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Gang Violence as Organized Violence:

Investigating the Implications for the Women, Peace, and Security Index

Mariana Viollaz and Jeni Klugman | November 2018

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In this note, we experiment with potential improvements on the measurement of violence in the Women, Peace, and Security (WPS) Index to better reflect the reality on the ground in countries experiencing high levels of gang violence. First, we propose an extension to the measure of conflict from the Uppsala Conflict Data Program—currently the most comprehensive measure of organized violence—by including a more accurate number of deaths associated with gang violence alongside "battle deaths." We show what difference this would make to WPS Index rankings for a set of four Central American countries and Mexico.

Introduction

The United Nations Security Council Resolution 1325 establishing the Women, Peace, and Security (WPS) agenda called for women's empowerment and inclusion in preventing and resolving conflict and building peace.[1] The WPS agenda is reflected in and connects to the Sustainable Development Goals (SDGs), which, among other things, call for an end to all forms of discrimination against women and girls. There are major synergies in the policies and interventions needed to address SDGs 5 (gender equality and women's empowerment) and 16 (peace, justice, and strong institutions).[2]

One way to capture national progress toward these goals is through composite indices, which summarize complex information into a single number and ranking. The Human Development Index was a global pioneer in 1990. Since then, there has been a proliferation of such indices, including rankings of achievements in terms of women's status and gender equality.

Gender indices are typically limited to indicators of women's inclusion, such as whether women complete secondary school or are in paid work. An important exception is the global Women, Peace, and Security Index, introduced in 2017 by the Georgetown Institute for Women, Peace and Security (GIWPS) and the Peace Research Institute Oslo (PRIO).[3] The WPS Index is the first to combine insights from gender and development indices with those from peace and security indices.

In this note, we propose an extension to the WPS Index by including a measure of gang-related violence. This is motivated by the widely recognized fact that a number of countries currently

considered "at peace"—in terms of measured levels of battle deaths—experience high levels of armed violence and insecurity. As noted in a forthcoming policy brief by GIWPS: "In 2017, only two of the five countries with the world's highest reported rates of "violent death" were experiencing active armed conflict: Syria and Afghanistan. The three remaining countries—El Salvador, Venezuela, and Honduras—all face significant political, economic, and social instability and experience high levels of gang violence. The disruption of daily life caused by widespread gang violence is increasingly similar to the experiences and impacts of war, including limited freedom of movement and high numbers of civilian casualties."[4]

Gangs, and violence associated with their activities, are widespread in Central America and Mexico. Institutional weaknesses, police corruption, and overpopulated prisons are all factors that have contributed to a vicious circle of escalating violence in the region, which has some of the highest homicide rates in the world.[5] Although gangs are typically thought of as male, women play a notable role as members, associates, and victims, as outlined below. The high female homicide rate in the Central American region is partly due to gangs.[6]

For these reasons, it seems appropriate to consider gang-related violence in the construction of the WPS Index, at least in the countries most affected. This note explores the implications of systematically accounting for this violence in our measures of conflict for the countries for which data is available.

How Gangs Are Organized and How They Work

Gangs (*maras* and *pandillas* in Spanish) appeared originally in the United States and then spread to Central America and Mexico.[7] The presence of gangs is especially important in El Salvador, Honduras, and Guatemala—known as the Northern Triangle—while gangs in Costa Rica, Nicaragua, and Mexico are less extensive.[8]

While the characteristics and functioning of gangs are country specific, there are some general features. Homicide, rape, kidnapping, and drug trafficking are major activities, as well as links to organized crime (such as to drug cartels in Mexico). There is typically ongoing conflict between different gangs and with state authorities. The occupation and control of specific geographical areas is another common characteristic of gangs.[9]

The main consequence of gang activity is violence. Reports suggest that the homicide rate is much higher in areas of Panama where the number of gangs is larger.[10] Similarly, the number of daily homicides declined in El Salvador after the negotiation of a peace process between the two main gangs in 2012.[11]

Although men typically dominate gangs and the state response, women play critical and unique roles in gangs, in the communities in proximity to gang activity, and in responding to gang violence.[12] A major perceived role of women is to assure the growth of gangs. Approximately one-third of the children born within a gang continue to stay with their parents and the group.[13] Women have also become increasingly involved in gangs' criminal actions, such as selling drugs, extorting local businesses, and operating transport.[14]
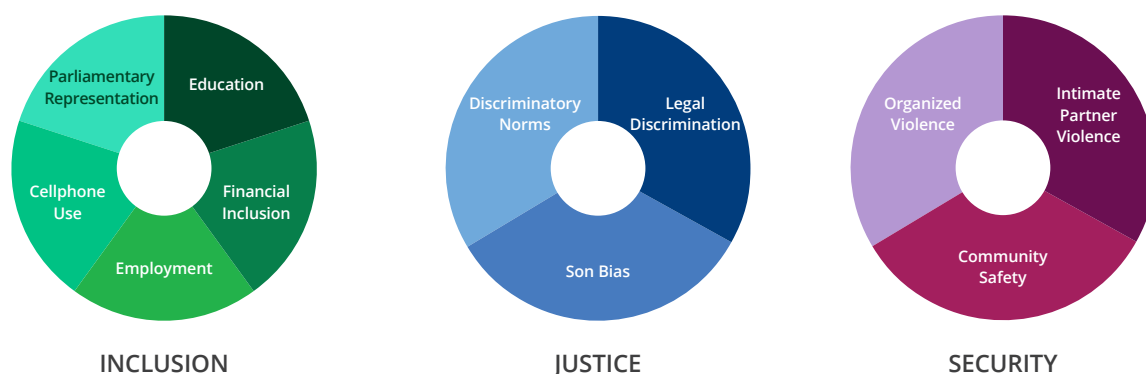
The Women, Peace, and Security Index

The WPS Index is structured around three basic dimensions of well-being: inclusion, justice, and security. Using publicly available data, the index quantifies these three dimensions through 11 indicators that are then combined in a single comprehensive measure of women's well-being. The structure is shown in Figure 1 below.

The Women, Peace, and Security Index Captures Three Dimensions of Women's Well–Being In 11 Indicators

INCLUSION — Parliamentary Representation, Education, Cellphone Use, Financial Inclusion, Employment

JUSTICE — Discriminatory Norms, Legal Discrimination, Son Bias

**SECURITY** — Organized Violence, Intimate Partner Violence, Community Safety

Source: GIWPS and PRIO (2017).

Security is measured at three levels: family, community, and society. In this note, we are especially interested in the security dimension at the society level. This is captured in the WPS Index using data from the Uppsala Conflict Data Program (UCDP) on the number of total deaths as a result of organized violence episodes.

The Latin American and Caribbean region has an overall regional average in the WPS Index slightly above the global index average. However, the region has among the worst performances in the security subindex, outperformed by all the regions except for the Middle East and North Africa. This is using a measure of security that does not account for gang violence. Figure 2 provides a comparison of the index achievements for different regions of the world, overall and by dimension.

FIGURE 2

The WPS Index Across Dimensions and Regions
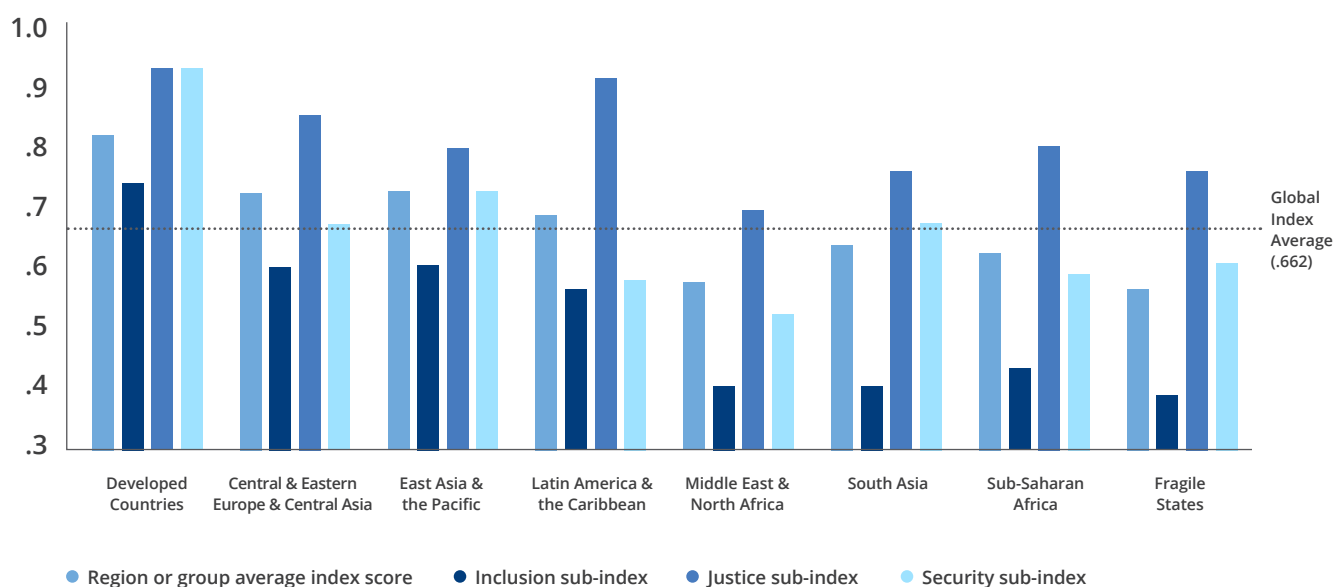
Source: GIWPS and PRIO (2017).

Notes: WPS Index scores range from a minimum of 0 (worst possible performance) to 1 (the best possible score).

Here, in light of the scale of gang violence, we reestimate the WPS Index for a group of five Latin American countries most affected by gang violence: the Northern Triangle (El Salvador, Honduras, and Guatemala), Nicaragua, and Mexico. To do that, we add gang-related deaths to the organized violence measure as described below, recalculate the security subindex, and obtain an adjusted WPS Index for these five countries.

How Organized Violence Is Measured

The UCDP offers one of the broadest and most complete measures of organized violence to date. This measure includes three types of conflict. The first is state-based conflict, either between two states or between a state and a rebel group—for example, armed conflict between the Colombian government and the Revolutionary Armed Forces of Colombia (FARC), or armed conflict between Syria and the Islamic State. Second is non-state conflict, which does not involve a state combatant. This category includes, for instance, fighting between rebel groups and militias. The conflict between different drug cartels in Mexico is a type of non-state violence. Finally, there is one-sided conflict, defined as the use of armed force by the government or by a formally organized group against civilians; the Rwandan genocide is the most horrific case.

Unfortunately, deaths captured by UCDP are not disaggregated by sex. However, because this broader measure goes beyond state-based armed conflict, it better captures contemporary types of conflict and yields a more complete and nuanced picture than other global alternatives.[15]

At the same time, the UCDP measure does not accurately account for deaths related to gangs. Although not explicit in its definition, we have been advised by the UCDP that non-state violence – which is defined by UCDP as the use of armed force between two organized armed groups, neither of which is the government of a state, which results in at least 25 battle-related deaths in a year – includes gang violence. However, this raises practical difficulties – not least that the UCDP classification requires there to be two armed groups (so that gang violence affecting civilians is excluded, for example). It also requires identifiable actors, and that for every actor the number of deaths needs to surpass the threshold of 25 to be included.

It can be well argued that gang violence should be taken into account. Military force is increasingly used to combat gangs, and many gangs have gained a level of political organization that strains and challenges the legitimacy of the state. In a number of contexts, including the Northern Triangle, gangs have gained significant territorial control.[16]

Data on Gang Violence

A key reason for not systematically including deaths linked to gangs is that the data tends to be scarce. There is also disagreement about the exact figures for gang deaths, with governments sometimes providing a different picture than alternate sources. For instance, in 2015 the government of El Salvador stated that the main perpetrators of homicides in the country—which was the most violent country in the Western world in 2015—were gang members.[17] However, figures released by the Ministerio Público of the country (the agency responsible for the defense of public interests and citizens' rights) contradicted this claim. Further, as noted above, there are reasons to expect that gang violence would be under-reported in the organized violence measure. Indeed, the UCDP measure for El Salvador reports zero non-state conflicts for the entire period since 1989 – despite this country being widely recognized as seriously affected by gang violence.

In our analysis, we draw on data from InSight Crime, a foundation dedicated to the study of organized violence in Latin America, for four of the five countries under analysis. For Nicaragua, we use statistics on gang violence from Zinecker (2012).[18] Table 1 presents data on the number of gang-related deaths in El Salvador, Honduras, Guatemala, Mexico, and Nicaragua.

TABLE 1

Number of Homicides Attributed to Gang Members

	El Salvador	Honduras	Guatemala	Mexico	Nicaragua
2002	-	-	-	-	17
2007	-	-	-	-	6
2012	-	-	173	-	-
2013	-	-	163	-	-
2014	-	-	156	-	-
2015	2,561	257	165	7	-
2016	-	-	-	14	-
2017	1,801	-	-	28	-

Adjusted Measures of Organized Violence

Building on Table 1, we generate an adjusted measure of organized violence by adding the number of homicides attributed to gang members to the organized violence measure used in the construction of the WPS Index.

We apply this extension to all five countries. It is notable that, prior to the adjustment, the three countries in the Northern Triangle had recorded organized violence at zero. The organized violence measure is computed per 100,000 persons in each country. Using data from InSight Crime and population data from the World Development Indicators (except for Mexico, where we use information on the population of Chiapas from the Instituto Nacional de Estadística y Geografía), we obtain the values presented in Table 2.[19] These values correspond to the average of the organized violence measure over the years with available data in each of the countries (see Table 1).

TABLE 2

How the Organized Violence Measure is Affected by Gang-Related Deaths

	ORGANIZED VIOLENCE MEASURE	
	Before including gang-related deaths	After including gang-related deaths
El Salvador	0.00	34.48
Honduras	0.17	2.87
Guatemala	0.00	1.04
Mexico	1.11	1.42
Nicaragua	0.00	0.22

Adjusted WPS Index

Our next step is to use the adjusted organized violence measure to recalculate the value of the overall WPS Index. We restrict the exercise to the countries for which we have reliable data on gang violence. Table 3 compares the WPS Index value when using the original organized violence measure and the adjusted measure, which includes gang-related deaths. Appendix A provides details on the construction of the WPS Index.

TABLE 3

Value of the WPS Index Before and After
the Inclusion of Gang-Related Deaths

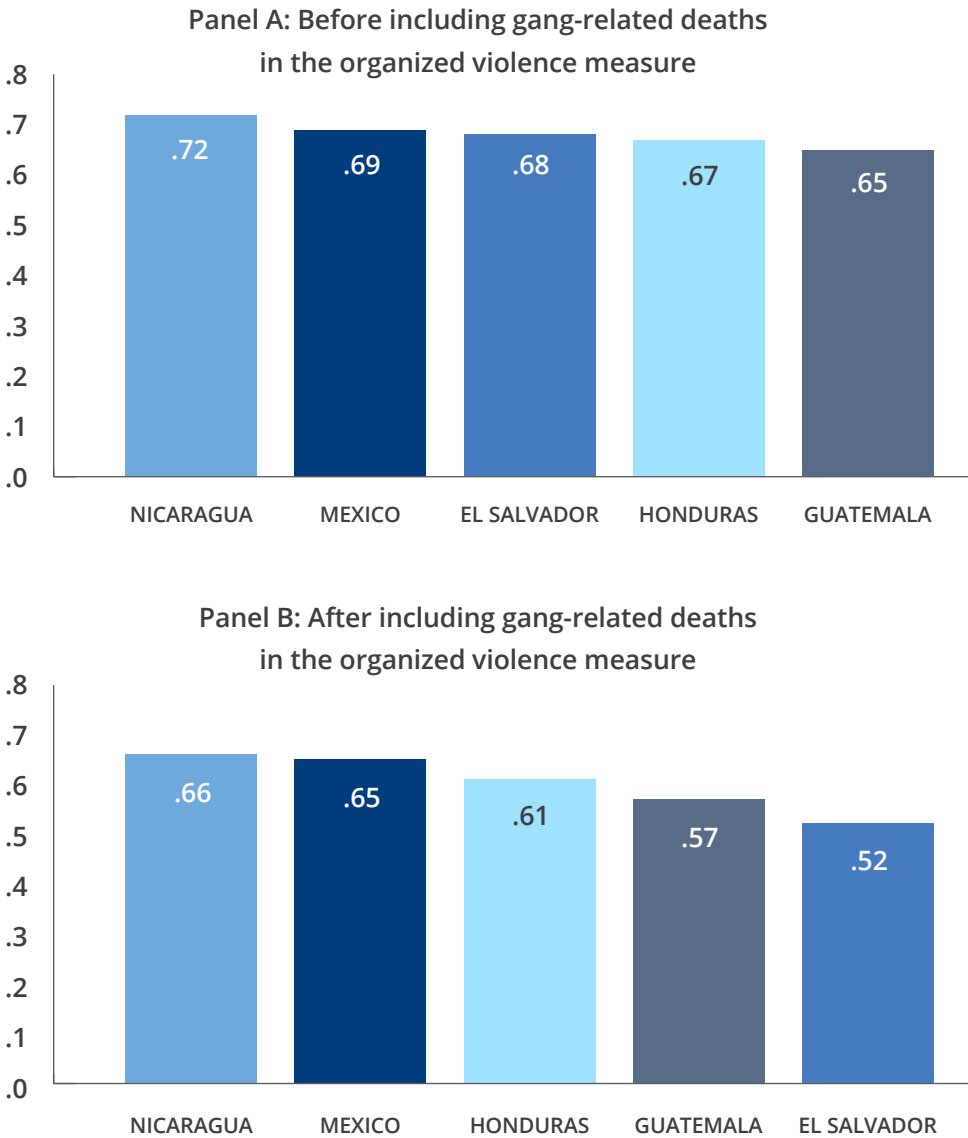|	WPS INDEX	
	Before including gang-related deaths in the organized violence measure	After including gang-related deaths in the organized violence measure
El Salvador	0.685	0.525
Honduras	0.675	0.611
Guatemala	0.650	0.569
Mexico	0.686	0.651
Nicaragua	0.717	0.660

Source: Authors' elaboration based on GIWPS and PRIO (2017), InSight Crime (2018), Zinecker (2012), and World Development Indicators (World Bank, 2018).

As expected, the gang-related deaths reduce the value of the WPS Index, meaning a worse performance. This reduction is particularly marked in El Salvador, where the WPS Index drops by nearly one-fourth (23 percent), followed by Guatemala, with a decline of 13 percent. The worsening in Honduras, Nicaragua, and Mexico is of the order of 9 percent, 8 percent, and 5 percent, respectively.

The major impact on El Salvador's performance is not surprising, because the country has the second-highest rate of violent death in the world, after Syria, in part due to gang violence and the state's response.[20] It should be noted that the limited impact on Mexico's performance is likely due to the fact that we impute data for only one state, and gang-related violence has been high in other parts of the country, including the states of Baja California and Tamaulipas.

Figure 3 also summarizes the changes observed in the ranking of these countries' WPS Index scores. The re-ranking reflects the differential intensity of gang-related violence across countries. El Salvador drops to last place, with the lowest WPS Index of the group, while Honduras and Guatemala improve their relative position despite a lower score than before. This is due to the relatively large decline in the value of the WPS Index in El Salvador once we account for gang violence.

FIGURE 3

Value of WPS Index for Five Central American Countries and Mexico

Panel A: Before including gang-related deaths in the organized violence measure

	NICARAGUA	MEXICO	EL SALVADOR	HONDURAS	GUATEMALA
	.72	.69	.68	.67	.65

Panel B: After including gang-related deaths in the organized violence measure

	NICARAGUA	MEXICO	HONDURAS	GUATEMALA	EL SALVADOR
	.66	.65	.61	.57	.52

Source: Authors' elaboration based on GIWPS and PRIO (2017), InSight Crime (2018), Zinecker (2012), and World Development Indicators (World Bank, 2018).

The reported changes in the WPS Index have implications in the countries' global rankings. While the exercise is merely illustrative, it is notable that El Salvador loses 67 positions and plummets from 77th to close to the bottom, ranking 144th out of 153 countries. Honduras, Guatemala, and Nicaragua lose 31, 32, and 44 places, respectively. Mexico drops 22 places. Note that, due to data constraints, we keep the original values for the rest of the countries.

Counterfactual Analysis

We have shown how high levels of gang-related violence significantly undermine a country's rankings on the WPS Index. The inclusion of gang-related violence affects the security dimension of this three-part index, and it is interesting to investigate how much of a deterioration would be needed in other dimensions, such as justice or inclusion, to get the same overall decline in performance. We do not do this to argue that worsening in another indicator would be better or worse from a societal or policy point of view, but simply as a thought experiment, for the purposes of comparison and illustration.

Table 4 summarizes the findings. It is striking that for El Salvador the impact of gang-related deaths exceeds the maximum possible worsening in any of the other WPS indicators alone.

For Honduras, we find that a three-fourths (73 percent) reduction in women's mean years of schooling would be equivalent to the worsening associated with gang-related deaths. Inclusion of gang-related deaths is also equivalent to a reduction of 29 percentage points in women's employment rate, or a massive increase of 24 percentage points in the lifetime intimate partner violence measure.

In Guatemala, a 30-percentage-point reduction in access to cellphones by women would erode the WPS Index by as much as current levels of gang-related deaths. An equivalent result is found when increasing the intimate partner violence measure by 32 percentage points.

In Mexico, we replicate the adjusted value of the WPS Index by either reducing women's mean years of schooling by 7 percent or reducing the women's financial inclusion measure by 5 percentage points.

Finally, in Nicaragua the adjusted WPS Index could be replicated by lowering the rate of women's parliamentary representation by 15 percentage points or reducing the women's employment rate by 21 percentage points.

TABLE 4

Counterfactual Analysis, Selected Central American Countries

	NEEDED CHANGE IN EACH INDICATOR TO REPLICATE THE WPS INDEX AFTER GANG-RELATED DEATHS INCLUSION:										WPS including gang-related deaths
	Mean years of schooling	Financial inclusion (%)	Employment	Cellphone	Parliament	Legal discrim. (score)	Sex ratio at birth	Unaccep. for women to work	Community Safety	Lifetime IPV	
El Salvador											
Value of the indicator	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	**0.525**
Worsening	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Honduras											
Value of the indicator	1.7	n.a.	21%	51%	6%	52	1.1	42%	27%	46%	**0.611**
Worsening	73%	n.a.	29pp	27pp	20pp	225%	5%	31pp	29pp	24pp	
Guatemala											
Value of the indicator	1.9	n.a.	n.a.	36%	n.a.	65	1.11	53%	n.a.	60%	**0.569**
Worsening	73%	n.a.	n.a.	30pp	n.a.	45	5%	40pp	n.a.	32pp	
Mexico											
Value of the indicator	8.0	34%	42%	59%	39%	12	1.06	18%	39%	17%	**0.651**
Worsening	7%	5pp	4pp	3pp	2pp	4	1%	4pp	2pp	2pp	
Nicaragua											
Value of the indicator	4.1	n.a.	30%	57%	31%	36	1.08	34%	30%	45%	**0.660**
Worsening	45%	n.a.	pp	19pp	15pp	22	3%	19pp	19pp	16pp	

Source: Authors' calculations based on GIWPS and PRIO (2017), InSight Crime (2018), Zinecker (2012), and World Development Indicators (World Bank, 2018).

Notes: "n.a." indicates that the adjusted-value of the WPS Index could not be replicated after including the maximum possible worsening in the corresponding indicator.

Conclusions

It is well known that gang violence is a pervasive feature of people's lives in much of Central America and Mexico. Yet conventional measures of conflict and well-being appear to struggle to capture this phenomenon. This note has exposed and illustrated how much difference gang violence makes to our assessments of national achievements. The implications are huge, especially for El Salvador, and the analysis usefully shows how national rankings are affected, underlining that gang violence erodes well-being in ways that substantially undermine achievements on other fronts.

It would be useful to extend the analysis more systematically across the Latin American region. For example, Venezuela also experiences high levels of gang violence, but reliable data was unavailable.

It is also important to consider the implications for the scope and nature of the WPS agenda. Broadening the women, peace, and security field to encompass the challenges posed by high levels of gang violence allows for new perspectives about the role of women in violence prevention and peacebuilding, among others, to come to the fore.

Appendix A: WPS Index Construction

The Women's Peace and Security (WPS) Index is a summary measure capturing achievements in women's well-being in three dimensions: inclusion, justice, and security. Two steps are basic in estimating the index: normalization and aggregation.

Normalization

The values for several indicators in the WPS Index fall naturally between 0 and 100; for instance, all those presented as percentages (financial inclusion, employment, cellphone use, intimate partner violence, and community safety). Other indicators require setting maximum values. The WPS Index sets aspirational maximum values of 15 years for mean years of schooling and 50 percent for parliamentary representation. Rescaling is sensitive to the choice of limits and extreme values (outliers) at both tails of the distribution. Where the observed data range for a particular indicator is wide, the indicator acquires a larger implicit weight, and outliers can have undue influence. Setting upper and lower bounds can reduce spurious variability, although this needs to be done with care. Indicators are normalized as follows:

$$\text{Indicator score} = \frac{\text{Actual value-Minimum Value}}{\text{Maximum Value-Minimum Value}}$$

Aggregation

First, the normalized variables (indicators) are aggregated for each dimension and then aggregated across the three dimensions of the WPS Index.

The arithmetic mean is used to aggregate indicator scores within each dimension, reflecting the broadly complementary nature of the indicators. The relative weight of each indicator in a dimension is inversely proportional to the number of indicators in that dimension.

$$\text{Inclusion subindex} = \begin{bmatrix} \text{Education score +} \\ \text{Financial inclusion score +} \\ \text{Employment score +} \\ \text{Cellphone use score +} \\ \text{Parliament representation score} \end{bmatrix} \times \frac{1}{5}$$

$$\text{Justice subindex} = \left[\begin{array}{l} \text{Legal discrimination score} + \\ \text{Son bias score} + \\ \text{Discriminatory norms score} \end{array} \right] \times \frac{1}{3}$$

$$\text{Security subindex} = \left[\begin{array}{l} \text{Intimate partner violence score} + \\ \text{Community safety score} + \\ \text{Organized violence score} \end{array} \right] \times \frac{1}{3}$$

To emphasize that all three dimensions are equally important and that countries are expected to perform well on each dimension, the WPS Index uses a geometric mean to aggregate the three subindices into the overall WPS Index.

$$\text{WPS index} = \text{Inclusion subindex}^{1/3} \times \text{Justice subindex}^{1/3} \times \text{Security subindex}^{1/3}$$

Note: Dr. Mariana Viollaz is Associate Professor, Public Administration Department, CIDE (Centro de Investigación y Docencia Económica), Mexico. Dr. Jeni Klugman is Managing Director, Georgetown Institute for Women, Peace and Security, and Fellow, Harvard Kennedy School's Women and Public Policy Program.

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