

The social origins of female combatants

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Abstract

We investigate the factors that lead some rebel organizations to deploy women in combat roles while others restrict women's participation to non-combat roles or exclude them entirely. Our argument focuses on the influence of the scope and frequency of women's prior participation in social, political, and economic activities on groups' decisions to employ women in combat roles and women's desire to pursue such roles when they are made available. We evaluate our hypotheses using a new dataset on women's combat participation in rebel movements active from 1979 to 2009. Our results provide support for our central hypothesis.

Keywords

Civil war, female combatants, gender and conflict, rebellion

Introduction

Although war profoundly affects the lives of men and women, the division of labor during periods of armed conflict has traditionally been highly gendered. While men fight, women have most commonly provided care, comfort, and encouragement to male fighters (Goldstein, 2001). Where women are directly incorporated into armed resistance movements, they appear to most commonly fill integral support roles, acting as cooks, couriers, nurses, propagandists, or smugglers. Far fewer women actively participate in direct combat roles; yet, within some rebel movements female combatants represent a substantial portion of the group's fighting force. For instance, women comprised at least one-third of the fighting forces of the Farabundo Marti National Liberation Front (FMLN) in El Salvador (Kampwirth, 2002), the Eritrean People's Liberation Front (EPLF) in Ethiopia (Pateman, 1990), the Maoist insurgents in Nepal (Gonzalez-Perez, 2008), and the Kurdistan Worker's Party (PKK) in Turkey (Marcus, 2007). Smaller numbers of female combatants fought on

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behalf of the South West African People's Organization (SWAPO) in Namibia (Nghidinwa, 2008), the Contra forces in Nicaragua (Brown, 2001), the Zimbabwe National Liberation Army (ZANLA) in Rhodesia (Lyons, 2004), and Liberation Tigers of Tamil Eelam (LTTE) in Sri Lanka (Alison, 2009).

The general scarcity of female combatants in most rebel groups appears remarkable considering that recruiting and deploying women in combat represents one potentially effective way for rebel groups to address their material and human resources shortages. Given that many women possess the requisite physical abilities to endure the rigors of guerrilla warfare (Goldstein, 2001; Opper, 2015) and female fighters have previously performed competently in many diverse conflict settings, the recruitment of women and their deployment in combat roles could potentially ameliorate persistent rebel resource constraints, providing a substantial benefit to the movement. This observation prompts an important question: why are female combatants prevalent within the ranks of some modern rebel movements yet largely or completely absent from most others?

As an initial step in addressing this question, we investigate the influence of prevailing gender norms and previous patterns of women's integration into social and economic institutions on the prevalence of female combatants within rebel organizations. Our argument highlights the role that these factors play in shaping rebel leadership's desire to recruit female fighters as well as women's willingness to accept these opportunities when they are made available. We evaluate our argument using newly constructed data on the prevalence of female combatants in a global sample of more than 200 rebel organizations active between 1979 and 2009. Consistent with our central argument, we find a strong link between proxy indicators of societal gender equality and the prevalence of female combatants. More specifically, female fighters are comparatively more common among rebel groups in states with lower fertility rates and higher rates of female participation in education and the labor force.

Women's participation in armed rebellion

Case studies and surveys of ex-combatant populations demonstrate that many armed groups have actively recruited women and that many women support rebel movements when offered opportunities to do so (e.g. Coulter et al., 2008; Kampwirth, 2002). Recent cross-national studies further highlight the frequency of female participation in armed groups: more than half of all groups include female participants and more than a third employ some number of female combatants (Henshaw, 2016; Thomas and Bond, 2015; Wood and Thomas, 2017). Some scholars and activists have drawn attention to the frequency with which women and girls are forcibly recruited into armed groups, implying that their participation is often involuntary and that these fighters lack agency within these groups (Mazurana et al., 2002: 106–108; McKay, 2005: 387). Several other studies, however, suggest that even under such conditions, female fighters are not simply passive victims of violence but they possess a certain degree of agency and often exercise some level of authority within the groups for which they fight (Coulter et al., 2008; McKay, 2005).¹

Despite the prevalence of female participants in contemporary rebel movements in both combat and non-combat roles, the division of labor within these organizations often remains highly gendered, leading to predictable discrepancies in the roles filled by male and female participants. More concretely, while many male recruits undertake essential support duties (e.g. porters, cooks, or recruiters), men represent the vast majority of troops assigned to

combat units. In contrast, female fighters are comparatively rare overall, and even organizations that employ substantial numbers of female participants often restrict women's participation to non-combat roles. In other words, even among rebel groups that choose to recruit women, the opportunities and range of roles available to these recruits are typically more constrained than those available to their male counterparts. Moreover, female participants in armed groups are commonly relegated to less prestigious roles. Combat roles are generally perceived as more prestigious and tend to result in greater rewards and status compared with non-combat duties.² Viterna (2013), for instance, observed that within the FMLN, cooking, working supply lines, and constructing munitions were typically viewed as low-prestige assignments while frontline combat activities, which were dominated by men, were seen as higher-prestige duties. Similarly, according to Kampwirth (2002: 15), women who actively participated in combat automatically gained greater prestige and status within Central American rebellions of the late twentieth century. For this reason, many women actively lobby for the ability to participate in combat operations. Coulter (2008), for example, asserts that some women were motivated to join Sierra Leonean and Liberian rebellions because of the esteem associated with becoming a fighter. Consequently, when women are excluded from combat roles, they are denied the opportunity to achieve the same levels of prestige afforded to their male counterparts.

While gender-based divisions of labor occur in virtually all rebel organizations,³ the activities and responsibilities undertaken by female participants vary significantly across organizations. For instance, the Eelam People's Revolutionary Liberation Front (EPRLF) was the first of the Tamil nationalist rebel groups to recruit many women. However, its female recruits engaged primarily in political activities such as recruiting and disseminating propaganda. There is little evidence that women participated directly in combat (Alison, 2009; Thiranagama, 2014). Similarly, while nearly 30% of the Amal militia's members were female, they engaged exclusively in support capacities, providing food to male combatants and caring for soldiers' families, and were excluded entirely from combat (Shehadeh, 1999). Conversely, numerous other organizations (e.g. the FMLN, PKK, EPLF, LTTE, and ZANLA) included substantial numbers of female combatants, some of whom were even elevated to leadership positions. As we argue below, existing societal gender norms and women's participation in social and economic activities play important roles in determining both the opportunities rebel leadership extends to women and women's interest in filling such positions when they are made available.

The social origins of female combatants

Prevailing societal gender norms exert a substantial influence on women's opportunities to participate in social, political, and economic activities as well as *how* they participate in these pursuits. In particular, the norm that women's primary roles in society are related to child-birth, caregiving, and domestic duties constrains the extent to which women participate in the formal labor force, the level of schooling they receive, and their prevalence in positions of political authority. Such gender norms typically reinforce gender hierarchies in which men predominantly occupy positions of authority while women are subordinated and fulfill mostly domestic duties. These peacetime gender hierarchies are often replicated in wartime organizations, contributing to the gender-based divisions of labor (Luciak, 2001; Reif, 1986).⁴ Thus, women's roles within rebel groups are likely to reflect the embedded gender norms of the communities from which they arise. Where such norms are durable and rigid,

they are more likely to constrain women's ability to participate in armed groups as well as the opportunities afforded them when they do participate.

Yet, as previous studies demonstrate, structural changes that alter previously engrained patterns of male–female social interactions or augment gender-based divisions of labor within society can create new opportunities for women's involvement in politics (Kenworthy and Malami, 1999; Scholzman et al., 1999). For example, educational attainment and labor force participation have served as precursors to women's involvement in social and political activism in many countries (Ray and Kortegew, 1999; Wallace and Jenkins, 1995). Similar mechanisms are likely to shape women's recruitment and integration into rebel organizations. In particular, the disruption of traditional gender norms can create openings for women's participation in activities and networks traditionally reserved for or dominated by men, including as rebel combatants. For example, rebel efforts to disrupt traditional family structures and alter the “life-space” of women during the Taiping Rebellion in China freed many women from their former roles as wives, mothers, and homemakers, thus making possible their participation in military and political activities (Liao, 1990: 127).⁵

Previous research on women's participation in Latin American rebellions suggests that structural changes that occurred in the 1970s and 1980s altered long-established gender norms, created new opportunities for women to engage in social and political activism, and contributed to the relatively high levels of female participation in rebellions in the region (e.g. Kampwirth, 2002; Luciak, 2001). Specifically, increasing rates of female participation in economic and social activities—particularly the formal labor force and higher education—from which they had previously been excluded or engaged in only peripherally, coupled with increasing contact with urban activist networks opened important pathways for Latin American women's recruitment into leftwing rebel movements such as the FMLN in El Salvador and the Sandinistas in Nicaragua (Chinchilla, 1983; Mason, 1992).

We take these observations as our point of departure and argue that as women's participation in social, economic, and political processes increases, rigid beliefs about women's ability to participate in non-traditional roles are likely to weaken, ultimately leading to an increased likelihood of their participation in rebel organizations. We identify three related mechanisms linking the integration of women into social and economic institutions and the rate at which armed groups recruit and deploy women in combat roles. First, women's integration into the labor force and educational institutions provides more women with skillsets valued by rebel organizations. Second, greater socialization and cross-gender interactions in pre-war social, economic, and political activities increase men's willingness to accept female participants in rebel movements as nominal co-equals capable of carrying out similar tasks and accepting similar responsibilities. Third, when women receive more education and are better integrated into the workforce, their exposure to politics and network channels that can facilitate their entry into rebel organizations increases. Finally, we briefly highlight how these factors can simultaneously influence women's desire to participate in armed groups when such opportunities arise.

Skills and knowledge

The selectivity of recruitment depends on both the supply of potential recruits and the organizational and ideological characteristics of the movement. However, all else being equal, rebels should prefer to recruit members that possess skills and knowledge that are beneficial to the movement. Medical training, mechanical and technical abilities, experience in political organization, and even basic literacy skills are valuable assets for rebel groups. Rebel leaders

value such skills because successful guerrilla campaigns rely as much on careful planning, communication, information gathering and organization as on the number of battle-hardened troops. By selecting more educated and more highly skilled recruits, armed groups are better able to execute more sophisticated, efficient and effective acts of violence (Bueno de Mesquita, 2005; Krueger and Malečková, 2003). For instance, a study of male and female Palestinian bombers found that terror groups were likely to task more educated bombers with high-stakes targets because they were more likely to succeed in their missions (Benemelech and Berrebi, 2007). Individuals may be able to use their high levels of education to signal their dedication to the group's cause, making them more desirable recruits (Krueger and Malečková, 2003).

Given that rebel groups appear to select those with the highest skill levels from their pool of potential recruits (when provided with the option), we expect that the presence of more educated, more highly skilled women should positively influence the likelihood of their recruitment and integration into armed movements. According to Viterna (2013), the FMLN leadership made a concerted effort to recruit women who were literate and possessed specialized skills such as medical training, technical knowledge, or experience in political organization and often employed these women in more prestigious frontline positions.⁶ Similarly, Dalton and Asal (2011) find that terror groups are more likely to recruit and utilize women in terror attacks in countries where women are better educated. Finally, Lobao (1990) asserts that higher social status and education allow women to command more respect from a greater proportion of the population, which gives them easier access to prestigious positions within guerilla organizations. These observations suggest that opportunities afforded to women prior to the outbreak of conflict positively influence their rate of inclusion in armed movements.

Socialization and expectations

Rebel members' pre-war experiences also shape their expectations about what duties women are competent to undertake in an organization. Where women are viewed primarily as wives, mothers, or caregivers, they are likely to be assigned corresponding roles within armed movements, if they participate at all. In contrast, when male rebels have worked alongside female colleagues in political, educational, and occupational settings, they are more likely to view women as nominal equals and believe they are capable of making comparable contributions to the movement to men. In other words, pre-war socialization shapes the (typically) male leadership's willingness to accept women into the movement.

Women's integration into a state's social and economic institutions may aid this socialization process. Blaydes and Linzer (2008), for example, find that well-educated men and women are more likely to embrace liberal ideas about women's roles in society. Moreover, more frequent interactions between men and women in political and social situations challenge restrictive stereotypes portraying women as mentally and physically less resilient, more sensitive, and more pacifistic than their male counterparts. This effect should be most acute when men and women participate in similarly demanding or risky activities. For instance, women's participation in strikes and protests against a repressive regime can help erode the image of women as apolitical, risk averse caregivers and replace it with the image of women as courageous political dissidents. In the 1960s, large numbers of South Vietnamese women engaged in non-violent demonstrations against the state, and proved successful at gaining concessions on some of their demands. As a result, many of these women were incorporated

into the newly created National Liberation Front (NLF) and began challenging the state through organized violence (Tetreault, 2000). Moreover, as the number of female participants engaging in such activities increases, the pace of the change in perception should also increase, particularly among men within the same organizations or networks.

Networks and opportunity

Women's integration into educational and economic institutions should also correlate with involvement in political advocacy and activism. Secondary and tertiary educational institutions often serve as epicenters for political radicalization, activism, and mobilization. Similarly, labor unions and related organizations often politicize and mobilize workers who might otherwise have limited engagement in politics. As women's involvement in educational institutions and the labor force increases, they become more likely to participate in political activism. Previous research highlights the influence that women's integration into pre-existing networks has on women's participation in social activism (Klanderman and Oegema, 1987). Both informal connections (e.g. friendship and familial ties) and formal connections (e.g. memberships in social organizations) strongly predict female activism (Klanderman and Oegema, 1987). As an individual becomes more deeply integrated into activist networks, she becomes more likely to participate in more costly collective action (McAdam, 1986: 70).

Other scholars note similarly that political and social networks often serve as primary channels through which activists are recruited in violent revolutionary organizations (Brockett, 2005; Wickham-Crowley, 1992). Indeed, a recent study of the PKK notes that increased female membership in the organization in the early 1990s coincided with a change in the group's recruitment strategy that targeted universities and urban activist networks (Marcus, 2007). Specifically, urban women, particularly those attending a university, had greater opportunities to engage in political activism and interact directly with PKK recruiters.

Efficacy and interest

Lastly, societal gender equality should also influence the supply of women seeking entry into rebel organizations. Where women have a greater sense of agency and political efficacy, they are more likely to seek out opportunities to participate in high-risk collective action and act on available opportunities. Specifically, deeper integration into social and economic institutions provides women with skills and knowledge, which empowers them to participate in political struggles (Kabeer, 2005; Kampwirth, 2002). Additionally, Blaydes and Linzer (2008: 596) find that both employment and education decrease women's support for "traditionalist notions of gender roles." Thus, where women already act in non-traditional gender roles, have greater access to educational opportunities, and have had greater exposure to political activism, they are more likely to attempt to join rebel organizations and advocate for advancement and equal opportunities within them.

In sum, while we argue that higher levels of societal gender equality increase the probability that groups are willing to accept female recruits and employ them in greater roles, we also contend that women's social status and their level of integration into social and economic activities influence their own willingness to participate in violent organizations combat roles. This discussion provides our central testable hypothesis: *as the inclusion of women in social*

and economic activities within the state increases, the prevalence of female combatants in armed groups active within that state increases.

Research design

Because we are interested primarily in assessing the conditions under which rebel organizations permit women to serve in similar roles to men, we require data that focuses on the extent of women's participation as *combatants* in armed groups rather than their presence solely in support roles within such organizations. We rely on data from the Women in Armed Rebellion Dataset (WARD) (Wood and Thomas, 2017), which includes information on the prevalence of female combatants for a sample of 211 rebel organizations active between 1979 and 2009.⁷ The WARD utilizes definitions commonly used in disarmament, demobilization, and reintegration (DDR) programs to differentiate "female combatants" from "females associated with armed groups" (UN Women, 2012). The former represents the subset of female members of a rebel organization who are armed and participate in combat activities sanctioned by the group's leadership, while the latter refers to women who are formally or informally affiliated with a group but do not perform combat duties or directly engage in active military operations. Thus, the dataset considers any women employed in frontline combat, women suicide bombers, and armed female auxiliaries, as well as any female member that receives military training, carries weapons and might be expected to participate in combat operations on behalf of the organization to be combatants.⁸

The variable *Female Combatant Prevalence* is our primary independent variable. This variable is a categorical measure of the estimated proportion of a group's combat force comprising women, which is constructed as follows:

- (0) no evidence;
- (1) low (< 5%);
- (2) moderate (5–20%);
- (3) high (> 20%).

The variable *Female Combatant Prevalence* reflects a "best" estimate of the proportion of female combatants in an armed group over the course of its campaign against the state. This is important since estimates of women's participation sometimes vary across sources and sources do not always make clear distinctions between female combatants and other females associated with armed groups. A second measure, *Female Combatant Prevalence (high)*, utilizes a less restrictive coding of the source material and reflects the highest estimate of female combatants reported in the source material and uses less stringent criteria for what constitutes a combatant.⁹ We repeat our analyses using this estimate as a robustness check.

We report the distribution of *Female Combatant Prevalence* in Figure 1. The figure illustrates that over half of the groups in the sample showed no evidence of having women in their armed wings. The remaining groups are distributed across the other three categories and demonstrate a downward trend. Figure 2 presents the geographic distribution of *Female Combatant Prevalence*. As the figure demonstrates, the inclusion of women in armed rebellions is a global phenomenon. However, female combatants appear more prevalent in some regions compared with others, particularly Latin America.

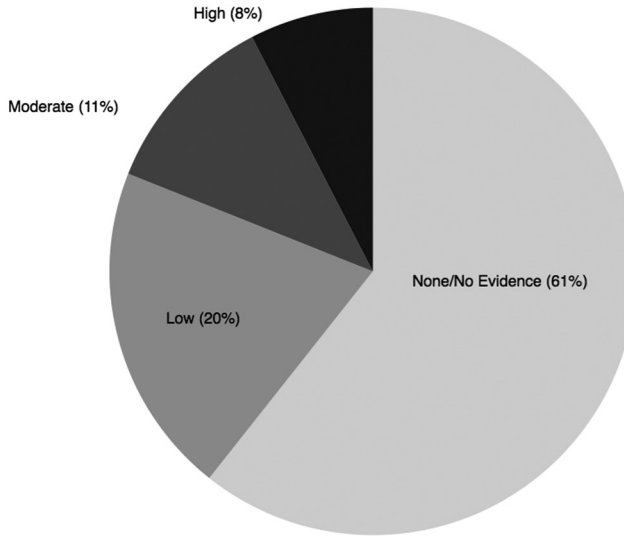


Figure 1. Distribution of female combatant prevalence in sample.

To evaluate our argument, we require measures capturing the extent to which women are integrated into a state's pre-conflict social and economic institutions. We rely on proxies for societal gender equality or women's social status employed in prior analyses (e.g. Caprioli, 2005). First, we use a measure of the state's *Fertility Rate*, which is the average number of live births per woman in a country. This measure is an appropriate proxy for gender equality because it "captures multiple aspects of the complex matrix of discrimination and inequality" (Caprioli, 2005: 169). High fertility rates indicate a social expectation that women's primary duties are childbearing and motherhood, and, in practice, inhibit women from participating in social and economic activities at rates comparable to men. Moreover, where fertility rates are high, women are less likely to be as educated as men, to work outside the home, and to engage in political activism.

Secondary Education Ratio reflects the ratio of girls to boys enrolled in secondary education institutions in a country. This continuous variable is suitable for capturing women's social status because educating women, particularly beyond the primary level, signals a belief that girls should be afforded similar opportunities to boys and that women can occupy roles other than mother, wife, and homemaker. This measure should also account for increasing opportunities for women to become involved in social and political networks since student groups often serve as centers of anti-regime dissent. Finally, we include *Female Labor Force Participation* because participation in the labor force can provide women with greater skills and political agency, as well as broader social and political networks, increasing the probability they will be recruited into rebel organizations as fighters. All three indicators are taken from the World Bank's (2015) *World Development Indicators*. Because the data on women's participation in armed groups is time invariant, and because we are largely interested in the gender norms and level of societal equality that existed at the outset of a conflict, we use the value at the start of the conflict for each indicator.¹⁰

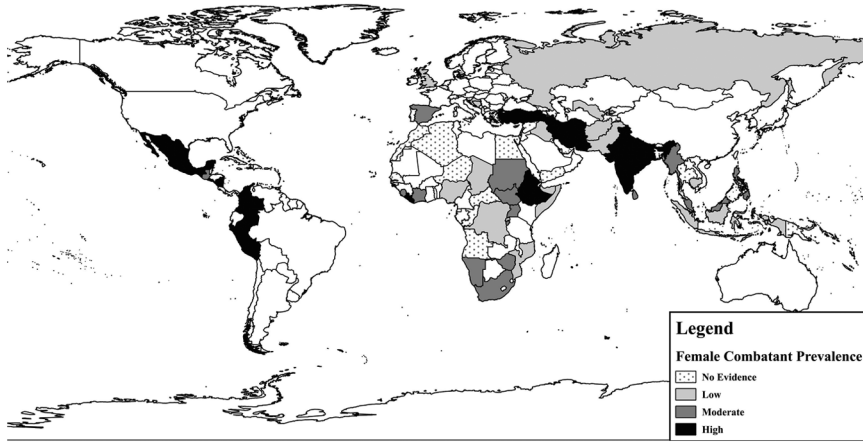


Figure 2. Global prevalence of female combatants in civil conflicts, 1979–2009.

Female Combatant Prevalence within civil conflict states included in sample. Shading reflects highest category of prevalence among all groups active in the country during the period.

We include several relevant controls in our statistical models. First, we control for two political ideologies that have been found to influence the prevalence of female fighters within rebel organizations. We use replication data from Wood and Thomas (2017) to measure whether rebels espouse a *Leftist* or a *Radical Islamist Ideology*. *Leftist Ideology* is a binary measure indicating whether groups possess a Communist, Socialist, Marxist–Leninist, Maoist or related Leftist ideology while *Radical Islamist Ideology* records whether a group counts the implementation of a system of government based on Sharia law or the establishment of a theocratic state based on Islamic principles as one of its primary objectives. Some scholars also suggest that nationalism may reinforce gender hierarchies and gender essentialism (e.g. Caprioli, 2005), which could suppress the prevalence of female fighters. We include the dummy variable *Separatist Conflict* to indicate whether a group sought autonomy or secession from the central state. This variable is taken from the Uppsala Conflict Data Program’s Dyadic Dataset.

Additionally, weaker rebels may be inclined to recruit female fighters to help address their resource needs. Therefore, we include *Weak Rebels*, a binary indicator reflecting whether a rebel group is coded as “much weaker” than the state in the Non-state Actor Dataset (Cunningham et al., 2013). The binary indicator *Active 2000s* accounts for cases ongoing or terminating after 1999. This indicator helps account for bias that might result from greater information availability in more recent conflicts. We control for the *Duration* of the rebellion because leaders may be reluctant to recruit women initially and permit their inclusion only once the group becomes larger and more established (Thomas and Bond, 2015). We also include a measure of the state’s economic development to help ensure that our measures of gender equality are not simply serving as proxies for overall levels of state economic development and capacity. *GDPpc* is measured as the natural log of the state’s mean per capita gross domestic product. Because our data are not time series, we average the value of state GDP over the course of the conflict (Gleditsch, 2002).

We also control for group combat strategies because they may influence female recruitment patterns. Groups relying on coercive recruitment strategies are often indiscriminate in their selection and may be more likely to recruit female fighters to fill resource needs. We use data from Cohen (2013) to code a binary measure recording whether *Forced Recruitment* was employed within a conflict.¹¹ Additionally, we include a binary variable indicating whether groups utilized *Suicide Terrorism* because several studies highlight the potential strategic benefits of employing women for such attacks. Data come from the Chicago Project on Security and Terrorism (2015).

Results and discussion

Given the categorical structure of the dependent variable, we employ ordered logistic regression to evaluate our hypothesis. We report the results of these models in Table 1. Model 1 shows the influence of *Fertility Rates* on the *Prevalence of Female Combatants* and demonstrates higher fertility rates exert a modest suppressive influence on the level of women's combat participation in rebel movements, which offers some support for our primary hypothesis. The coefficient is negative and achieves marginal levels of statistical significance ($p = 0.054$). While this variable only serves as a proxy for broader patterns of gender equality in a society, it should reflect the extent to which a society views women's role as primarily focused on childbearing. Model 2 presents results using *Secondary Education Ratio*, which we use as a proxy for women's access to social and economic activities as well as the likelihood that they have skills that make them more valuable to rebel organizations. The positive and statistically significant coefficient suggests that women are more likely to participate as rebel fighters alongside men when they have greater access to higher levels of education. In Model 3 we examine *Female Labor Force Participation*, which should proxy a similar set of processes to our education variable. Again, the coefficient for the variable is in the expected direction and achieves statistical significance.¹² In Models 4–6, we repeat our initial analysis using the alternative “high” estimates of *Female Combatant Prevalence* from the WARD. The results of these models are highly similar to those using the “best” estimate. Taken together, these results provide support for our main hypothesis.¹³ As women's social and economic access increases, rebel groups become increasingly likely to include female combatants in higher proportions.

We illustrate the substantive effects of these results in Figures 3–5. Each pair of figures illustrates the predicted probability of observing no female combatants (left panel) and a moderate level of female combatants in a rebel group (right panel) over the range of the given measure of societal gender equality. For example, Figure 3 presents the substantive impact of *Fertility Rates* on *Female Combatant Prevalence*. The left panel shows that the probability of finding no evidence of female combatants increases as fertility increases. At 1 standard deviation below the mean (~4 births per woman), the probability of a group excluding women fighters altogether is roughly 48%; however, at 1 standard deviation above the mean (~7 births per woman), that probability increases to nearly 72%. As expected, the converse relationship is observed in the right panel. At a fertility rate of 1 standard deviation below the sample mean, the probability of observing a moderate level of female combatants is roughly 17%, but this probability declines to less than 11% at 1 standard deviation above the mean.

We observe similar patterns across the other measures of gender equality, yet the direction of the relationships is reversed given that increasing *Fertility* reflects lower societal

Table 1. Determinants of female combatant prevalence

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Best estimate			High estimate		
<i>Fertility Rate</i>	-0.325 † (0.168)			-0.391* (0.169)		
<i>Secondary Education Ratio</i>		0.030* (0.010)			0.036* (0.011)	
<i>Female Labor Force Participation</i>			0.086* (0.036)			0.109* (0.034)
<i>Leftist Ideology</i>	1.893* (0.495)	3.016* (0.510)	6.993* (1.650)	1.333* (0.544)	2.523* (0.565)	6.611* (1.910)
<i>Radical Islamist Ideology</i>	-1.564* (0.428)	-1.280* (0.574)	-1.745* (0.692)	-2.195* (0.562)	-1.793* (0.564)	-0.670 (0.572)
<i>Separatist Conflict</i>	-0.567 (0.564)	-0.835 (0.540)	-0.328 (1.335)	-0.570 (0.604)	-0.591 (0.554)	0.046 (0.977)
<i>GDPpc_{it}</i>	-0.399 † (0.221)	-0.574* (0.262)	-0.200 (0.481)	-0.377 † (0.228)	-0.530* (0.227)	0.013 (0.409)
<i>Final 2000s</i>	0.297 (0.428)	0.514 (0.461)	0.951 (0.727)	0.116 (0.430)	0.230 (0.434)	0.935 (0.596)
<i>Duration</i>	0.059* (0.016)	0.062* (0.026)	-0.119 (0.095)	0.089* (0.020)	0.085* (0.026)	-0.070 (0.081)
<i>Weak Rebels</i>	-0.543 (0.344)	-0.604 (0.369)	-1.130 (0.819)	-0.983* (0.344)	-1.141* (0.367)	-1.678* (0.833)
<i>Suicide Terror</i>	1.201 † (0.624)	1.435 † (0.858)	3.931* (1.051)	1.693* (0.547)	1.825* (0.569)	2.679* (0.749)
<i>Forced Recruitment</i>	0.801* (0.360)	0.562 (0.410)	1.262 (0.832)	1.693* (0.547)	0.728 † (0.427)	1.377* (0.808)
Wald χ^2	55.64	70.03	61.80	67.87	82.14	43.07
N	185	165	97	185	165	97

Coefficients and standard errors (clustered on country) from ordered logit models.

* $p \leq 0.05$; † $p \leq 0.10$ (two-tailed test).

gender equality while higher values of *Secondary Education Ratio* and *Female Labor Force Participation* reflect greater equality. According to the predictions in Figure 4, increasing *Secondary Education Ratio* from 1 standard deviation below (~35) to 1 standard deviation above the mean (~87) reduces the probability of observing no female combatants from 80% to about 30%, while the same change in the variable increases the likelihood of observing a moderate prevalence of female combatants from roughly 5% to 15%. Figure 5 shows clearly that the probability of observing no female combatants declines as women’s participation in the labor forces increases, dropping from more than 90% at 1 standard deviation below the mean (~26) to 60% at 1 standard deviation above the mean (~50). However, labor force participation appears to bear little influence on the likelihood of observing moderate levels of female fighters.

Several of the control variables are consistent with previous studies and conventional wisdom. First, we find that groups espousing leftist ideologies are more likely to employ greater numbers of female combatants, while radical Islamist groups are less likely to deploy female combatants. However, we find no relationship between female combatants and conflicts fought over secessionist goals. We find some evidence that female combatants are more

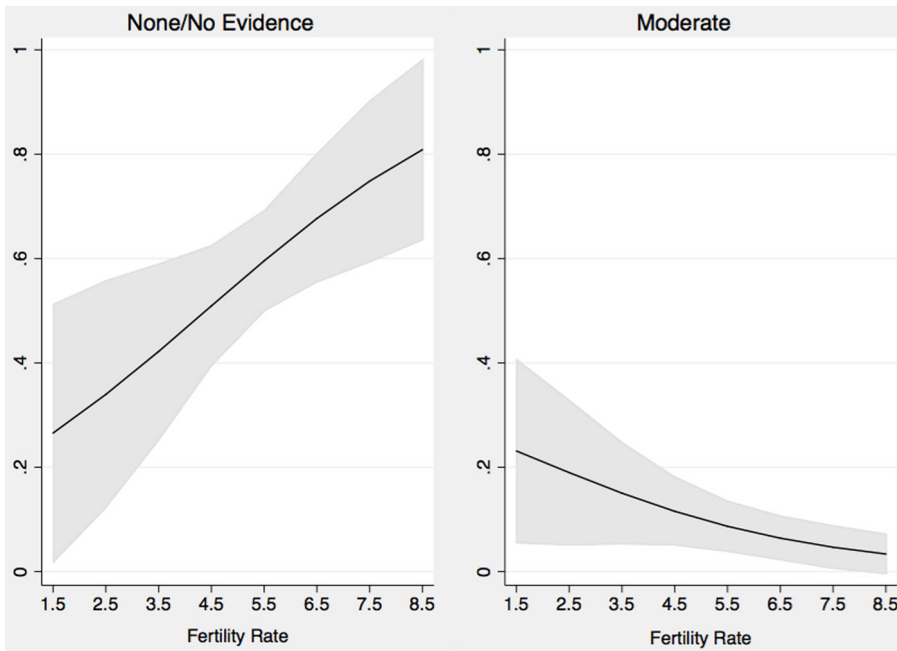


Figure 3. Impact of fertility rate on female combatant prevalence.

Probability of observing no evidence (left panel) or a moderate level (right panel) of female combatants over the range of *Fertility Rate*.

common in longer conflicts. Additionally, the results suggest that female combatants are no more common in conflicts active in the 2000s and beyond. Our results also suggest that militarily capable groups are actually more likely to recruit female fighters than their weaker counterparts. Combined with the generally positive association between female combatants and conflict duration, this might suggest that women are more likely to enter rebellions in larger numbers after the group is well established rather than when it is new or weak. The results also provide some evidence that groups relying on forced recruitment are more likely to include larger numbers of female combatants and demonstrate that groups utilizing suicide terrorism are more likely to include female combatants than groups that eschew this tactic. Finally, we find some evidence that a state's level of economic development is negatively correlated with female combatant prevalence.

Conclusion

Although a substantial and growing body of research examines women's participation in various conflicts, few studies explain variation in female combat participation across rebel groups and conflicts systematically. Our research contributes to this body of literature by offering clear arguments and conducting rigorous empirical tests to uncover patterns of female fighters in civil conflicts from 1979 to 2009. The results support our central argument that gender equality, in practice, impacts the presence of female combatants in rebel

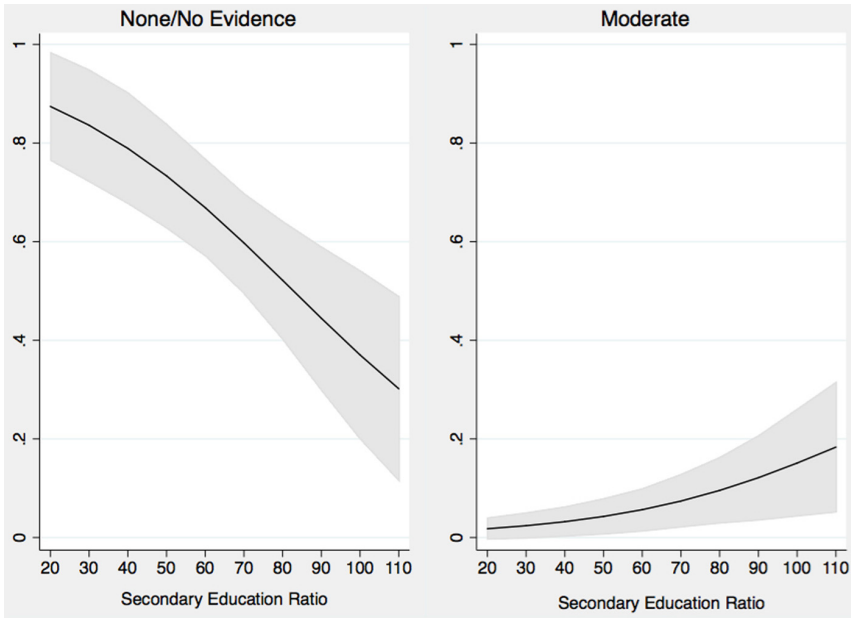


Figure 4. Impact of secondary education ratio on female combatant prevalence. Probability of observing no evidence (left panel) or a moderate level (right panel) of female combatants over the range of *Female Secondary Ratio*.

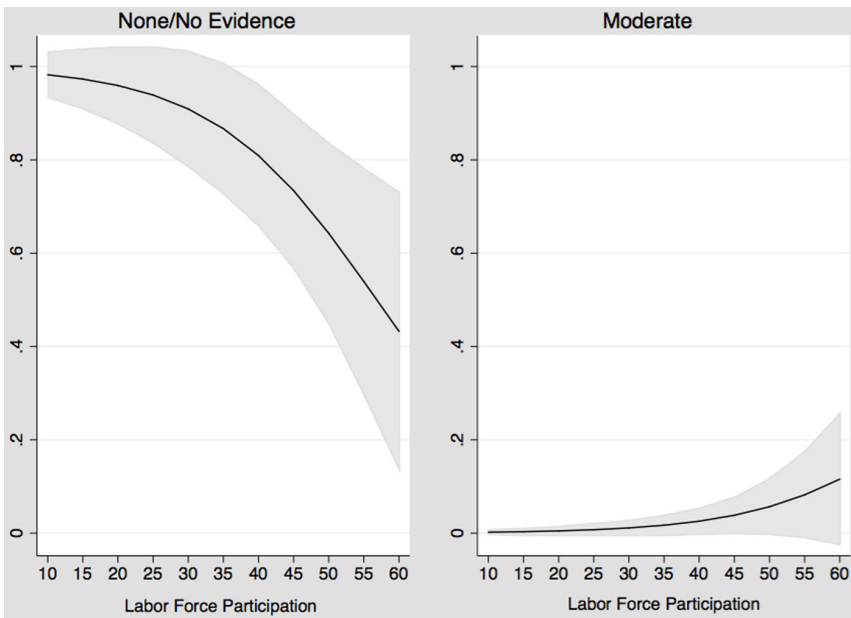


Figure 5. Impact of female labor force participation on female combatant prevalence. Probability of observing no evidence (left panel) or a moderate level (right panel) of female combatants over the range of *Female Labor Force Participation*.

organizations. Thus, we conclude that opportunities afforded to women outside of conflict, namely greater integration into educational and economic institutions, impact their participation as fighters within conflicts. These findings demonstrate that gender equality not only affects whether women are present within rebel organizations but also whether they do equal work within them.

Our research is also important because it speaks to other research on this topic, especially the work in this special issue. First, we join Sjoberg in renewing Enloe's (1989) call for scholars to consider where women are positioned in international politics and appreciate their diverse contributions. Sjoberg's in-depth examination of women's participation in (and against) the Islamic State highlights a case where women are "*hypervisible*" and adopt myriad roles on both sides of the conflict. Our research, however, differs in offering a cross-national examination of women's roles across different conflicts to answer the important questions of how often and to what extent women fight for rebel organizations. We also illuminate cases where women's contributions may have been less visible while pushing back against the discourse highlighted in some of the articles analyzed in Sjoberg's work in this collection, that women are apolitical, non-violent and vulnerable.

Our findings also engage with the others in this issue to inspire new research questions. For example, Chu and Braithwaite's contribution to this collection examines the relationship between sexual violence and civil war settlement and suggests that some non-state actors may utilize sexual violence to drive their opponents to the negotiating table or as non-pecuniary rewards for participation. One might ask, however, whether the gender composition of a group's fighting force might influence its willingness to pursue such a strategy. Although Cohen (2013) confirms that women combatants have engaged in sexual violence during civil conflict, it might be worth examining whether the extent of women's integration into an organization affects this relationship. Moreover, since societal gender equality influences women's participation in rebellion on the supply side, it is possible that sexual violence may be less likely in organizations that draw large numbers of female recruits. Specifically, the use of rampant sexual violence may repulse potential recruits committed to gender equality and may result in organizations that are less permissive of such behavior. In their article, Tir and Bailey find that external threats to a state's territorial integrity decrease women's welfare on multiple dimensions, including education and employment. Coupled with our study, these results may imply that territorial threats obstruct avenues for female participation in dissent by dampening women's access to employment and educational institutions, which often serve as conduits for their recruitment.

Lastly, the articles by Huber and Karim and Haglund and Richards may suggest ways that women's combat participation may affect societies post-conflict. In particular, Haglund and Richards's article argues that women's political standing may increase as a result of their participation in rebellions, which may create political space for women's issues. As a result, female mobilization for combat during conflict may be useful for remediating issues, such as gender-based violence, that largely afflict women. The prevalence of female combatants in rebel organizations may also be influenced by reforms, such as gender balancing in the state's security sector. Huber and Karim suggest that gender reform promotes women's fundamental rights to participate in security and encourages women's empowerment, both of which may increase security. However, it may also cut the other way: women's increased integration may normalize women's participation in security institutions and related tasks, increasing the probability that rebels also consider women suitable combatants. As a result, reforms to the state security sector may increase women's integration into anti-state

organizations as well. Lastly, our research is necessary to answer the policy community's (e.g. United Nations) call to incorporate women into peace building and post-conflict politics. It is crucial that we are aware of where women are and what they are doing in order to find effective ways to rehabilitate and (re)integrate them into post-conflict society.

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Notes

1. However, as Sjoberg's article in this volume makes clear, assessing women's agency within armed movements is difficult.
2. The "prestige" afforded to the production of violence over the act of caregiving is a reflection of a highly gendered, masculinized society (Caprioli, 2005).
3. Gender-based divisions of labor are also evident in groups that include female combatants. Luciak (2001) reports that even within the FMLN more than twice as many women served as cooks than as combatants—a ratio not reflected among male recruits.
4. These norms also shape divisions of labor within non-violent social movements (Cable, 1992).
5. Women's emancipation was probably not the rebels' primary goal but rather a byproduct of their efforts to erode traditional social structures, which aided their political and military objectives.
6. These roles included radio operators, combat medics, and expansion workers (community organizers/recruiters). These roles were considered frontline combat positions and were generally viewed as prestigious.
7. The sample is based on the Uppsala Conflict Data Program's Dyadic Dataset (Harbom et al., 2007) but excludes coups and related military factions.
8. Information on women's participation in each rebel group was acquired through exhaustive searches of news, academic, and international and non-governmental reports. See the Data Appendix on the author's websites for additional details on the data collection and coding processes.
9. The "best" estimate requires specific evidence that women participated in armed combat, while the "high" estimate considers more ambiguous language such as women "taking up arms" as evidence of female combatants.
10. It is also likely that these indicators are impacted by the conflict itself, thus presenting the possibility of endogeneity. However, as a robustness check, we also employed the average values of the given indicators over the duration of the conflict. The results are substantively similar.
11. Because Cohen's (2013) data are coded at the conflict level, we hand matched the groups used in our sample to the conflicts and groups listed in her replication materials. Observations not included in Cohen's data are coded missing.
12. Data for *Female Labor Force Participation* begin in 1990, substantially reducing the number of observations.
13. We also use indicators from the CIRI Human Rights Dataset (Cingranelli et al., 2014) to examine the relationship between women's political and economic rights and female combatant prevalence. The coefficients for these measures are positive, but only the political rights variable attains significance.

References

- Alison M (2009) *Women and Political Violence: Female Combatants in Ethno-national Conflict*. New York: Routledge.
- Benmelech E and Berrebi C (2007) Human capital and the productivity of suicide bombers. *The Journal of Economic Perspectives* 21(3): 223–238.
- Blaydes L and Linzer DA (2008) The political economy of women's support for fundamentalist Islam. *World Politics* 60(4): 576–609.
- Brockett C (2005) *Political Movements and Violence in Central America*. Cambridge: Cambridge University Press.
- Brown T (2001) *The Real Contra War: Highlander Peasant Resistance in Nicaragua*. Norman, OK: University of Oklahoma Press.
- Bueno de Mesquita E (2005) The quality of terror. *American Journal of Political Science* 49(3): 515–530.
- Cable S (1992) Women's social movement involvement: The role of structural availability in recruitment and participation processes. *The Sociological Quarterly* 33(1): 35–50.
- Caprioli M (2005) Primed for violence: The role of gender inequality in predicting internal conflict. *International Studies Quarterly* 49(2): 161–178.
- Chicago Project on Security and Terrorism (2015) *Suicide Attack Database*, 30 September 2015 Release [Data File]. Available at: <http://cpostdata.uchicago.edu/>
- Chinchilla NS (1983) Women in revolutionary movements: The case of Nicaragua. In: Stanford Central American Action Network (ed.), *Revolution in Central America*. Boulder, CO: Westview Press, pp. 422–434.
- Cingranelli D, Richards DL and Clay KC (2014) The CIRI Human Rights Dataset. Version 2014.04.14. Available from: www.humanrightsdata.com
- Cohen D (2013) Explaining rape during civil war: Cross-national evidence (1980–2009). *American Political Science Review* 107(3): 461–477.
- Coulter C (2008) Female fighters in the Sierra Leone war: Challenging the assumptions? *Feminist Review* 88: 54–73.
- Coulter C, Persson M and Utas M (2008) *Young Female Fighters in African Wars*. Nordiska Afrikainstitutet.
- Cunningham D, Gleditsch KS and Salehyan I (2013) Non-state actors in civil wars: A new dataset. *Conflict Management and Peace Science* 30(5): 516–531.
- Dalton A and Asal V (2011) Is it ideology or desperation? Why do organizations deploy women in violent terrorist attacks? *Studies in Conflict and Terrorism* 34(10): 802–819.
- Enloe C (2014) *Bananas, Beaches and Bases: Making Feminist Sense of International Politics*. Berkeley, CA: University of California Press.
- Gleditsch K (2002) Expanded trade and GDP data. *Journal of Conflict Resolution* 46(5): 712–724.
- Goldstein J (2001) *War and Gender: How Gender Shapes the War System and Vice Versa*. Cambridge: Cambridge University Press.
- Gonzalez-Perez M (2008) *Women and Terrorism: Female Activity in Domestic and International Terror Groups*. New York: Routledge.
- Harbom L, Melander E and Wallensteen P (2007) Dyadic dimensions of armed conflict, 1946–2007. *Journal of Peace Research* 45(5): 697–710.
- Henshaw A (2016) Where women rebel: Patterns of women's participation in armed rebel groups: 1990–2008. *International Feminist Journal of Politics* 18(1): 39–60.
- Kabeer N (2005) Gender equality and women's empowerment: A critical analysis of the third Millennium Development Goal. *Gender and Development* 13(1): 13–24.
- Kampwirth K (2002) *Women and Guerrilla Movements: Nicaragua, El Salvador, Chiapas, Cuba*. University Park, PA: Pennsylvania State University Press.

- Kenworthy L and Malami M (1999) Gender inequality and political representation: A worldwide comparative analysis. *Social Forces* 78(1): 235–269.
- Klandermans B and Oegema D (1987) Potentials, networks, and barriers: Steps toward participation. *American Sociological Review* 52(4): 519–531.
- Krueger A and Malečková J (2003) Education, poverty and terrorism: Is there a causal connection? *The Journal of Economic Perspectives* 17(4): 119–144.
- Liao T (1990) Women in the Taiping Movement in nineteenth-century China. In: West G and Blumberg R (eds), *Women and Social Protest*. New York: Oxford University Press, pp. 120–133.
- Lobao L (1990) Women in revolutionary movements: Changing patterns of Latin American guerilla struggle. *Dialectical Anthropology* 15: 211–232.
- Luciak I (2001) *After the Revolution: Gender and Democracy in El Salvador, Nicaragua and Guatemala*. Baltimore, MA: Johns Hopkins University Press.
- Lyons T (2004) *Guns and Guerrilla Girls: Women and the Zimbabwean National Liberation Struggle*. Trenton, NJ: Africa World Press.
- Marcus A (2007) *Blood and Belief: The PKK and the Kurdish Fight for Independence*. New York: NYU Press.
- Mason DT (1992) Women's participation in Central American revolutions: A theoretical perspective. *Comparative Political Studies* 25(1): 63–89.
- Mazurana D, McKay S, Carlson K and Kasper J (2002) Girls in fighting forces and groups: Their recruitment, participation, demobilization, and reintegration. *Peace and Conflict: Journal of Peace Psychology* 8(2): 97–123.
- McAdam D (1986) Recruitment to high-risk activism: The case of Freedom Summer. *American Journal Of Sociology* July: 64–90.
- McKay S (2005) Girls as “weapons of terror” in Northern Uganda and Sierra Leonean rebel fighting forces. *Studies in Conflict and Terrorism* 28: 385–397.
- Nghidinwa M (2008) *Women Journalists in Namibia's Liberation Struggle, 1985–1990*. Basel: Basler Afrika Bibliographien.
- Oppel Jr R (2015) Two female soldiers poised to graduate from ranger school. *New York Times*, 17 August. Available from: <http://www.nytimes.com/2015/08/18/us/two-female-soldiers-poised-to-graduate-from-ranger-school.html>
- Pateman R (1990) *Eritrea: Even the Stones are Burning*. Trenton, NJ: The Red Sea Press.
- Ray R and Kortegew AC (1999) Women's movements in the Third World: Mobilization, identity, and autonomy. *Annual Review of Sociology* 25: 47–71
- Reif L (1986) Women in Latin American guerrilla movements: A comparative perspective. *Comparative Politics* 18(2): 147–169.
- Scholzman K, Burns N and Verba S (1999) “What happened at work today”: A multistage model of gender, empowerment, and political participation. *Journal of Politics* 61(1): 29–53.
- Shehadeh LR (1999) Women in the Lebanese militias. In: Shehadeh LR (ed.), *Women and War in Lebanon*. Gainesville, FL: University of Florida Press, pp. 145–166.
- Tetreault MA (2000) Women and revolution in Vietnam. In: Smith B (ed.), *Global Feminisms Since 1945*. London: Routledge Press, pp. 45–64.
- Thiranagama S (2014) Female militancy: Reflections from Sri Lanka. In: Fernandes L (ed.), *Routledge Handbook of Gender in South Asia*. New York: Routledge, pp. 115–128.
- Thomas J and Bond K (2015) Women's participation in violent political organizations. *American Political Science Review* 109(3): 488–506.
- UN Women (2012) *Identifying Women's and Peace and Security Priorities*. Available from: <http://www.unwomen.org/~media/Headquarters/Media/Publications/en/03BIdentifyingWomens.pdf>
- Viterna J (2013) *Women in War: The Microprocesses of Mobilization in El Salvador*. Oxford: Oxford University Press.
- Wallace M and Jenkins JC (1995) The new class, postindustrialism, neocorporatism: Three images of social protest in the western democracies. In: Jenkins JC and Klandermans B (eds), *The Politics of*

- Social Protest: Comparative Perspectives on States and Social Movements*. Minneapolis, MN: University of Minnesota Press, pp. 96–137.
- Wickham-Crowley T (1992) *Guerrillas and Revolutions in Latin America: A Comparative Study of Insurgents and Regimes Since 1956*. Princeton, NJ: Princeton University Press.
- Wood RM and Thomas JL (2017) Women on the frontline: Rebel group ideology and women's participation in violent rebellion. *Journal of Peace Research* 54(1): 31–46.
- World Bank (2015) *World Development Indicators*. Washington, DC: The World Bank (producer and distributor). Available from: <http://data.worldbank.org/data-catalog/world-development-indicators>