less than 50% median salary);

*Debt/contract relief:* 0 - no debt/contract relief, 1 - narrow relief, specific to one kind of contract, 2 - broad debt/contract relief.

### Health system policies

*Public information campaigns:* 0 - formal sector workers only, 1 - transfers to informal sector workers too;

*Testing policy:* 0 - no testing policy, 1 - only those who both (a) have symptoms AND (b) meet specific criteria (e.g. key workers, admitted to hospital, came into contact with a known case, returned from overseas);

*Contact tracing:* 0 - no contact tracing, 1 - limited contact tracing; not done for all cases, 2 - comprehensive contact tracing; done for all identified cases;

*Facial Coverings:* 0 - No policy, 1 – Recommended, - Required in some specified shared/public spaces outside the home with other people present, or some situations when social distancing not possible, 3 - Required in all shared/public spaces outside the home with other people present or all situations when social distancing not possible, 4 - Required outside the home at all times regardless of location or presence of other people,

*Vaccination Policy:* 0 - No availability, 1 - Availability for ONE of following: key workers/ clinically vulnerable groups / elderly groups, 3 - Availability for ALL of following: key workers/ clinically vulnerable groups / elderly groups, 4 - Availability for all three plus partial additional availability (select broad groups/ages)





## Aleksandr Grigoryan

AUA

Aleksandr@aua.am

[https://people.aua.am/team\\_member/aleksandr-grigoryan/](https://people.aua.am/team_member/aleksandr-grigoryan/)

Aleksandr Grigoryan is an Associate Professor at the American University of Armenia and a CERGE-EI Foundation Teaching Fellow. He holds a PhD in Economics from the University of Turin and Masters in Economics from the Institute for Advanced Studies (Vienna). His research covers a range of topics, such as microfinance, migration, poverty, gender, monetary policy and international trade. Aleksandr Grigoryan has publications in Empirical Economics, Eastern European Economics, International Economic Journal, Journal of Income Distribution, among other journals. Aleksandr Grigoryan has a rich experience in economic research and policy consultancy in collaboration with well-known international organizations



## Knar Khachatryan

AUA

kkhachatryan@aua.am

[https://people.aua.am/team\\_member/knar-khachatryan/](https://people.aua.am/team_member/knar-khachatryan/)

Knar Khachatryan is an associate professor at the College of Business and Economics at the American University of Armenia. She is an associate researcher at Center for European Research in Microfinance (CERMi), Belgium. Her research centers on financial inclusion, multidimensional poverty, gender and conflict studies. Her recent publications appear in Journal of Behavioral and Experimental Finance, Review of Development Economics, Eastern European Economics, Strategic Change and other journals. She holds a PhD in Management from SKEMA Business School (France) and a Doctorate in Economics from University of Cote d'Azur (France).