Democracy, Gender Equality, and Women's Physical Security

By Ted Piccone[1]

1   Introduction

In preparation for the Community of Democracies' Democracy and Security Dialogue, Brookings Institution researchers studied how the quality of democracy is related to levels of gender equality and women's physical security. The paper follows the definitions of gender equality and gender adopted by U.N. Women.[2] Without controlling for other variables, our bivariate analysis found that a country's democratic quality is moderately correlated with that country's gender equality and physical security of women. Higher quality democracies exhibited smaller gender gaps in the political, educational, health, and economic arenas, and lower levels of violence against women. Stronger autocracies in contrast, had wider gaps between genders and higher levels of violence against women. Furthermore, there is some evidence suggesting that strong democratic qualities are necessary but not sufficient conditions for gender equality and security. Lastly, the evidence suggests that the aforementioned correlation does not extend to countries with weak to moderate levels of democracy.

In what follows, we first discuss the conceptualization and measurement of gender equality, women's physical security, and democracy. Second, for our empirical strategy, we conduct a mean analysis, regression analysis, and data inspection. Finally, we discuss our results.

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1 This working paper was prepared with major research contributions by Anton Wideroth, and research support by Carlos Castillo, Hannah Bagdasar, and Matthew Koo.

2 Gender equality is defined as "the equal rights, responsibilities and opportunities of women and men and girls and boys," and gender as "the social attributes and opportunities associated with being male and female and the relationships between women and men and girls and boys, as well as the relations between women and those between men; UN Women, "Concepts and Definitions," http://www.un.org/womenwatch/osagi/conceptsandefinitions.

2   Variables of Interest

2.1   Gender Equality

Our dependent variables are gender equality and women's physical security. Much debate about how to measure these concepts exists within the gender equality and security literature.[3] In this study, we use the Global Gender Gap Index and the Physical Security of Women Index (PSOW). We seek to capture a broader understanding of gender equality and the lived experiences of all women within a country.

The Global Gender Gap Index of the World Economic Forum measures a country's current gender gap in four subcategories: economic participation and opportunity, educational attainment, health and survival, and political empowerment. It indicates women's representation and status as a percentage of men's. In 2014, for example, Iceland had the smallest gender gap (0.881) and Yemen had the largest (0.484). The Gender Gap Index combines many, if not most, of the measurements most commonly used in the literature. There are two drawbacks. First, the measurement of gaps instead of levels results in odd scores especially in health, which relies heavily on life expectancy. Angola, for example, ranks first in health and survival equality (despite ranking 117th overall) because women have a 7 percent higher life expectancy than men. In absolute terms, however, an Angolan woman's life expectancy is exceptionally low at 46 years.[4] Second, the index measures formal rather than substantive equality—even though the literature suggests that formal equality does not necessarily translate into substantive equality. Despite these limitations, the Gender Gap Index provides the most comprehensive measure of gender equality currently in existence.

The other dependent variable, PSOW, is a five-point ordinal scale taken from the WomanStats Project.[5] It aims to capture a country's prevalence and acceptance of domestic violence, rape, marital rape, and murder of women. As such, a country is assigned a score of 0 to 4 by in-house coders according to an analysis of customs, practice, law, and available statistics. The value of 0 (currently no country has achieved this score) is given to a country that enforces laws against domestic violence, rape and marital rape, has no taboos or norms against reporting such crimes, in which these crimes are rare, and in which honor killings and femicide are non-existent. A value of 4 is qualified by non-existent or weak laws without enforcement, and ignorance and/or acceptance of honor killings and femicide.

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[3] Traditional measurements, such as the Gender Empowerment Measure and Gender Development Index, have received special scrutiny for their dependence on a country's level of Gross Domestic Product (GDP), a limited conceptualization of gender, and the questionable reliability of individual sub-measurements. The majority of empirical work instead uses one or two proxy variables for gender equality, such as educational attainment and the percentage of women in national legislatures or cabinets. See Elin Bjarnegård and Erik Melander, "Disentangling Gender, Peace and Democratization: The Negative Effects of Militarized Masculinity," *Journal of Gender Studies* 20, no. 2 (2011): 139-154; John Högström, "Do Development and Democracy Positively Affect Gender Equality in Cabinets?" *Japanese Journal of Political Science* 16, no. 3 (2015): 332-356; Caroline Beer, "Democracy and Gender Equality," *Studies in Comparative International Development* 44, no. 3 (2009): 212-227; Ronald Inglehart, Pippa Norris, and Christian Welzel, "Gender Equality and Democracy," *Comparative Sociology* 1, no. 3 (2002): 321-345.
[4] World Economic Forum, "Global Gender Gap Report 2016," 2016, http://reports.weforum.org/global-gender-gap-report-2016/economies/#economy=AGX.
[5] The WomanStats Project is a collaborative effort led by Valerie M. Hudson of Texas A&M University.

Variable Name	Range	Type	Source
Global Gender Gap	0 (absolute inequality) to 1 (absolute equality)	Interval	World Economic Forum
PSOW	0 (most secure) to 4 (least secure)	Ordinal	The WomanStats Database

There are however data limitations. The data available for the PSOW Index are for the years 2007-09 and 2014. Similarly, the Gender Gap Index is from 2006 to 2015. We average the values of each index over the available time periods. We removed countries that did not have an average score for these indexes. In total, 155 countries are included in the PSOW analysis and 133 in the Gender Gap analysis (see *Supplement 5.1* and *Supplement 5.2* for full lists).

2.2   Democracy

Democratic quality is the independent variable for our study. The databases used are the Variety of Democracies (V-Dem) Project, Freedom House, and Polity IV. V-Dem evaluates the quality of a government's system of checks and balances as well as the degree to which basic individual rights are respected. As such, it is constructed from three sub-indices—judicial constraints on the executive, equality before the law and individual liberty, and legislative constraints on the executive—each measured by a series of individual variables (quantitative and qualitative variables assessed by country experts). The final V-Dem index is an interval scale between 0 and 1; in 2009, for example, Eritrea was the least liberally democratic out of the countries surveyed (0.01) whereas Norway was the most liberally democratic (0.90). Freedom House's index assesses the state of civil and political rights in a given country, as experienced by its citizens. A country is given one civil liberties and one political liberties score by external analysts according to a seven-point ordinal scale, using a combination of field and desk research. The final score, ranging from 1 (most free) to 7 (least free), is the average of each country's civil and political liberties score. Note that we have inverted the Freedom House scale to correspond with the ordinal direction of the other two measurements. A country with a score of 7 in the original scale will, as such, have a score of 1 on our scale. Finally, Polity's index (Polity) is a measurement of a country's degree of institutionalized democracy—conceived as the presence of institutions and procedures that allow citizens to express opposition, and the existence of institutionalized constraints on the executive. The index is composed of a democracy indicator (an additive ordinal score from 0 to 10) and an autocracy indicator (an additive ordinal score from -10 to 0). The final Polity score is constructed by adding the democracy score to the autocracy score, creating an ordinal scale from +10 (strongly democratic) to -10 (strongly autocratic).

Variable Name	Range	Type	Source
V-Dem	0 (least democratic) to 1 (most democratic)	Interval	V-Dem Project
Freedom House	1 (least free) to 7 (freest)	Ordinal	Freedom House
Polity	-10 (strongly autocratic) to +10 (strongly democratic)	Ordinal	Polity IV

3   Empirical Strategy

3.1   Mean Analysis

To analyze and identify patterns within the country-year data, we first use a simple mean analysis to recognize broad trends. After placing the data in distinct groups, we create four groups for each measurement of democratic quality: strong democracy (SD), weak democracy (WD), weak autocracy (WA), and strong autocracy (SA). These groups are created in two steps. First each dataset is divided up into a group of democracies and a group of autocracies. The cutoff points we have chosen are the following: 0.4 for V-Dem, 5 for Freedom House, and 6 for Polity.[6] Second, the group of democracies and autocracies are divided into roughly equal parts while keeping countries with exactly the same scores in the same group. For example, the democracy group, as measured by Polity, for the PSOW analysis is divided into one group containing all countries with a Polity score of 9 or higher (48 total) and one with countries with scores between 8 and 6 (39 total).[7] After placing countries into four distinct groups, we calculate the average GenderGap and PSOW score for each democratic quality level and compare them across levels.
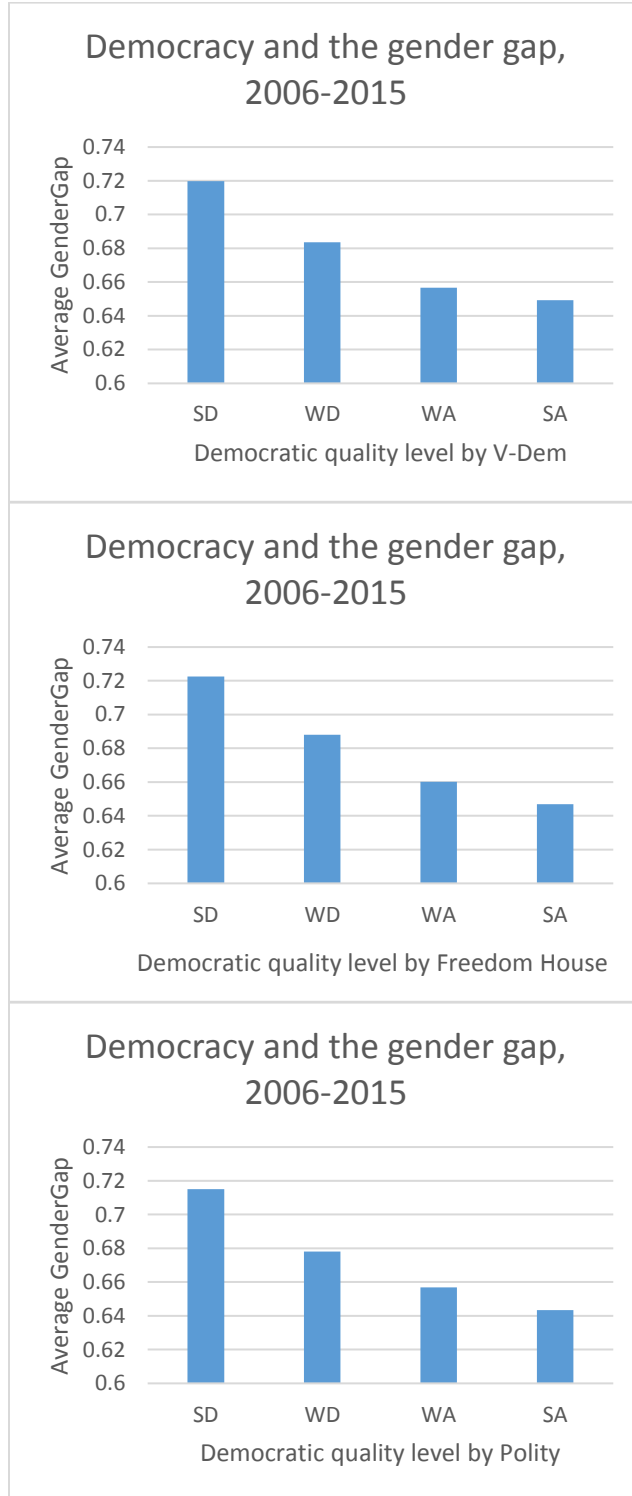
3.1.1   GenderGap Index

Turning to the GenderGap Index, the mean analysis suggests a similar pattern between gender equality and the quality of democracy as the one seen in the violence against women analysis—a clear positive correlation between higher levels of democracy and a smaller gender gap. Although the data contain some powerful outliers (see full list in *Supplement 5.1*) they are spread relatively evenly across the four groups and should not be expected to influence the overall pattern.

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[6] Cutoff points were decided based on language used by the creators of each index, and are inclusive upwards, so that, for example, all countries with a Freedom House score of 5 or higher are regarded as democracies.
[7] It is important to note that the exact cutoff points between the four groups are subjective and that countries on either side and in close proximity to the cutoff cannot be considered fundamentally different.

GenderGap[8]

Democracy and the gender gap, 2006-2015

Average GenderGap — Democratic quality level by V-Dem

Category	Value
SD	0.72
WD	0.68
WA	0.656
SA	0.649

Democracy and the gender gap, 2006-2015

Average GenderGap — Democratic quality level by Freedom House

Category	Value
SD	0.722
WD	0.688
WA	0.66
SA	0.647

Democracy and the gender gap, 2006-2015

Average GenderGap — Democratic quality level by Polity

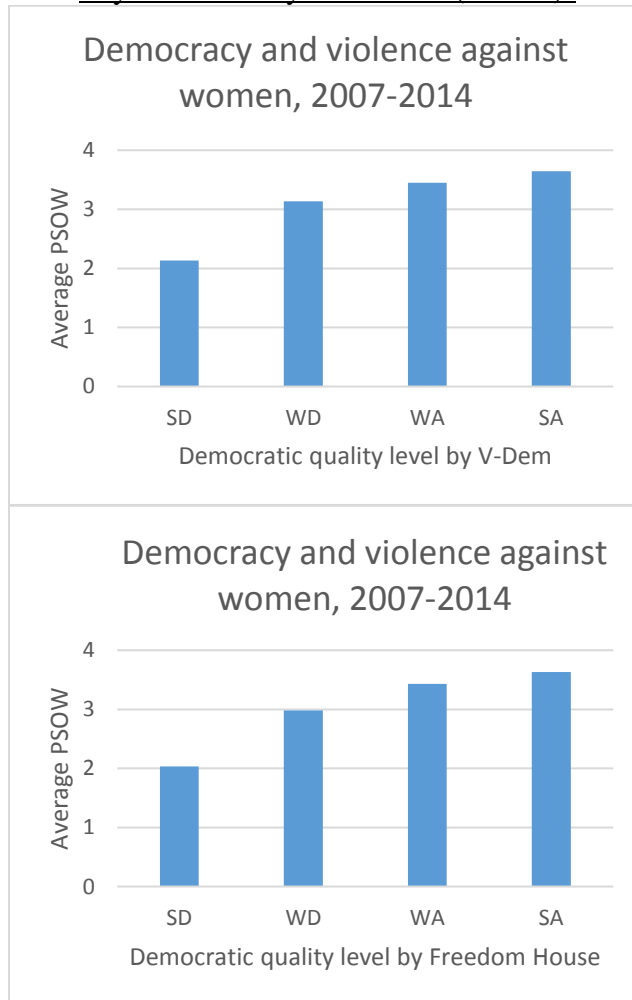| Category	Value
SD	0.715
WD	0.678
WA	0.657
SA	0.644

[8] The abbreviations in the graphs correspond to strong democracy (SD), weak democracy (WD), weak autocracy (WA) and strong autocracy (SA). A higher gender gap score represents a higher level of gender equality.

3.1.2 PSOW Index

For the PSOW Index, all three graphs show clear correlations between higher quality democracy and lower levels of violence against women and vice versa. It is also interesting to note that there is much less variance between weak democracies and strong autocracies than between weak democracies and strong democracies. This trend suggests that there is little difference in violence against women among weak democracies and authoritarian states but that strong democracies are associated with much less violence against women.

Physical Security of Women (PSOW)[9]

Democracy and violence against women, 2007-2014

Democratic quality level by V-Dem

Democracy and violence against women, 2007-2014

Democratic quality level by Freedom House

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[9] The abbreviations in the graphs correspond to strong democracy (SD), weak democracy (WD), weak autocracy (WA), and strong autocracy (SA).

Democracy and violence against women, 2007-2014
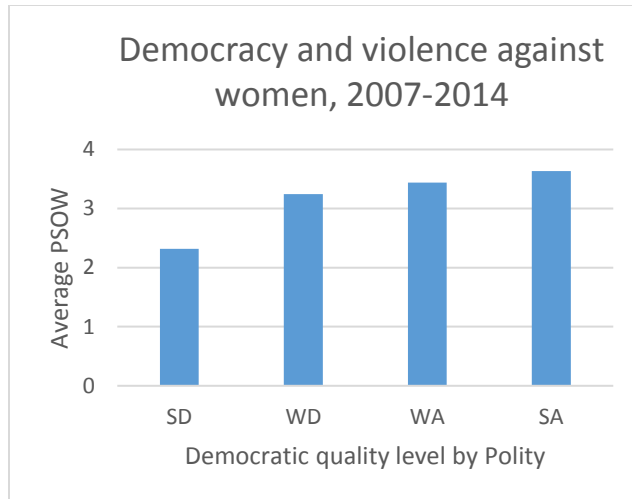
That said, when investigating the individual data points, it becomes clear that the group of countries with a Polity score of 10 have a high variance in PSOW scores, and includes a large group of countries with a low PSOW score of 1—unseen in any other parts of the dataset. These countries—Switzerland, Denmark, Sweden, Portugal, Austria, and Spain—clearly skew the group's average score, creating the large drop observed in the graph. Thus, while the mean analysis may suggest a clear positive correlation between higher levels of democracy and decreasing violence against women, there is little insight into whether the correlation is linear, logarithmic, or polynomial.

3.2   Regression Analysis

For the subsequent regression analysis, we identify three important statistics: the correlation coefficient *(Multiple R)*, the *R Squared* value, and the *Significance F*.[10]

3.2.1   GenderGap Index

For the GenderGap Index, the results from the regression analysis suggest that violence against women is more dependent on democratic quality than the gender gap is, and that countries with similar democracy scores have larger variance in their gender gap than in their violence levels.
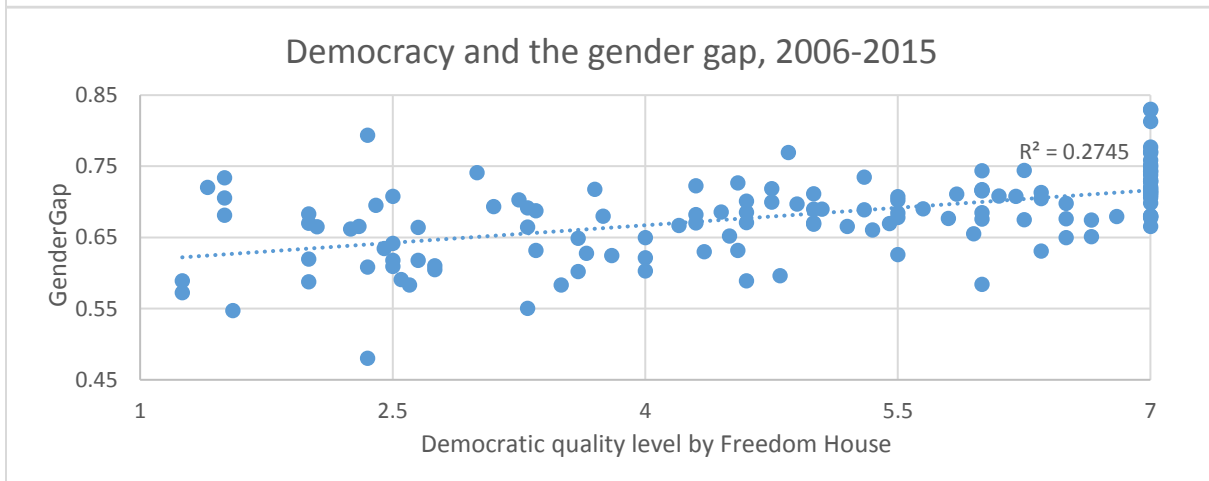
The threshold pattern observed in the PSOW graphs exists within the GenderGap analysis as well, but once again weaker—suggesting that a high democratic quality is a necessary but not sufficient condition for a small gender gap. All but two countries with a gender gap smaller than

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[10] The correlation coefficient, a value between 0 and 1, is a measure of the extent two variables vary together, where 1 is perfect correlation and 0 no correlation. In general, a correlation coefficient between 1 and 0.9 is considered a very high correlation, between 0.7 and 0.9 high correlation, 0.5 and 0.7 moderate correlation, 0.3 to 0.5 low correlation and below 0.3 negligible correlation. R Squared is a measure of correlational strength, specifically the percentage of variance in variable y that can be explained by the variance in x. Finally, Significance F is a measure of the probability that the calculated regression could have been obtained by chance. As a rule of thumb, a regression needs to have a Significance F score below 0.05 in order to be considered statistically significant.

0.75 are strongly democratic. The two clear exceptions are Rwanda scoring almost 0.8 in the GenderGap Index while being in the bottom of the democracy indices, and the Philippines, which has a GenderGap Index around 0.77 while being only a weak democracy.

LibDem		FreedomHouse		Polity	
Regression Statistics		*Regression Statistics*		*Regression Statistics*	
Multiple R	0.516384968	Multiple R	0.523936962	Multiple R	0.442063787
R Square	0.266653435	R Square	0.27450994	R Square	0.195420392
Significance F	1.98927E-10	Significance F	9.68977E-11	Significance F	9.98191E-08
Observations	133	Observations	133	Observations	133

GenderGap – Linear
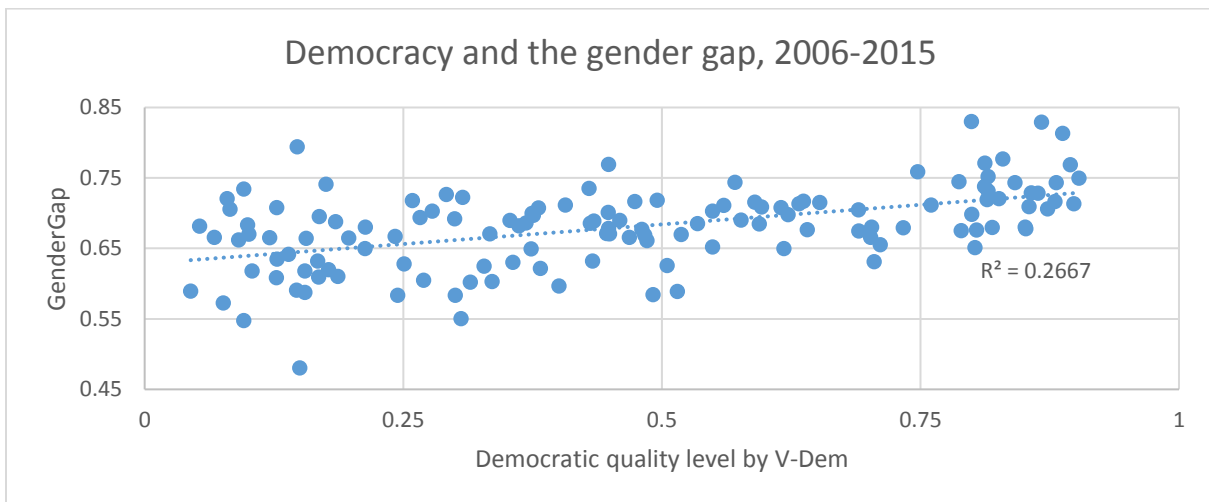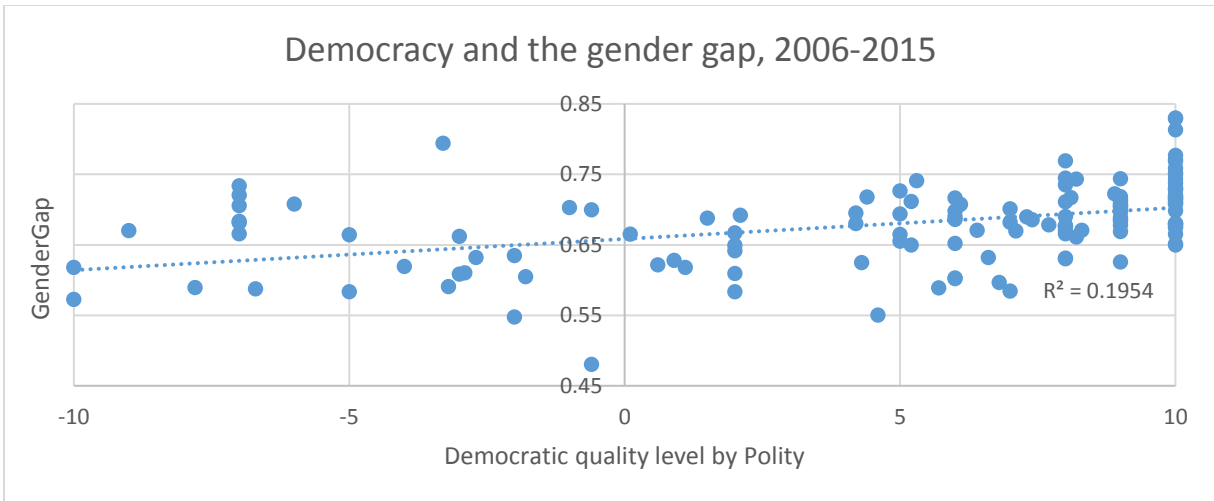
Democracy and the gender gap, 2006-2015

$R^2 = 0.2667$

Democracy and the gender gap, 2006-2015

$R^2 = 0.2745$

Democracy and the gender gap, 2006-2015

$R^2 = 0.1954$

GenderGap (y-axis)
Democratic quality level by Polity (x-axis)

Observing the scatter plots above, it is clear that the linear trend lines miss a larger pattern within the data. To better capture the observed pattern we use a cubic polynomial trend line.

GenderGap – Polynomial

Democracy and the gender gap, 2006-2015

$R^2 = 0.2826$

GenderGap (y-axis)
Democratic quality level by V-Dem (x-axis)

Democracy and the gender gap, 2006-2015

$R^2 = 0.298$

GenderGap (y-axis)
Democratic quality level by Freedom House (x-axis)

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Democracy and the gender gap, 2006-2015

The regression lines above show that our two variables, the quality of democracy and gender equality, most likely do not possess a linear correlation. The polynomial regression's higher R Square and Multiple R values (calculated from the R Squared values), in comparison to the linear one, support this assertion. Therefore, it seems that there is little to no correlation at lower levels of democracy. A stronger positive correlation only exists between democratic quality and gender equality at higher levels of democracy.

3.2.1   PSOW Index

Regarding the PSOW Index, the below regression analysis results echo the relatively strong correlation observed in the mean analysis. Furthermore, all countries with low PSOW scores are strong democracies, whereas countries with medium and high PSOW scores vary widely in their democracy scores. This relationship may suggest that a high quality of democracy is a necessary but not sufficient condition for low violence against women (e.g., China and Kazakhstan are the two exceptions).

LibDem		FreedomHouse		Polity	
Regression Statistics		*Regression Statistics*		*Regression Statistics*	
Multiple R	0.677825003	Multiple R	0.654128895	Multiple R	0.542239623
R Square	0.459446735	R Square	0.427884611	R Square	0.294023808
Significance F	3.44092E-22	Significance F	2.73558E-20	Significance F	2.73558E-20
Observations	155	Observations	155	Observations	155

Democracy and violence against women, 2007-2014

R² = 0.4594

PSOW

Democratic quality level by V-Dem

Democracy and violence against women, 2007-2014

R² = 0.4279

PSOW

Democratic quality level by Freedom House

Democracy and violence against women, 2007-2014
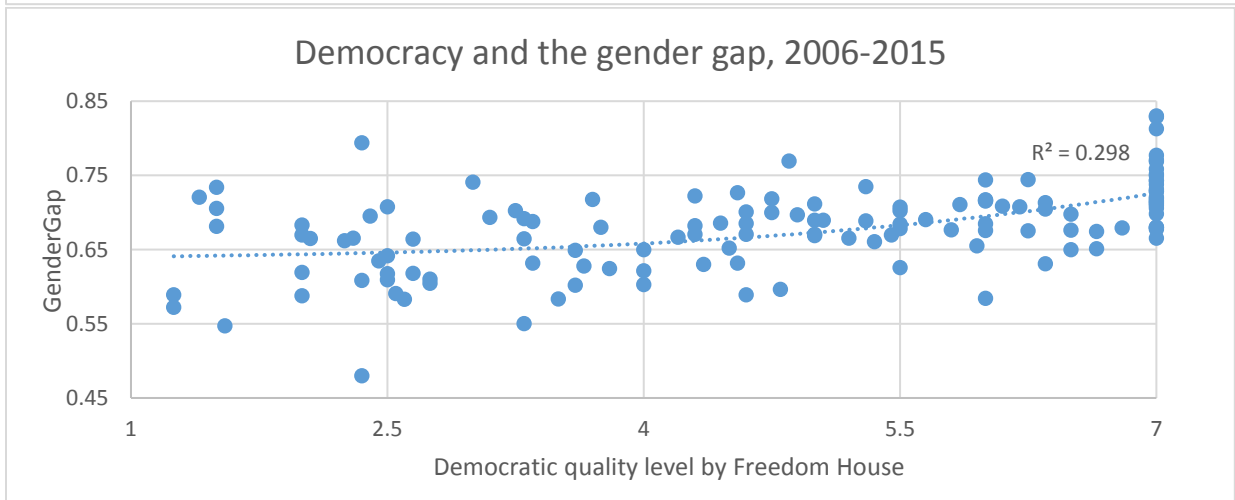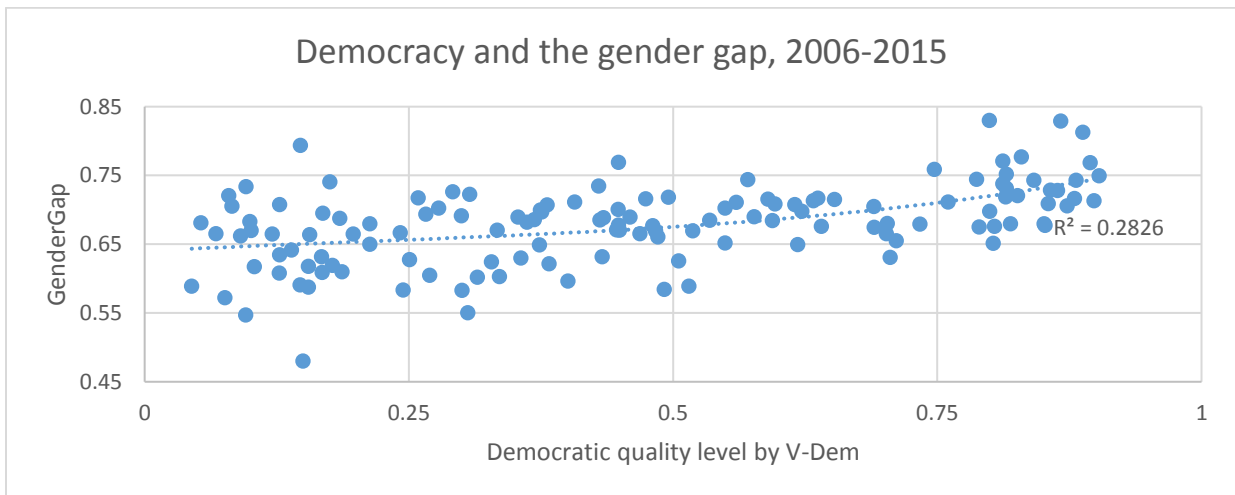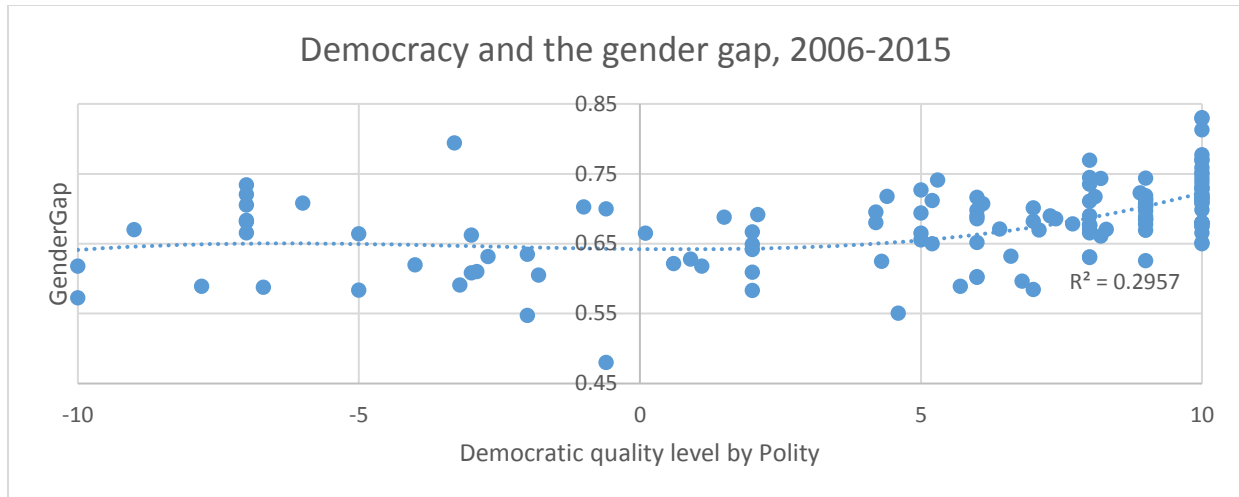

R² = 0.294

PSOW

Democratic quality level by Polity

Observing the scatter plots above, it is clear that the linear trend lines miss a larger pattern within the data. To better capture the observed pattern we use a cubic polynomial trend line.
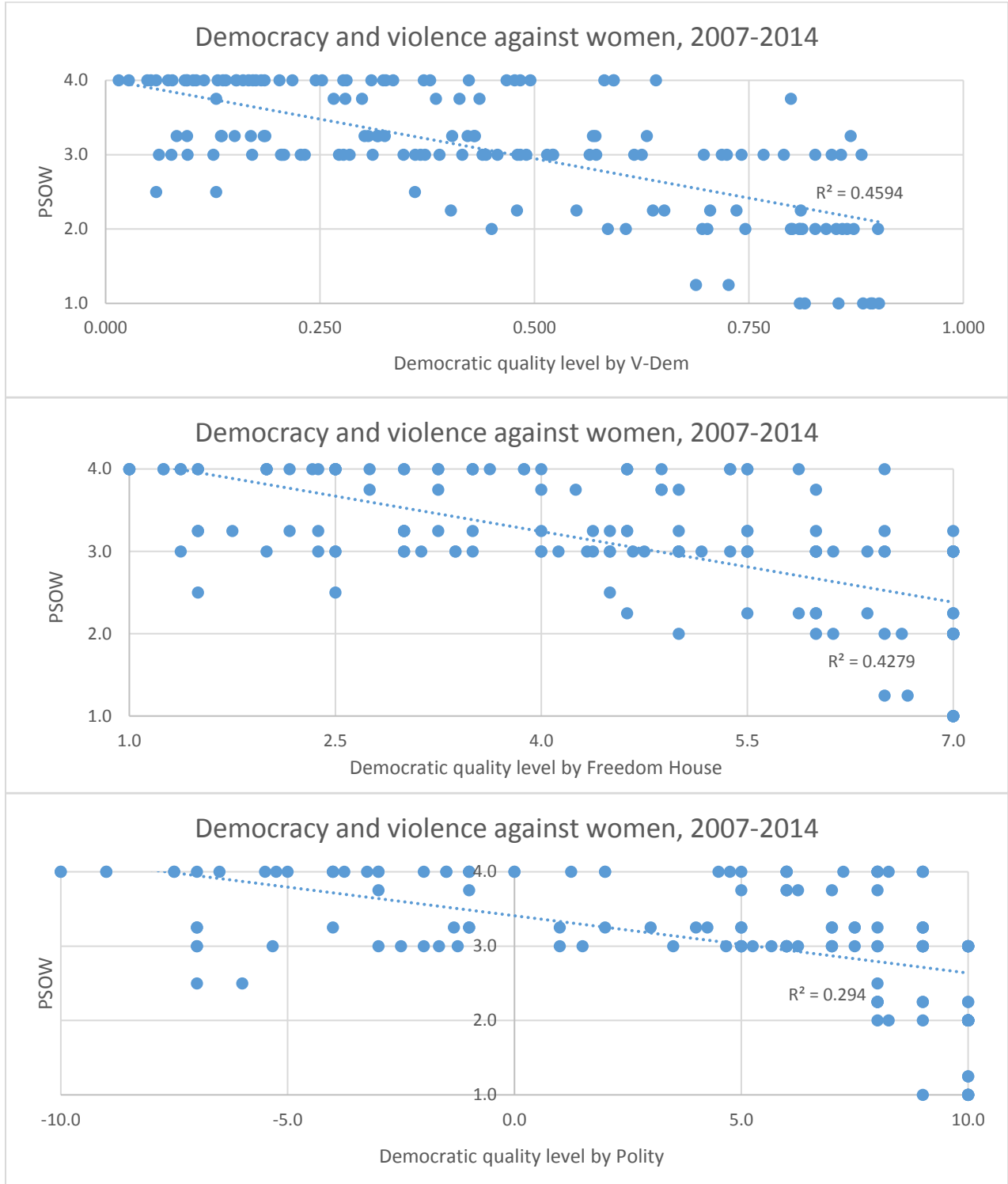
Democracy and violence against women, 2007-2014

Democracy and violence against women, 2007-2014

Democracy and violence against women, 2007-2014
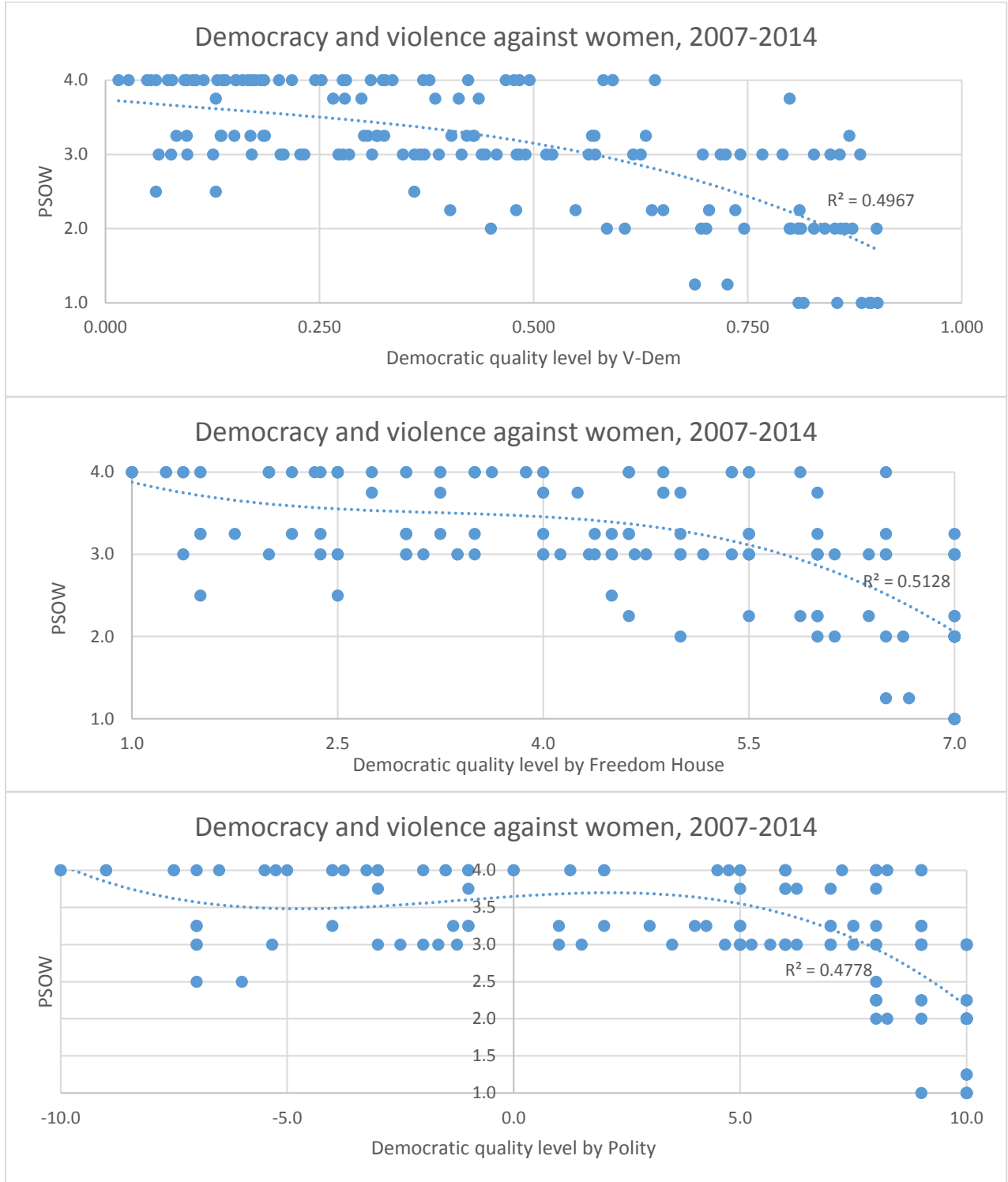
The regression lines above show that our two variables, the quality of democracy and women's physical security, most likely do not possess a linear correlation. The polynomial regression's higher R Square and Multiple R values (calculated from the R Squared values), in comparison to

the linear one, support this assertion. Therefore, it seems that there is little to no correlation at lower levels of democracy. A stronger positive correlation only exists between democratic quality and physical security of women at higher levels of democracy.

3.3   Data Inspection

Finally, we conduct data inspection to explain unusual variances in the data but also to identify if outlier countries share certain characteristics. Outliers are identified using a country's deviance from the mean (in the mean analysis) and residuals, the measurement of the difference between a predicted regression score and the actual score (in the regression analysis). The residual in this case is the distance between a country's actual gender equality score and its predicted gender equality score, in other words, how much more or less equal it is than the regression analysis' prediction. We define an outlier as a country that has a GenderGap score of +/-0.07 and a PSOW score of +/-1 from the mean in its democratic quality group, or has a residual of more than 30 percent of the entire scale. For example, this would be 1.2 for the 4-unit scale of PSOW (see *Supplements 5.3 and 5.4* for full lists).

3.3.1   GenderGap Index

With respect to the gender gap, Rwanda, followed by Northern European countries (Sweden, Finland, Norway, and Lithuania), the Philippines, Burundi, Belarus, and Cuba, all stand out as having a narrower GenderGap score (i.e., higher gender equality) than predicted by their level of democracy.[11]

	GenderGap - Narrower than predicted						
	Mean Analysis			Regression Analysis			
Country	LibDem	FreedomHouse	Polity	LibDem	FreedomHouse	Polity	Total
Sweden	x	x	x				3
Finland	x	x	x				3
Norway	x	x	x				3
Switzerland					x	x	2
Portugal						x	1
Lithuania				x	x	x	3
Philippines	x	x	x				3
Burundi	x	x	x				3
Rwanda	x	x	x	x	x	x	6
Belarus	x	x	x				3
Cuba	x	x	x				3
Laos					x	x	2

In contrast, Pakistan and Yemen have a wider GenderGap score than predicted by their level of democracy.

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[11] Rwanda's well-represented outlier position may reflect its successful gendered post-conflict transition in which women's empowerment has played a central role and women enjoyed the creation of gender quotas.

GenderGap - Wider than predicted							
	Mean Analysis			Regression Analysis			
Country	LibDem	FreedomHouse	Polity	LibDem	FreedomHouse	Polity	Total
South Korea	x						1
Mauritius		x	x				2
India			x				1
Mali	x	x	x				3
Benin	x	x	x				3
Turkey	x		x				2
Colombia					x		1
Nepal			x				1
Pakistan	x	x	x	x	x	x	6
Cote d'Ivoire	x		x				2
Morocco	x	x					2
Yemen	x	x	x	x	x	x	6
Chad	x	x	x				3
Saudi Arabia	x	x					2

3.3.2   PSOW Index

For the PSOW Index, outliers such as China, Austria, and Spain had less violence against women than predicted by their respective levels of democracy.

PSOW - Less violence than predicted							
	Mean Analysis			Regression Analysis			
Country	LibDem	FreedomHouse	Polity	LibDem	FreedomHouse	Polity	Total
Switzerland	x	x	x		x	x	5
France	x	x	x		x	x	5
Denmark	x	x	x		x	x	5
Sweden	x	x	x		x	x	5
Portugal	x	x	x		x	x	5
Austria	x	x	x	x	x	x	6
Spain	x	x	x	x	x	x	6
Italy			x	x	x	x	4
Bulgaria	x						1
Mauritius		x	x	x	x	x	5
Trinidad and Tobago	x						1
Belgium			x				1
Philippines		x					1
Paraguay	x		x				2
Kazakhstan	x	x	x	x		x	5
China	x	x	x	x	x	x	6

Conversely, countries such as Ghana, Botswana, Peru, and India had higher levels of violence against women than predicted by their respective levels of democracy.

Country	PSOW - More violence than predicted						
	Mean Analysis			Regression Analysis			
	LibDem	FreedomHouse	Polity	LibDem	FreedomHouse	Polity	Total
Estonia	x	x					2
Brazil	x			x			2
Ghana		x		x	x	x	4
Botswana		x		x	x	x	4
Macedonia			x			x	2
Peru		x	x	x		x	4
India		x	x	x		x	4
Indonesia		x				x	2
Mexico		x				x	2
Solomon Islands						x	1

Looking beyond the immediate data above, there are a few more noteworthy patterns. First, communist countries dominate among those who have poor democratic quality but lower levels of violence against women. Previously communist and currently authoritarian countries, such as Kazakhstan, Azerbaijan, and Angola, are also well-represented within this group. At the other end of the spectrum—countries that have strong democratic qualities but receive bad gender equality scores—one notably finds several South American and post-communist states which are now democratic, such as Estonia and the Czech Republic. The comparative levels of violence against women in the post-communist states are especially interesting. Most of these countries have a PSOW score around 3, yet widely different democracy scores, suggesting that democratization did little to improve the violence against women in these countries.[12]

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[12] The consensus within the literature on post-communist transitions, especially in Eastern Europe, is that the certain type of democratization – characterized by rapid marketization and minimization of government functions – failed to reshape the legacies of authoritarianism in terms of social relations. Hence, unlike other democracies, gender inequalities tend to be starker in these states. See, for example: Galligan, Yvonne, Sara Clavero, and Marina Calloni. *Gender politics and democracy in post-socialist Europe*. Barbara Budrich, 2007; Elaine S. Weiner, "No (Wo)Man's Land: The Post-Socialist Purgatory of Czech Female Factory Workers," *Social Problems* 52, no. 4 (2005): 572-92.

4 Conclusion

Overall, our findings suggest that strong democracies generally have smaller gender gaps and lower levels of violence against women.[13] The correlation with democracy is, however, stronger for the physical violence against women variable than the gender gap one. Furthermore, there is some evidence that the relationship between democracy, and (a) gender equality, or (b) women's physical security is not linear since R Squared values are higher for polynomial trend lines than linear ones. The PSOW analysis also shows moderate R Squared values, whereas the analysis of the gender gap shows low R Squared values, suggesting that the PSOW is a more powerful explanatory variable, although neither is strong enough to indicate a clear causation.[14] Our mean analysis shows little change in gender equality at lower democracy measurements with sharp inclines observed only at very high democracy levels.

Lastly, there is relatively strong evidence suggesting the existence of a democratic cutoff point required for low levels of violence against women and a small gender gap. As such, we conclude that gender equality increases with increased democratic quality only among established democracies, and that strong democratic qualities are a necessary but not sufficient condition for high gender equality.[15]

5 Supplement

5.1 Countries included in Gender Gap analysis

Albania	Costa Rica	India	Moldova	Slovenia
Algeria	Côte d'Ivoire	Indonesia	Mongolia	South Africa
Angola	Croatia	Iran	Montenegro	Spain
Argentina	Cuba	Ireland	Morocco	Sri Lanka
Armenia	Cyprus	Israel	Mozambique	Suriname

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[13] Our main findings fall within one of three main camps within the current literature, which is far from settled. As such, it contributes to the established empirical body of work which argues for the existence of a positive correlation between gender equality and democracy.
For other papers supporting this view, see: Balaev, Mikhail. "Improving models of democracy: the example of lagged effects of economic development, education, and gender equality." Social science research 46 (2014): 169-183; Beer, Caroline. "Democracy and gender equality." Studies in Comparative International Development 44, no. 3 (2009): 212-227; and Caprioli, Mary, Valerie M. Hudson, Rose McDermott, Bonnie Ballif-Spanvill, Chad F. Emmett, and S. Matthew Stearmer. "The Womanstats Project database: Advancing an empirical research agenda." Journal of Peace Research (2009).

[14] Note that this paper does not make any claims in regards to causal relationships. We can distinguish the existing research on democracy and gender equality into three broad camps. The most popular one argues that democracy tends to strengthen gender equality; the second camp reverses the causality, arguing that gender equality strengthens democracy. Finally, the third group argues that strengthened democracy and gender equality are caused by another variable such as economic growth.

[15] Varying strengths of correlation across the democratic spectrum is a well-established phenomenon within the literature. No recent paper to our knowledge has, however, observed the necessary but not sufficient nature of democratic quality we argue exists.
For a more thorough discussion regarding the need for segregating the analysis, see: Högström, John. "Do Development and Democracy Positively Affect Gender Equality in Cabinets?." Japanese Journal of Political Science 16, no. 03 (2015): 332-356.

Australia	Czech Republic	Italy	Namibia	Swaziland
Austria	Denmark	Jamaica	Nepal	Sweden
Azerbaijan	Dominican Republic	Japan	Netherlands	Switzerland
Bangladesh	East Timor	Jordan	New Zealand	Syria
Belarus	Ecuador	Kazakhstan	Nicaragua	Tajikistan
Belgium	Egypt	Kenya	Nigeria	Tanzania
Benin	El Salvador	Korea_South	Norway	Thailand
Bhutan	Estonia	Kyrgyzstan	Pakistan	Trinidad and Tobago
Bolivia	Ethiopia	Laos	Panama	Tunisia
Botswana	Fiji	Latvia	Paraguay	Turkey
Brazil	Finland	Lebanon	Peru	Uganda
Bulgaria	France	Lesotho	Philippines	Ukraine
Burkina Faso	Gambia	Liberia	Poland	United Kingdom
Burundi	Georgia	Lithuania	Portugal	United States
Cambodia	Germany	Macedonia	Qatar	Uruguay
Cameroon	Ghana	Madagascar	Romania	Venezuela
Canada	Greece	Malawi	Russia	Vietnam
Cape Verde	Guatemala	Malaysia	Rwanda	Yemen
Chad	Guinea	Mali	Saudi Arabia	Zambia
Chile	Guyana	Mauritania	Senegal	Zimbabwe
China	Honduras	Mauritius	Serbia	
Colombia	Hungary	Mexico	Slovakia	

5.2   Countries included in PSOW Analysis

Afghanistan	Congo	Haiti	Moldova	Somalia
Albania	Costa Rica	Honduras	Mongolia	South Africa
Algeria	Cote D'Ivoire	Hungary	Morocco	South Korea
Angola	Croatia	India	Mozambique	Spain
Argentina	Cuba	Indonesia	Namibia	Sri Lanka
Armenia	Cyprus	Iran	Nepal	Sudan
Australia	Czech Republic	Iraq	Netherlands	Suriname
Austria	D R Congo	Ireland	New Zealand	Swaziland
Azerbaijan	Denmark	Israel	Nicaragua	Sweden
Bangladesh	Djibouti	Italy	Niger	Switzerland
Belarus	Dominican Republic	Jamaica	Nigeria	Syria
Belgium	East Timor	Japan	Norway	Taiwan
Benin	Ecuador	Jordan	Pakistan	Tajikistan
Bhutan	Egypt	Kazakhstan	Panama	Tanzania

Bolivia	El Salvador	Kenya	Papua New Guinea	Thailand
Botswana	Eritrea	Kyrgyzstan	Paraguay	Togo
Brazil	Estonia	Laos	Peru	Trinidad/Tobago
Bulgaria	Ethiopia	Latvia	Philippines	Tunisia
Burkina Faso	Fiji	Lebanon	Poland	Turkey
Burma/Myanmar	Finland	Lesotho	Portugal	Turkmenistan
Burundi	France	Liberia	Qatar	Uganda
Cambodia	Gabon	Libya	Romania	Ukraine
Cameroon	Gambia	Lithuania	Russia	United Kingdom
Canada	Georgia	Macedonia	Rwanda	United States
Cape Verde	Germany	Madagascar	Saudi Arabia	Uruguay
Central African Republic	Ghana	Malawi	Senegal	Uzbekistan
Chad	Greece	Malaysia	Serbia	Venezuela
Chile	Guatemala	Mali	Sierra Leone	Vietnam
China	Guinea	Mauritania	Slovakia	Yemen
Colombia	Guinea-Bissau	Mauritius	Slovenia	Zambia
Comoros	Guyana	Mexico	Solomon Islands	Zimbabwe

5.3   Mean Analysis Outliers

GenderGap

LibDem				
Index	Average GenderGap	Positive Outliers (+0.07 from mean)	Negative Outliers (-0.07 from mean)	Members
SD	0.72	Sweden (0.81), Finland (0.83), Norway (0.83)	South Korea (0.63)	37
WD	0.68	Philippines (0.77)	Mali (0.59), Benin (0.58), Turkey (0.60)	38
WA	0.66		Pakistan (0.55), Cote d'Ivoire (0.58), Morocco (0.58)	29
SA	0.65	Burundi (0.74),Rwanda (0.79), Belarus (0.73), Cuba (0.72)	Yemen (0.48), Chad (0.55), Saudi Arabia (0.57)	29
FreedomHouse				
Index	Average GenderGap	Positive Outliers (+0.07 from mean)	Negative Outliers (-0.07 from mean)	Members
SD	0.72	Sweden (0.81), Finland (0.83), Norway (0.83)	Mauritius (0.65)	35
WD	0.69		Benin (0.58)	33
WA	0.66	Philippines (0.77)	Mali (0.59), Morocco (0.58), Pakistan (0.55)	33
SA	0.65	Burundi (0.74), Rwanda (0.79), Belarus (0.73), Cuba (0.72)	Yemen (0.48), Chad (0.55), Saudi Arabia (0.57)	32
Polity				
Index	Average GenderGap	Positive Outliers (+0.07 from mean)	Negative Outliers (-0.07 from mean)	Members
SD	0.72	Sweden (0.81), Finland (0.83), Norway (0.83)	Mauritius (0.65), India (0.63)	47
WD	0.68	Philippines (0.77)	Benin (0.58), Turkey (0.60), Nepal (0.60),	35
WA	0.66	Burundi (0.74)	Mali (0.59), Pakistan (0.55), Cote d'Ivoire (0.58)	24
SA	0.64	Rwanda (0.79), Belarus (0.73), Cuba (0.72)	Yemen (0.48), Chad (0.55)	27

Physical Security of Women (PSOW)

LibDem				
Index	Average PSOW	Positive Outliers (-1 from mean)	Negative Outliers (+1 from mean)	Members
SD	2.13	Switzerland (1), France (1), Denmark (1), Sweden (1), Portugal (1), Austria (1), Spain (1)	Estonia (3.25), Brazil (3.75)	39
WD	3.14	Bulgaria (2), Trinidad and Tobago (2), Paraguay (2)		40
WA	3.45			38
SA	3.64	Kazakhstan (2.5), China (2.5)		38
FreedomHouse				
Index	Average PSOW	Positive Outliers (-1 from mean)	Negative Outliers (+1 from mean)	Members
SD	2.03	Switzerland (1), France (1), Denmark (1), Sweden (1), Portugal (1), Austria (1), Spain (1)	Estonia (3.25)	32
WD	2.98	Mauritius (1.25)	Ghana (4), Botswana (4), Peru (4), India (4), Indonesia (4), Mexico (4)	39
WA	3.43	Philippines (2.25)		40
SA	3.63	Kazakhstan (2.5), China (2.5)		44
Polity				
Index	Average PSOW	Positive Outliers (-1 from mean)	Negative Outliers (+1 from mean)	Members
SD	2.32	Switzerland (1), Denmark (1), Sweden (1), Portugal (1), Austria (1), Spain (1), Italy (1.25), Mauritius (1.25), France (1)	Peru (4), India (4), Macedonia (4)	48
WD	3.24	Paraguay (2), Belgium (2)		39
WA	3.44			34
SA	3.63	Kazakhstan (2.5), China (2.5)		34

5.4   Residuals

GenderGap[16]

LibDem		FreedomHouse		Polity	
Country	Residuals	Country	Residuals	Country	Residuals
Yemen	-0.1649	Yemen	-0.1599	Yemen	-0.1755
Pakistan	-0.1120	Colombia	-0.1154	Pakistan	-0.1283
Lithuania	0.1128	Pakistan	-0.1052	Laos	0.1066
Rwanda	0.1492	Laos	0.1078	Portugal	0.1104
		Switzerland	0.1129	Switzerland	0.1265
		Lithuania	0.1139	Lithuania	0.1275
		Rwanda	0.1539	Rwanda	0.1502

PSOW[17]

LibDem		FreedomHouse		Polity	
Country	Residuals	Country	Residuals	Country	Residuals
Brazil	1.44	Ghana	1.48	India	1.28
Ghana	1.35	Botswana	1.30	Peru	1.28
Peru	1.25	Italy	-1.23	Macedonia	1.28
India	1.25	Mauritius	-1.27	Indonesia	1.23
Botswana	1.23	Portugal	-1.38	Ghana	1.21
Italy	-1.22	Spain	-1.38	Solomon Islands	1.21
Kazakhstan	-1.24	France	-1.38	Botswana	1.21
Austria	-1.28	Austria	-1.38	Mexico	1.21
Spain	-1.29	Sweden	-1.38	Kazakhstan	-1.37
Mauritius	-1.30	Denmark	-1.38	Mauritius	-1.39
China	-1.38	Switzerland	-1.38	Italy	-1.39
		China	-1.46	China	-1.45
				Portugal	-1.64
				Spain	-1.64
				Austria	-1.64
				Sweden	-1.64
				Denmark	-1.64
				Switzerland	-1.64
				France	-1.72

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[16] Negative numbers denote countries that have a wider gender gap than the regression analysis suggest that they should have, and positive numbers denote countries that have a narrower gender gap than the regression analysis suggest that they should have.

[17] Positive numbers denote countries that have more violence against women than the regression analysis suggest that they should have, and negative numbers denote countries that have less violence against women than the regression analysis suggest that they should have.