The Link between the Adoption of Policies Addressing Violence Against Women and Women’s Descriptive Representation in Parliaments
- Empirical Evidence from a Time-Series Cross-National Analysis

Woo, Byung-Deuk*

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초록
Violence against women is a severe global problem threatening women’s health and rights. Despite the consensus among countries on the adverse effects of violence against women on abused women and society, there are variations among countries in the adoption of policies about violence against women. While some countries swiftly adopt policies related to the violence, others still do not have policies addressing violence against women. This article explains the variations based on the different levels of women’s descriptive representation in parliaments among countries. With a time-series cross-national data about the adoption of policies addressing violence against women in 127 countries from 1975 to 2016, this article using panel data regression models finds that a higher percentage of women in parliaments leads countries to adopt more policies addressing violence against women. This relationship is consistently statistically significant in alternative model specifications. This article not only provides a policy

* Ph.D, Candidate in the Political Science Department, the University of Iowa
byung-deuk-woo@uiowa.edu
implication about the adoption of legislative gender quotas, especially reserved seats legislative quotas, but also contributes to the literature of women in politics.

**Key words:** Violence against Women, Women’s Descriptive Representation, the Adoption of Policies

1. **INTRODUCTION**

Violence against women which is the most common crime with the lowest punishment around the world has been recognized as a serious global problem degrading women’s health and rights (Alesina, Brioschi, and La Ferrara 2021; Machado et al, 2020; Khanlarzadeh and Jiryaee 2021; Ahn 2020; Lee 2018). As incredibly high rates of sexual harassment, sexual violence, trafficking, stalking, violence in intimate relationships, and other forms of violence against women are reported, the tremendous economic and social costs of violence against women both at national and individual levels are widely discussed in the United Nations General Assembly (Duvvury, Carmey, and Minh 2012; Reeves and Meyer 2021).

With the consensus on the enormous costs of violence against women, many countries adopt series of policies, including the one-stop center for abused women, psycho-social counseling, and legal reform, to address violence against women (Htun and Weldon 2012). However, others still do not provide such policies to protect women from violence. Why some countries swiftly introduce policies to address violence against women, while others do not? Even though the importance of the presence of domestic policies combating violence against women to solve the
problem has been emphasized by scholars (Jennings, Powers, and Perez 2021; García-Moreno et al, 2015; Mogale, Burns, and Richter 2012), there are surprisingly few empirical studies examining the main factor driving the adoption of such policies.

Given that the adoption of policies highly depends on the aggregated decision-making in the legislative branch, the influence of the composition of the legislature should be examined first to understand the differences among countries in policy adoptions. Thus, this article tries to explain the variations of the adoption of policies about violence against women with the focus on the different levels of women’s descriptive representation in parliaments across countries based on the previous literature demonstrating that women representatives tend to pay more attention to women-friendly policies.

By conducting a time-series cross-national analysis about 127 countries from 1975 to 2016 about the adoption of policies combating violence against women, this article provides empirical evidence for the positive influence of women’s descriptive representation on the adoption of policies about violence against women. To be specific, this article demonstrates that a country with a higher percentage of women representatives in parliaments tends to introduce more policies eradicating violence against women and supporting abused women, which association is consistently robust in various model specifications.

The rest of this article proceeds as follows. In the next section, the definition of violence against women, various problems caused by the violence, and the variations in the adoption of policies addressing the violence among countries will be discussed. Then, the theories and the hypothesis about the association between the adoption of policies
combating violence against women and women’s descriptive representation will be introduced. In the Empirical Analysis section, data, variables, model specifications, and empirical results will be demonstrated. Finally, this article concludes by discussing the contributions of this article with limitations and by suggesting future research topics.

2. THE PROBLEM OF VIOLENCE AGAINST WOMEN

Violence against women (VAW) defined as “any act of gender-based violence that results in, or is likely to result in, physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life” is one of the most severe and widespread problems. Globally, around thirty-five percent of women have ever been exposed to sexual intimate partner violence or sexual violence by a non-partner (UN Women). Further, over two hundred million women and girls who are aged 15-49 years have experienced female genital mutilation (UN Statistics). Given that the statistics are only based on the officially reported cases, more women would have experienced the violence.

Violence against women can negatively affect women’s lives in many ways including depression, anxiety disorders (Carlson, McNutt, and Choi 2003), post-traumatic stress disorder (Wuest et al, 2009), emotional distress, thoughts of suicide, suicide attempts (Devries et al, 2011), alcohol and drug dependencies (Danielson et al, 1998), and
obsessive-compulsive disorder (Koss 1990). Violence against women also hurts the national economy because it prevents women from participating the economic activities (True 2012). Even some scholars argue that violence against women even harms the national security of a country (Mason 2013). Violence against women is subject not only to developing but also to developed countries regardless of the social status of women, For instance, some of women representatives in the United States including Alexandria Ocasio-Cortez, Jackie Speier, and Linda Sanchez argued that they have experienced sexual harassment or violence from their male colleagues (The Conversation 2020).

The consensus of the severity and the negative impacts of violence against women is formed among countries with the need to eradicate violence against women, In the 1995 Beijing Declaration and Platform for Action, the global call to eliminate all forms of violence against women and girls is embraced (Pietrobelli et al, 2020). The Strategic Objective D.1 of the Beijing Declaration urges countries to implement integrated measures to address violence against women, In addition, the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) defines violence against women as a severe threat against women (Akurugu 2021). CEDAW provides legal advice and policy recommendations to lessen the problem of violence against women for countries that ratified CEDAW.

With the international agreement that the problem of violence against women should be addressed, many countries adopt comprehensive policies eradicating violence against women and helping abused women. Most previous works on violence against women have emphasized the presence of policies handling violence against women
as the very first step not only to eradicate the violence but also to care for the victims (MacManus and Van Hightower 1989; Corcoran and Allen 2005; Avdeyeva 2007; Weldon and Htun 2013; Sanz-Barbero et al, 2018; Jennings et al, 2021; Keefe and Hahn 2020). For instance, Jennings et al. (2021) demonstrate that the adoption of the Violence Against Women Act (VAWA) contributes to crime reduction in the U.S, and Keefe and Hahn (2020) show that housing assistance and counseling policies for abused women helps them to return to their normal lives. Even though the adoption of policies combating violence against women is not the only determinant of the level of violence against women (Alesina, Brioschi, and La Ferrara 2016; Nayak et al, 2003), the existence of such policies tends to promote the violence-free lives of women and to create social norms against the violence (Michau et al, 2015; Bourey et al, 2015; Li et al, 2021). However, according to the data from UN Women, more than thirty countries around the world still do not have laws to punish sexual violence or sexual harassment. Further, over seventy countries do not have any budget plan to successfully address violence against women and only forty-four countries provide psycho-social counseling for the victims of violence against women.

Unveiling the leading factor of the adoption of policies addressing violence against women is not only academically meaningful but also crucial to explain the variations among countries and to find practical ways to reduce the various costs imposed by violence against women. As mentioned earlier, given that the importance of the composition of the legislative branch in the policy-making process, this article examines the adoption of policies about violence against women through the lens of women’s descriptive representation in parliaments.
3. THE ROLE OF WOMEN’S DESCRIPTIVE REPRESENTATION IN THE ADOPTION OF POLICIES FOR WOMEN

How does women’s descriptive representation affect the adoption of policies about violence against women? This article relies on previously established theoretical backgrounds in the literature of women in politics to theorize the link between the adoption of policies addressing violence against women and women’s descriptive representation in parliament. This article defines political representation as an activity of making voters “present” in policy-making processes and descriptive representation as a body mirroring the characteristics including gender and race of the represented groups. In other words, descriptive representation is “standing for” representation (Celis and Childs 2008; Pitkin 1967).

The politics of presence theory developed by Phillips (1995) gives us the theoretical background for the causal link between women’s descriptive representation and the adoption of policies addressing violence against women, Phillips (1995) claims that gender is an influential factor of the women-friendly policy adoptions as below.

“Women have distinct interests in relation to child-bearing (for any foreseeable future, an exclusively female affair); and as society is currently constituted they also have particular interests arising from their exposure to sexual harassment and violence, their unequal position in the division of paid and unpaid labor and their exclusion from most arenas of economic or political power,” (Phillips 1995, 67 – 68)

The potential of the link between women’s descriptive representation
and the adoption of policies about violence against women comes from the women’s specific positions in society and their shared experiences or identity (Mansbridge 1999; Swers 2002; Espírito-Santo, Freire, and Serra-Silva 2020; Wolak 2019). Phillips (1995) argues that there are different experiences shared by men and women in societies and everyday life.

The differences are rooted in many situations such as child-rearing, education and occupations, divisions of paid and unpaid labor, and exposure to sexual violence or sexual harassment. Based on the assumption that female representatives share their life experiences with female citizens or voters, the presence of women legislators increases the probability that women’s interests will be represented, women’s voices will be heard, and further women’s needs will be fulfilled in policy adoptions. The interviews with legislators and legislative staffers provide evidence for the politics of presence theory (Burden 2007; Grose 2011; Swers 2002; Swers 2013).

Even earlier, Kanter (1977)’s critical mass theory also supports the importance of women representatives in the adoption of policies for women. The critical mass theory is that a certain proportion of the parliament or legislature should be composed of female representatives for them to make a difference (Kanter 1977; Dahlerup 1988; Hinojosa, Carle, and Woodall 2018; McEvoy 2016). When the proportion of female representatives reaches a certain point, women legislators can not only work more efficiently together to promote women-friendly policies but also make male counterparts accept the bills aiming to deal with women’s concerns (Celis 2007).

Other scholars provide additional support for the influence of
women’s descriptive representation on the adoption of policies for women through historical contexts (Mansbridge 1999; Sapiro 1981; Williams 2000; Mendelberg, Karpowitz, and Goedert 2014; Mansbridge 2015). Especially, the crucial work from Mansbridge (1999) theorizes that subordinate groups including women who have been historically excluded from political areas tend to be less represented in policy areas by the dominant groups. In this context, the increased number of female representatives creates the bond between female representatives and citizens because of their same identities. In turn, Mansbridge (1999) argues that the descriptive representation is likely to create the attachment to the polity of members of the historically excluded groups and to reflect the interests of the isolated groups’ interests into policy areas.

Despite those elaborated theories about the link between women’s descriptive representation and the adoption of policies combating violence against women, previous empirical results about this theme are mixed at best because of the lack of well-developed time-series cross-national studies (Courtemanche and Green 2017; Wängnerud 2009; Paxton, Kunovich, and Hughes 2007). Some scholars demonstrate that the presence of women legislators is not translated into policy adoptions related to women’s issues such as violence against women (Reingold and Smith 2012; Franceschet and Piscopo 2008; Mechkova and Carlitz 2021; Kittilson 2006). For example, Mechkova and Carlitz (2021) focusing on sub-Saharan Africa show that women’s descriptive representation is not always translated into women’s substantive representation in policy outcomes for women.

On the contrary, other previous case and comparative studies
demonstrate the association between women’s descriptive representation and the adoption of policies for women (Berkman and O’connor 1993; Bratton and Ray 2002; Caiazza 2004; Li-Ju 2008; Crowley 2004; Thomas 1991; Tolbert and Steuernagel 2001; Cowell-Meyers and Langbein 2009). Related to the United States, Cowell-Meyers and Langbein (2009) find evidence that a higher level of women’s descriptive presentation in state legislatures leads to the adoption of state-level policies favoring women. More recently, Eckhouse (2019) reveals that descriptive representation increases criminal justice by conducting a case study in the United States.

Studies about the link between women’s descriptive representation and the adoption of policies for women are not confined only to the U.S. but also conducted with a focus on other countries in various regions in the world. Bratton and Ray (2002) investigate the link between women’s descriptive representation and the provision of childcare with the focus on the Norwegian municipalities. They show that the proportion of women in the council leads the provision of childcare by using Ordinary Least Square (OLS) regressions. Also, argue that women representatives tend to introduce policies for women even in undemocratic countries based on a case study about sub-Saharan African countries. In addition, Rashkova (2021) and Tam (2017) find empirical support that women’s descriptive representation in parliaments in semi- and non-democratic countries has substantial impacts on the adoption of women-friendly policies.

Based on the above mentioned elaborated theories conventionally used to empirically examine the positive influence of women’s descriptive representation on the adoption of policies for women and empirical evidence from the previous studies, I expect that higher
women’s descriptive representation leads countries to adopt more policies combating violence against women, while other things are held at constant. Given that the lack of time-series cross-national studies on this topic leads to the mixed results about the impact of women’s descriptive representation, this article also contributes to the literature of women in politics by testing the generalizability of the conducive influence of women’s descriptive representation on the adoption of policies for women.

4. EMPIRICAL ANALYSIS

To examine the relationship between women’s descriptive representation in parliaments and the adoption of policies combating violence against women, this article conducts time-series cross-national analysis about 127 countries from 1975 to 2016 based on various cross-national databases. Thus, the unit of observation is a country-year. The usage of the time-series cross-national data not only methodologically enables us to make causal inferences but also provides us a valuable opportunity to unveil the driving factors of the adoption of policies addressing violence against women over decades. Thus, in turn, the analysis based on the time-series cross-national data will give us an insight about how to facilitate the adoption of policies addressing violence against women.
1) DATA

(1) Independent Variable

As an independent variable, Women in Parliament (%) standing for the percentage of women in lower houses is used to measure the degree of women’s descriptive representation in a country. This article employs the historical data on women in national parliaments generated from the Inter-Parliamentary Union (IPU). Given that the IPU tracked the percentage of women in parliaments with the information about the first woman in parliament, the historical database provides us a valuable opportunity to apply time-series cross-national analysis.

(2) Dependent Variable

Measuring the adoption of policies combating violence against women is not new. Previously, some scholars build measurements for a global study of violence against women with the consideration of different types of policies (Weldon 2002, 2006; Htun and Weldon 2012). Especially, Htun and Weldon (2012) use a continuous scale ranging from 0 to 10. Their measure is based on the information about how many policies each country has in order to deal with violence against women.\(^1\) Even though their measure is appropriate to unveil factors of policy changes about violence against women, it is hard to directly employ their measure on a time-series cross-national study because their measure is

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1\) Htun and Weldon (2012)’s measure is constructed based on the information about services to victims, legal reform, policies or programs targeted to vulnerable populations of women, training professionals, and prevention programs. Those components are also considered in this article,
limited to certain years (1975, 1985, 1995, and 2005).

To assess the influence of women’s descriptive representation on the adoption of policies about violence against women, this article builds the *violence against women (VAW) Policy Score* based on the global database on violence against women from UN Women. Previously time-series measures to track policy adoptions about violence against women are underdeveloped because of the problems to collect the whole policy information across countries over time. The global database on violence against women provides detailed information about government policies handling violence against women including laws, regulations, budget plans, etc. across countries, which gives a valuable opportunity to compare the adoption of policies cross-nationally over decades. The VAW policy score is calculated based on the eight categories: law, regulation, national strategy about violence against women, budget plan, services for the victims, protocol and training, prevention, and education.

First, this article considers whether a country has a domestic law to penalize violence against women. The existence of law should be considered because punishment is not possible without the law and the law is adopted when there is a perception that violence against women is problematic. Second, the adoption of regulation about violence against women is also considered. Despite the variations among countries, countries’ internal regulations about violence against women have been considered one of the effective ways to control various forms of violence and studied by scholars as crucial ways to protect women (García-Moreno and Riecher-Rössler 2013; Merry 2003).

The development of a national strategy specific to violence against
women is also counted. Defined as the verified written document or plan declaring that violence against women is the imminent problem and showing the government’s commitment to solving the problem, the national strategy about violence against women has been examined as the initial step to combat violence against women in previous studies (Yodanis 2004; Krook 2020). Even though the national strategy is a plan, scholars have demonstrated that the adoption of the national strategy itself is conducive to handle the problem of violence against women (Kelly 2005; Bettinger-Lopez 2018). Thus, this article includes the development of a national strategy as one of the components of the VAW policy score.

The VAW policy score is additionally determined by whether a country has a budget plan to respond to violence against women. Budget commitments are the prerequisite to successfully develop policies about violence against women and to monitor violence against women across various sectors (García-Moreno et al., 2015). Without a decent and official budget plan, the existing policies are also hard to be implemented successfully. In addition to the budget plan, various services including referral services, shelter accommodation, psycho-social counseling, and other legal assistance for abused women are counted. Those services from governments help women not only to terminate the abusive relationship but also to maintain their integrity (Crenshaw 1989; Richie and Kanuha 2000).

Besides the direct support for the abused women and penalization on the criminal, countries’ additional efforts to reduce violence against women are also crucial (Coomarawsamy 2003; Saltzman et al. 2000; Minas 1993). Therefore, instead of focusing only on the supports and
penalization, the VAW policy score considers other social policies such as protocol and training, the provision of prevention, and that of education. Those social policies coordinating with other legal tools are effective to reduce the rate of violence (Garcia-Moreno 2002; Byrnes and Bath 2008; Åsling-Monemi et al. 2003).

This article also tries to reflect the detailed differences among policies as much as possible by specifying services into seven, and protocol and training into six subcategories. Also, both the provision of prevention and education is divided into two additional categories.

(Table 1) The Components of the VAW Policy Score

<table>
<thead>
<tr>
<th>Does a country have a law about VAW?</th>
<th>1 point if yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does a country have a regulation about VAW?</td>
<td>1 point if yes</td>
</tr>
<tr>
<td>Does a country have a national strategy specific to VAW?</td>
<td>1 point if yes</td>
</tr>
<tr>
<td>Does a country have budget plan (government allocation) for VAW?</td>
<td>1 point if yes</td>
</tr>
<tr>
<td>Does a country provide services for victims of VAW?</td>
<td>1 point if yes for each</td>
</tr>
<tr>
<td>Referral services Integrated Services Delivery One-Stop Center Shelter/Safe Accommodation Psycho-Social Counselling Hotline/Helpline Long-Term Service (Employment, Housing, Finance, etc.)</td>
<td></td>
</tr>
<tr>
<td>Does a country provide protocol and training about VAW?</td>
<td>1 point if yes for each</td>
</tr>
<tr>
<td>Does a country provide prevention about VAW?</td>
<td>1 point if yes for each</td>
</tr>
<tr>
<td>Awareness-Raising Campaigns Community Mobilization</td>
<td></td>
</tr>
<tr>
<td>Does a country provide education about VAW?</td>
<td>1 point if yes for each</td>
</tr>
<tr>
<td>Formal Education Non-Formal Education</td>
<td></td>
</tr>
</tbody>
</table>
Table 1 illustrates the components of the VAW policy score. One point is added when a country equips with the corresponding policy. As Htun and Weldon (2012) and other previous measures of policy adoptions, this article uses an additive function to calculate the VAW policy score rather than arbitrarily giving weights for individual policies. For instance, if a country has a law and regulation combating violence against women in 2000, the VAW policy score for the country is 2 in 2000. Thus, the VAW policy score ranges from 0 to 21. It means that the most responsive countries toward violence against women score 21 and the least countries score 0.

(3) Control Variables

The adoption of policies about violence against women can be determined by other potential factors. Thus, controlling the relevant variables which can affect the adoption of public policies combating violence against women is essential to avoid the omitted variable bias and to unveil the independent impact of women’s descriptive representation. Omitting relevant variables can bias the beta coefficients and lead to wrong inferences (Wooldridge 2016; Clarke 2009). Thus, beyond the main predictor, this article controls for a series of factors based on the previous relevant literature.

First, the level of democracy is controlled. Previous literature finds that democratic countries tend to have women-friendly welfare policies including maternity leave laws or regulations for gender equity and

2) Primary information such as the adoption year of each component can be accessed through the global database on violence against women from UN women: https://evaw-global-database.unwomen.org/en,
those countries are more likely to protect women’s rights (Orenstein 2008; Haggard and Kaufman 2008). Also, *GDP per capita* is included as one of the control variables. This decision is founded on the expectations from the variants of modernization theory that predicts the wealthier and more industrialized countries tend to equip more progressive policies for women (Inglehart, Norris, and Ronald 2003; Wilensky 1974).

Also, this article controls the ratification of the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) to examine the independent influence of women’s descriptive representation. Previous studies on CEDAW unveil significant impacts of CEDAW on policy changes about violence against women (Englehart and Miller 2014; True and Mintrom 2001). Even though there are debates about how and whether international treaties affect individual countries’ policy outcomes (Hill Jr 2010; Avdeyeva 2007; Neumayer 2005), this article controls the influence of the ratification of CEDAW rather than runs the risk of omitted variable bias.

*Women’s Property Rights* and *Women’s Civil Society Organization (CSO) participation* are also involved as controls in the empirical models. Some scholars have demonstrated the importance of women’s property rights to the adoption of policies for women (Mishra and Sam 2016; Deere and De Leal 2014; Pradhan, Meinzen-Dick, and Theis 2019) and others show that women’s participation in various civil society organization or women’s autonomous movements can lead countries to improve policies for women (Htun and Weldon 2012; Weldon 2004). Thus, including those two variables is crucial to examine the independent impact of women’s descriptive representation.
Furthermore, the left-right scale ideological position of ruling political parties is controlled. Many case and comparative studies about the adoption of policies for women have been including the ideology of the governing party as a control variable (Piovesan 2009; Smulovitz 2015; Weldon 2006) and it has been considered that left-wing political parties or governments are more likely to adopt feminist policies in general (Mazur 2002; Norris 1987; Lovenduski and Norris 1993). However, some recent studies demonstrate that the strength of leftist parties does not have a significant effect on the implementation of laws about violence against women (Beer 2017; Weldon and Htun 2013). Given the debate about the governing party’s ideology on policy adoptions, Government Ideology is included as a control variable.

Also, this article controls each country’s political fractionalization which is the index developed by Beck et al., (2001). This index measures the probability that two members of legislatures from governing parties are in different parties. Previous literature has been unveiled the detrimental consequences of the political fractionalization on developmental issues such as social capital (Poteete 2009; Bjorvatn, Farzanegan, and Schneider 2012) and the lower provision of public goods (Enikolopov and Zhuravskaya 2007) because of the political heterogeneity leading countries to emphasize the policies providing private goods rather than public goods. Political fractionalization is also closely correlated with ethnolinguistic fractionalization imposing similar negative impacts on public goods provision (Alesina, Glaeser, and Glaeser 2004; Kaya and Cook 2010). Therefore, this article considers the expected negative influence of political fractionalization on policy outcomes about violence against women.
The severity of violence against women also can affect the adoption of policies about violence against women. There are no reliable time-series cross-national data about the level of violence against women because the official crime data is sometimes used to show the government’s effectiveness toward violence against women (Weldon and Htun 2013). Rather than merely omitting this factor, however, this article uses the measure of political violence from the Major Episodes of Political Violence database (Marshall 2019) because this measure has a high correlation with violence against women (Moser and Clark 2001; Pankhurst 2012).

Lastly, this article includes year and country random effects to control the observed and unmeasured influence of country and year specific factors such as international and regional norms about violence against women, political culture, tradition, etc. The inclusion of the random effects allows me to isolate the influence of the key independent variable from potential latent factors which can cause omitted variable bias (Torres-Reyna 2007; Firebaugh, Warner, and Massoglia 2013).

Table 2 demonstrates the descriptive statistics of all variables with the variable types, data sources, and coding rules used in the empirical analysis. Considering that the changes in the social, economic, and political factors do not translate into the adoption of policies immediately (Jacobs and Page 2005; Moreno-Sanchez, Kraybill, and Thompson 2003), all independent and control variables are lagged by one year. The lagged identification of explanatory variables can also alleviate the concerns of false causal inference and simultaneity problem (Reed, 2015).
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(Table 2) Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Types of Variables</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>Data Source and Coding Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAW Policy Rate</td>
<td>Continuous</td>
<td>2.628</td>
<td>3.985</td>
<td>0.000</td>
<td>20.000</td>
<td>Source: UN Global Database on Violence against Women</td>
</tr>
<tr>
<td>Women in Parliament (%)</td>
<td>Continuous</td>
<td>11.811</td>
<td>10.722</td>
<td>0.000</td>
<td>53.180</td>
<td>Source: IPUMS Database</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>Continuous</td>
<td>13.211</td>
<td>6.946</td>
<td>-10.000</td>
<td>30.000</td>
<td>Source: The Maddison Project Database (Bell et al., 2018)</td>
</tr>
<tr>
<td>Women's Property Rights</td>
<td>Continuous</td>
<td>0.835</td>
<td>1.314</td>
<td>-3.750</td>
<td>2.822</td>
<td>Source: V-Dem (Coppedge et al., 2019)</td>
</tr>
<tr>
<td>Women's CSO participation</td>
<td>Continuous</td>
<td>1.045</td>
<td>1.088</td>
<td>-2.956</td>
<td>3.220</td>
<td>Source: V-Dem (Coppedge et al., 2019)</td>
</tr>
<tr>
<td>Government Ideology</td>
<td>Categorical</td>
<td>1.0A4</td>
<td>0.935</td>
<td>0.000</td>
<td>2.000</td>
<td>Source: Quality of Government (Tsebel et al., 2018)</td>
</tr>
<tr>
<td>Government Fractionalization</td>
<td>Continuous</td>
<td>0.202</td>
<td>0.269</td>
<td>0.000</td>
<td>0.940</td>
<td>Source: V-Dem (Coppedge et al., 2019)</td>
</tr>
<tr>
<td>Political Violence</td>
<td>Continuous</td>
<td>0.719</td>
<td>1.720</td>
<td>0.000</td>
<td>5.300</td>
<td>Source: Major Episodes of Political Violence (Marshall, 2019)</td>
</tr>
<tr>
<td>CEDAW Ratification</td>
<td>Binary</td>
<td>0.724</td>
<td>0.447</td>
<td>0.000</td>
<td>1.000</td>
<td>Source: UN Global Database on Violence against Women</td>
</tr>
</tbody>
</table>

Note: All independent and control variables are not arbitrarily processed, but are utilized from the data sources listed in the “Data Source and Coding Rules” column.

1) MODEL SPECIFICATIONS AND RESULTS

Considering that the dependent variable is continuous, an ordinary least squares (OLS) regression is a possible option of model specifications. However, applying a simple OLS regression is highly problematic when a time-series cross-national data is analyzed, because the essential assumptions such as independent observations and homogeneity will be violated (Berry 1993) and, in turn, the estimates of beta coefficients will be biased substantially.
Thus, this article employs panel data regression models with country-year random effects and cluster standard errors estimated through "xtreg" command based on a "re" option in STATA. The use of panel data regression enables me to estimate unbiased and consistent beta coefficients and to circumvent the violation of the independently, identically distributed (i.i.d) assumption (Hsiao 2014). In addition, robust standard errors are estimated instead of normal standard errors to reflect the heterogeneity inherently existing in time-series cross-national data (Stock and Watson 2008). The formula for the panel data regression models can be expressed as below.

\[ y_{it} = \alpha + X_{it-1} \beta + u_{it-1} \]

The subscripts and stands for individual countries and years and means for the dependent variable, denotes to the independent and control variables, and denote the constant and beta coefficient, Lastly, is the error term including the country-year random effect.

Variance inflation factor (VIF) test is conducted to evaluate the existence of multicollinearity problems among independent and control variables. The mean VIF is just 1.64 and the VIFs of each independent and control variable are less than 2.50, which means that there is no problematic correlation among variables.

3) The option "vce(robust)" is used to estimate robust standard errors, See Schmidheiny and Basel (2011) or Harbord and Higgins (2008) for further information and descriptions about "xtreg" in STATA.
4) The formula is based on the notation from Baltagi (2008).
5) VIF test is the most frequently used to detect the presence of multicollinearity problems in regressions (Salmeron, Garcia, and Garcia 2018). Although there is no
Table 3 shows the empirical results from the panel data regressions with country-year random effects. The total number of observations is over 4,800 and the number of countries is 127. The overall R-squared and Wald chi-square values are provided for model comparison.

golden standard about the criteria of VIF to say that there is a multicollinearity problem (O’Brien 2007), VIF less than 4 has been regarded as a signal of no multicollinearity problems (Hair et al., 1998). The Stata’s “vif” command is used to conduct VIF tests.
In Model 1 where the bivariate relationship between Women in Parliaments (%) and the VAW policy score is estimated, the key independent variable is statistically significant at the level of p<0.001 with a positive direction as predicted. To be specific, a one percent increase in Women in Parliaments (%) increases the VAW policy score by 0.262. The influence of women’s descriptive representation is consistently significant from Model 2 to Model 4 when a series of other variables are controlled, even though the estimates of the beta coefficient are slightly different. Especially in Model 4 where all control variables are used, Women in Parliament (%) has a statistically significant positive influence on the VAW policy score. The impact of women’s descriptive representation is not only statistically significant but also substantially meaningful given that the VAW policy score increases by 0.182 with one unit increase in Women in Parliaments (%) while all other variables are held at constant.

In terms of control variables, while women’s CSO participation, governmental fractionalization, and political violence do not explain the variation among the adoption of policies combating violence against women, the level of democracy seems to consistently have a positive and significant effect on the VAW policy score. This result supports previous studies that demonstrate democracy compared to other political types such as monarchy and autocracy tends to provide more women-friendly policies and that argue democracy promotes human rights as a whole (Beetham 1999). GDP per capita also has a significant positive influence on the dependent variable across the three Models in Table 3. These support the theories from modernization scholars anticipating the strong positive relationship between economic
development and post-material values including women’s rights (Inglehart 1990; Paxton 2009).

Unlike women’s CSO participation, women’s property rights are positively related to the VAW policy score, which provides statistical evidence for the argument that the adoption of policies for women is a function of women’s property rights. Also, related to government ideology, center-oriented governments tend to provide fewer policies about violence against women compared to right-oriented governments. It can be explained the fact that center-oriented governments are less likely to make innovative policies to keep their approval rates.

Moreover, this article finds that CEDAW ratification has a statistically significant positive impact on policy scores related to VAW. To be specific, when countries ratify the CEDAW treaty, countries tend to have higher VAW policy scores compared to the countries that do not ratify the CEDAW. This finding contributes to the ongoing debate about whether international treaties can substantially affect the individual countries’ domestic policies or not.

In a nutshell, the estimations from the four models in Table 3 provide empirical evidence to reject the null hypothesis about the influence of women’s descriptive representation on the adoption of policies addressing violence against women. In other words, the empirical results suggest that higher levels of women’s descriptive representation lead countries to provide and adopt policies addressing violence against women.
3) ROBUSTNESS CHECK

The importance of robustness check in empirical analysis has been continuously emphasized (Esarey and Danneman 2015). Thus, to examine whether the association between women’s descriptive representation and VAW policy score is robust or not, I estimate four additional alternative models: 1) a normal OLS regression with robust standard errors, 2) an OLS with panel-corrected standard-errors (PCSE), 3) a lagged dependent variable (LDV) model with random effects (RE), and 4) a lagged dependent variable (LDV) model with fixed effects (FE).

The first two alternative models are estimated because an OLS regression model with robust standard errors is the classical empirical approach to accommodate the heterogeneity (Freedman 2006) and the panel-corrected standard error is often used to control the serial correlation in panel data (Beck and Katz 1995). Also, LDV models with fixed and random effects are employed because the inclusion of the lagged dependent variable can control the unobserved or unmeasured factors which can affect the VAW policy score. Even though some scholars argue that the lagged dependent variable can suppress the explanatory power of independent and control variables (Achen 2000), using an LDV model as a robust estimation strategy is still recommended (Wilkins 2018).
Robust standard errors in parentheses, except Model 6 with PCSE. Through STATA, Model 5 is estimated from “reg” command and Model 6 through “xtpcse” both with the “vce(robust)” options. Model 7 and 8 are estimated based on the “xtreg” command with “re” and “fe” options respectively.

Throughout the four alternative models in Table 4, the main independent variable, Women in Parliaments (%) has a statistically significant positive relationship with the VAW policy scores at the level of p<0.01. In Model 5 and Model 6 estimated from OLS regression with robust standard errors and PCSE, a one percent increase in Women in Parliaments (%) increases the VAW policy scores by 0.121. When the lagged dependent variable is included with random and fixed
country-year effects, the percentage of women in parliaments is still statistically significant with a positive direction even though the beta coefficients decrease because the lagged dependent variable explains a large portion of variations in the dependent variable. However, given that the adoption of policies is a rare event, the beta coefficients of Women in Parliaments (%) are still not negligible.

Related to the control variables, the level of democracy has a statistically significant positive association with the dependent variable at the level of p<0.05 across the four alternative model specifications. It provides strong support for the positive influence of democracy on human rights. On the contrary, GDP per capita seems to be not statistically significant in Model 7 (LDV model) with random effects. In addition, women’s property rights, women’s CSO participation, government ideology, and political violence do not show consistent results across the alternative models, even though some models show their significant influence on the dependent variable. Furthermore, the estimations from Model 5 and Model 6 show that government fractionalization has a statistically significant negative influence on the VAW policy score, but this association is not consistent. Also, CEDAW ratification does not have a statistically significant positive relationship based on the result from Model 8 where country-year fixed effects are used with the lagged dependent variable.

To sum up, the empirical results from the main models in Table 3 and alternative models in Table 4 provide strong empirical evidence showing the association between women’s descriptive representation and the adoption of policies about violence against women. This association is robust and consistent under the various model specifications,
5. CONCLUSION

Despite international awareness and efforts to address it, violence against women resulting in the degradation of women’s rights and potentially endangering national security is widespread regardless of regime types and the level of economic development. Even though the negative impacts of violence against women have been widely studied, there has been a lack of research on what factors make countries adopt policies addressing violence against women.

This article attempts to explain the adoption of policies addressing violence against women through the lens of women’s descriptive representation in parliaments. It unveils the strong positive influence of women’s descriptive representation in the adoption of policies about violence against women based on the unprecedentedly large data about 127 countries from 1975 to 2016. Considering that the lack of time-series cross-national studies has prevented scholars from reaching a consensus about the impacts of women representatives on the adoption of policies for women and led to the mixed results (Wängnerud 2009; Courtemanche and Green 2017), this finding of women’s descriptive representation also contributes to the literature of women in politics by demonstrating the generalizability of the relationship which has not been tested in the previous studies of women’s descriptive representation. In other words, the robust finding from this article strengthens the previous empirical results on the conducive role of women’s descriptive representation on women-friendly policy outcomes (Cowell-Meyers and Langbein 2009; Tam 2017; Eckhouse 2019; Rashkova 2021).

The finding also supports the long-lasting arguments that women
legislators tend to focus on women’s issues including violence against women because of their shared female identity and women’s distinct interests (Phillips 1995; Kanter 1977; Mansbridge 1999). Moreover, even though this article focuses on the aggregated decision-making in the legislative branch, it is in line with the scholarly literature and feminist theories on women’s descriptive representation suggesting that gender is the most important variable for explaining why women legislators place women’s issues as their top policy priority (Richardson Jr and Freeman 1995; Bratton and Ray 2002; Mendelberg et al, 2014; Mechkova and Carlitz 2021; Homola 2021). Meanwhile, the tested relationship between women’s descriptive representation and the adoption of policies addressing violence against women urges us to consider the demographic composition of legislatures more seriously as a determinant of policy adoptions.

In addition to the academic contributions, the empirical result of this article has a policy implication about the legislative gender quotas. While a branch of studies examines why do countries adopt gender quotas in parliament (Dahlerup 2007; Hughes, Krook, and Paxton 2015; Hughes et al, 2019; Bush and Zetterberg 2020), they have not provided answers to the following question: for what, do countries need to adopt gender quotas, especially, reserved seats legislative quotas, in parliament? Rather than the normative answers to this question, this article demonstrates that the increase in the women’s descriptive representation in parliaments will lead countries to pay more attention to the problem of violence against women which harms women’s rights, prevents women from being economically active, and even hurts the national security. At the same time, given that some recent studies show that
women legislators have different partisanship or political ambitions influencing their policy priorities (Kang et al., 2021; Wang and Tucker 2021; Gwiazda 2021), institutionalizing female citizen’s participation mechanisms such as public hearing affecting individual legislative behaviors is also conducive to translate women’s voice into politics and politicize the problem of violence against women.

This article also sheds light on the other potential factors leading countries to provide more policies combating violence against women. For instance, the empirical result demonstrates that democracy is likely to introduce policies to eradicate violence against women. This finding reminds us of the importance of democracy in the improvement of human rights, including women’s rights. Also, it provides legitimacy for the international efforts to support the spread of democracy around the world. In addition, despite the mixed empirical results, this article shows that women’s social and economic rights can lead to policy changes to protect women from violence, which emphasizes the need for concern about the ways to improve women’s social and economic rights.

I should note that the findings from this article have not to be considered as an absolute conclusion. As other empirical studies do, this article also does not free from the innate limitation of statistical analysis. First, this article tests the hypothesis and evaluates the statistical association between the adoption of policies about violence against women and women’s descriptive representation, not the theory or mechanism behind the relationship. Moreover, even though the empirical results in this article are based on a thorough robustness check with various model specifications, the data is confined to after 1975 because of data availability. In addition, the empirical results are about
the general impact of women’s descriptive representation instead of reflecting the potential heterogeneities among individual women representatives.

Thus, future studies that qualitatively examine how, when, and why women representatives lead to the adoption of policies about violence against women are promising. Replicating the empirical analysis in this article when the data availability increases also can contribute to the literature on women in politics. Theorizing and empirically testing the heterogeneities among women representatives such as different partisanship (Swers 2016; Barnes and Cassese 2017), political ideology (Paxton, Hughes, and Barnes 2020), and other individual characteristics (Deckman and Swers 2019; Costa et al., 2019) will add depth to the studies about the role of women’s descriptive representation in the adoption of policies related to violence against women.
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여성 대상 폭력에 대한 정책 채택과 의회에서의 여성의 기술적 대표성의 연관성
- 교차국가 시계열 분석으로부터의 실증적 증거

우병득
(아이오와대학교)

여성 대상 폭력(violence against women)은 여성의 건강과 권리를 위협하는 심각한 세계적 문제다. 여성 대상 폭력이 피해 여성과 사회에 미치는 악영향에 대해 각국이 동의하고 있음에도 불구하고, 여성 대상 폭력에 대한 각국의 정책 채택에는 차이가 있다. 여러 국가들은 여성 대상 폭력 관련 정책을 신속하게 채택하고 있지만, 일부 국가들은 여전히 여성 대상 폭력에 대한 정책을 채택하지 않고 있다. 본 연구는 의회에서의 여성의 기술적 대표성(women's descriptive representation in parliaments)의 차이를 통해서 각 국가의 정책 채택에서의 차이를 설명하고자 한다. 본 연구는 1975년부터 2016년까지 127개국에서 여성 대상 폭력에 대한 정책 채택에 관한 교차국가 시계열 데이터(time-series cross-national data)를 사용하여 의회에서의 여성의 기술적 대표성의 영향력을 패널회귀분석(panel data regression models)을 통해 경험적으로 분석했다. 그 결과, 의회에서의 높은 여성의원 비율이 국가들에 하여금 여성 대상 폭력에 대해 더 많은 정책을 채택하도록 이끌다는 것을 발견했다. 이 연관성은 다양한 모델들에서 통계적으로 입증되게 유의미했다. 이 결과는 여성할당제(gender quotas), 특히 여성특별의석 할당제(reserved seats gender quotas)의 채택에 대한 정책적 합의를 제시할 뿐 아니라, 여성정치 문헌에 기여한다.
주제어: 여성 대상 폭력, 여성의 기술적 대표성, 정책 채택

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