Appendix for "The Study of Gender and Women in Cross-National Political Science Research: Rethinking Concepts and Measurement"

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1 Measurement Model

Here we provide additional information about our measurement models. As we state in the body of the manuscript, We use a mix of continuous, binary, and ordinal indicators. Continuous indicators were assumed to follow normal distributions, and were all standardized prior to estimation. Formally, for any continuous indicator y_j we assume:

$$y_{ij} \sim \mathcal{N}(\mu_{ij}, \sigma_j^2)$$

 $\mu_{ij} = \beta_j X_i$

Where X_i is the latent variable and β is a "factor loading" that indicates the direction and strength of the relationship between the latent variable and the observed indicator in question. For binary indicators we assume:

$$y_{ij} \sim Bernoulli(p_{ij})$$

 $logit(p_{ij}) = \alpha_j + \beta_j X_i$

Where α is a "difficulty" parameter that indicates the value of the latent variable at which the binary outcome becomes 1, and β is a "discrimination" parameter that indicates how quickly $\Pr(y_{i,j} = 1)$ changes as the latent variable increases. Ordinal variables are assumed to follow categorical distributions with J categories, where:

$$Pr(y_{i} = 1 | X_{i,t}) = \Phi(\tau_{1} - \beta X_{i,t})$$

$$Pr(y_{i} = j | X_{i,t}) = \Phi(\tau_{j} - \beta X_{i,t}) - \Phi(\tau_{j-1} - \beta X_{i,t})$$

$$Pr(y_{i} = J | X_{i,t}) = 1 - \Phi(\tau_{J-1} - \beta X_{i,t})$$

Where Φ is the c.d.f. of the standard normal distribution and the τ s are "cut-point" parameters that indicate the value of the latent variable at which the observed variable changes categories. In each model X is assigned a normal prior distribution with mean 0 and variance 1. This is a standard assumption made to identify the model. Each α is assigned a normal prior with mean 0 and variance 10. Most of the β s are given normal prior distributions with mean 0 and variance 10. Due to the "rotational invariance" problem inherent to latent variable models, some of the parameters in the model must be restricted for identification (Bollen 1989).¹ For this reason, in each model several of the β parameters are restricted to be positive or negative. Each of the constrained β s have truncated (at zero) normal prior distributions with mean 2 or -2 and variance 10. In addition to helping identify the model, these restrictions also orient the latent variables so that higher values on each scale correspond to higher values of the concept in question. For each continuous indicator the σ^2 parameter has a Gamma prior distribution with shape and rate parameters of 10. For each model we ran 2 Markov chains for at least 3,000 iterations and stored the last 1,000 to summarize the posterior distributions of the parameters. Visual diagnostics and a Gelman-Rubin test (Gelman and Rubin 1992) showed no signs of non-convergence.

We obtained the data used in the measurement models from the World Bank's Gender Statistics and Women, Business and the Law datasets, the UNDP, the OECD, the Varieties of Democracy data (Coppedge et al. 2017), and the Woman Stats data project (Caprioli et al. 2009).² The World Bank's Gender Statistics data set is compiled from many different sources, including the USAID-funded Demographic and Health Surveys, the International Labor Organization (ILO), various UN agencies and programs, the World Bank's Global Financial Inclusion (GFI) data set (Demirgüç-Kunt et al. 2015), and the OECD. Table 1–3 lists the observed indicators included in each model along with their original sources.

¹Rotational invariance means the parameters in the model could all be "rotated," i.e. have their signs reversed, and the fit of the model to the data would not be affected.

²An obvious omission is the Cingranelli-Richards Human Rights Data Project (Cingranelli, Richards and Clay 2014), used in several studies listed in Tables 1 and 2 of the body of the manuscript. We do not use these indicators because they measure both law and practice, which we wish to keep separate.

Source	Indicator					
Demographic and Health Surveys	Proportion that do not own land, ratio					
ILO	Contributing family workers (of employed), ratio					
	Ratio of female to male labor force participation rate					
	Wage and salaried workers (of employed), ratio					
UN Statistics Division	Avg. hours spend on unpaid domestic work, ratio					
UNESCO	Children out of primary school, ratio					
	Completed bachelor's degree (25 yrs+), ratio					
	Completed doctoral degree, ratio					
	Completed lower secondary, ratio					
	Completed masters degree, ratio					
	Completed no schooling, ratio					
	Completed primary, ratio					
	Completed tertiary, ratio					
	Completed upper secondary, ratio					
	Expected years of schooling, ratio					
	Graduation rate at lower secondary, ratio					
	Primary enrollment rate, ratio					
	Secondary enrollment rate, ratio					
	Tertiary enrollment rate, ratio					
V Dem	Female head of government					
	Proportion of female cabinet members					
	Proportion of female legislators					
World Bank Gender Statistics	Female share of graduates in agriculture, tertiary					
	Female share of graduates in education, tertiary					
	Female share of graduates in engineering/manufacturing/construction, tertia					
	Female share of graduates in health, tertiary					
	Female share of graduates in humanities and arts, tertiary					
	Female share of graduates in science, tertiary					
	Female share of graduates in services, tertiary					
	Female share of graduates in social science/business/law, tertiary					

Table 1: Observed Indicators for Women's Inclusion Model

	Female share of professional and technical workers				
World Bank WBL	Female chief justice				
	Proportion of female high court justices				
	Proportion of firms with female participation in ownership				
	Used an account to receive wages, ratio				

Table 2: Observed Indicators for Women's Security Model

Source	Indicator				
Demographic and Health Surveys	Contraceptive prevalence				
	Decisions about major household purchases made mainly by husband				
	Decisions about woman's own healthcare made mainly by her				
	Decisions about woman's visits to family/relatives made mainly by her				
	Demand for family planning satisfied (of married women)				
	Participation rate in decisions about daily purchases				
	Participation rate in decisions about major household purchases				
	Participation rate in decisions about own health care				
	Participation rate in decisions about visits to family/friends				
	Participation rate in decisions about what food to cook daily				
	Prevalence of Female Genital Cutting				
	Proportion that do not own house, ratio				
	Unmet need for contraception, married women				
World Bank GFI	Account at a financial institution, ratio				
ILO	Unemployment rate, ratio				
	Vulnerable employment (of employed), ratio				
	Self employed (of employed), ratio				
OECD	Wage gap (median wage)				
UN	Infant mortality rate, ratio				
	Under 5 mortality rate, ratio				
UN Population Division	Adolescent fertility rate (15-19 yrs)				
	Fertility rate				
	Life expectancy ratio				

	Male to female births ratio					
UN Statistics Division	Women subjected to physical/sexual violence in last 12 months					
UNAIDS	Access to antiretroviral drugs, ratio					
	Prevalence of HIV, ratio					
UNDP	Pregnant women w/ ≥ 4 antenatal visits					
UNESCO	Adult literacy rate $(15+)$, ratio					
UNICEF	Births attended by skilled health staff (of total births)					
	Pregnant women receiving prenatal care					
Woman Stats	Marital rape scale ³					
	Murder Scale 1^4					
	Rape prevalence scale ⁵					
World Bank Gender Stats	Cannot come up with emergency funds, ratio					
	Child mortality ratio					
	Debit card in own name, ratio					
	Long-term unemployment ratio					
	Saved money in past year, ratio					
	Received loan in past year, ratio					
World Bank WBL	Legal age of marriage, ratio					
	Maternity leave, days paid					
	Maternity leave, pct. wages paid					
	Mothers guaranteed equivalent position after maternity leave					
	Paternity leave, days paid					

³This is an ordinal coding of the officially reported rape prevalence per 100,000 people. 0:0, 1:1-10, 2:11-30, 3:31-60, 4:>60. See http://www.womanstats.org/new/codebook/

⁴This is an ordinal scale coded 0 to 2. It is "[d]esigned to scale the sanction of or pressure for female murder in a given state, examining cultural/social practices that condone murder and/or injuring of women. This includes murder as a result of accused witchcraft, elopement, suspicion of promiscuity, infidelity, rape, "honor" killings, religious or ethnic practices, dowry deaths, acid attacks, etc." It is coded 0 where there is no evidence of such practices., 1 where there is some evidence of such practices, and 2 where there is substantial evidence of such practices.

 5 This is an ordinal scale coded 0 where sources indicate that marital rape is rare or infrequent, 1 where sources indicate that marital rape is not uncommon but by no means universal, and 2 where sources indicate that marital rape is a significant problem (high prevalence)

World Health Organization	Maternal mortality rate
	Prevalence of obesity, ratio
	Prevalence of severe wasting, ratio
	Prevalence of stunting, ratio
	Prevalence of underweight, ratio
	Smoking prevalence, ratio

Table 3: Observed Indicators for Women's Rights Model

Source	Indicator
World Bank WBL	Civil remedies for sexual harassment exist
	Civil remedies for sexual harassment in employment exist
	Clear criminal penalties for domestic violence exist
	Constitutional clause on gender nondiscrimination in the constitution
	Criminal penalties for sexual harassment exist
	Criminal penalties for sexual harassment in employment exist
	Dismissal of pregnant workers is prohibited
	Domestic violence legislation covers economic violence
	Domestic violence legislation covers emotional violence
	Domestic violence legislation covers physical violence
	Domestic violence legislation covers sexual violence
	Domestic violence legislation exists
	Domestic violence legislation protects former spouses
	Domestic violence legislation protects unmarried partners
	Employers required to provide break for nursing mothers
	Female and male surviving spouses have equal rights to inherit assets
	Law mandates equal remuneration for females and males for work of equal value
	Law mandates nondiscrimination based on gender in hiring
	Law prohibits/invalidates child or early marriage
	Law provides for the valuation of non-monetary contributions
	Legal age of marriage, ratio
	Legislation explicitly criminalizes marital rape

Legislation on domestic violence protects family members Legislation on sexual harassment in education exists Legislation on sexual harassment in employment exists Legislation on sexual harassment in public places exist Legislation specifically addresses sexual harassment Married couples share legal responsibility for maintaining family expenses Married men and women have equal ownership rights to property Married women are required by law to obey their husbands Married women can be head of household in same way as men Married women can confer citizenship on her children in same.way as men Married women can confer citizenship to a non-national spouse in same way as men Married women can choose where to live in same way as men Married women can get a job/pursue a trade/profession in same way as men Married women can obtain national ID card in same way as men Married women can open bank account in same way as men Married women can register a business in same way as men Married women can sign a contract in same way as a man Married women can travel outside their home Married women can travel outside the country in same way as men Nonpregnant women can do the same jobs as men Nonpregnant women can work in jobs deemed arduous in same way as men Nonpregnant women can work in jobs deemed morally inappropriate in same way as men Nonpregnant women can work the same night hours as men Penalties exist for authorizing/knowingly entering into child/early marriage Protection orders for domestic violence exist Protection orders prohibit/limit contact with survivor Protection orders provide for removal of perpetrator from the home Sons and daughters have equal rights to inherit assets Specialized court or procedure exists for domestic violence Unmarried men and women have equal ownership rights to property Unmarried women can apply for passport in same way as men Unmarried women can be head of household in same way as men Unmarried woman can choose where to live in same way as men

	Unmarried women can confer citizenship on her children in same way as men
	Unmarried women can obtain national ID card in same way as men
	Unmarried women can open a bank account in same way as men
	Unmarried women can register business in same way as men
	Unmarried women can sign a contract in same way as men
	Unmarried women can travel outside her home in same way as men
	Woman's testimony carries the same evidentiary weight in court as a man's
V Dem	Women's access to justice index
	Women's property rights index
	Women's suffrage (proportion eligible to vote)

Figures 1–3 show the indicators used in each model, along with the β parameter estimates for each indicator, as well as 95% credible intervals for the estimates. The estimates labeled "discrimination" are for binary or ordinal indicators. Those labeled "factor loadings" are for continuous indicators. Discrimination parameters and factor loadings are not on the same scale and so cannot be compared directly. In both cases larger estimates indicate a stronger relationship between the observed indicator and the latent variable, so that variables with larger β s are assigned more weight in the resulting index. A factor loading can be interpreted as a standardized regression coefficient, i.e. the change (in standard deviations) in the observed indicator that results from an increase of 1 standard deviation in the latent variable.

Figure 1 shows the estimates from the inclusion model, which features a number of variables related to women's inclusion in education, political institutions, and the workforce. Nearly all of these variables exhibit a meaningful relationship with the latent variable. This is indicated by the fact that the credible intervals for the β s do not contain zero, with three exceptions: the ratio of female to male Ph.D. completion, the female to male ratio of average number of hours spend on unpaid domestic work, and the ratio of women to men who do not own land. For the most part, outcomes for primary and secondary education receive relatively high weights in the index, as do indicators that measure sex imbalance in higher education for particular academic disciplines. Whether the chief justice on the national high court is female also receives a high weight. Interestingly, the model assigns this variable a higher weight than whether the head of government is female. It is also interesting to note that the ratio of female to male wage and salaried workers receives the largest weight of any economic variable, much more than the female to male labor force participation ratio.

Figure 2 shows the β estimates from the security model. Our concept of female security is broad,



Beta Parameters, Women's Inclusion

Figure 1: Factor loadings/discrimination parameters with 95% credible intervals. Estimates are shown as dots, intervals shown as lines.

and the model reflects this. It includes variables that measure the extent to which women are economically vulnerable and/or dependent on men for material well being, exposure to the risk of bodily harm from physical violence or medical conditions (including lack of access to family planning resources and proper prenatal care), and male dominance in everyday decision-making. There are 47 variables in the model, and for 39 of them the credible intervals for β do not contain 0. Variables measuring the extent to which women are involved in everyday decision-making receive relatively high weight in the model. These include the percentage of women who participate in decisions about their own healthcare, major and daily household purchases, and when to visit their family members. Variables related to reproductive healthcare also receive relatively high weights. These include contraceptive prevalence, access to family planning resources, adult and adolescent fertility rates, and maternal mortality rates. The proportion of women who report having been subjected to physical/sexual violence in the past year also receives a relatively high weight.

Figure 3 displays the β estimates from the rights model. This model features 75 variables, and in only 10 cases do the credible intervals for β contain 0. All of the variables in this model relate to formal law rather than practice. The model assigns relatively high weights to laws related to freedom of movement for women, including whether married women can travel outside their home or country. It also gives high weights to laws pertaining to domestic violence, including whether courts have the authority to issue protection orders in cases of domestic violence, whether those orders can require the perpetrator be removed from the house, and laws that protect unmarried partners in addition to spouses. Laws that require wives to obey their husband receive a large, negative weight in the model.

Figures 4–9 show heat maps for the means and standard deviations of each latent variable for 2014. Darker shades correspond to larger estimates (higher scores) or larger standard deviations (more uncertainty). Figures 4–9 show the uncertainty in the latent variable estimates, with darker shades corresponding to more uncertainty. Bolivia and Sweden are shaded very darkly in Figure 4, for example. Bolivia's latent variable score is 1.57 and Sweden's is 1.18. Bolivia's high score is due to a relatively high proportion of women in the cabinet, legislature, and high court. Sweden has high values for these variables as well, though it has a smaller proportion of women on its high court. Sweden also ranks highly on several education outcomes for women. In Figure 5 Bolivia is also shaded more darkly than Sweden, indicating that the uncertainty in Bolivia's score is larger, which reflects the fact that data coverage for Bolivia is sparser than for Sweden. The uncertainty in the scores allows us to draw probabilistic comparisons between countries rather than deterministic ones. For example, instead of concluding that women's inclusion is higher in Bolivia than Sweden because it has a larger estimate, we can estimate the probability that Bolivia's score is higher than Sweden's. In this case the probability is 0.70.⁶

⁶This is estimated by drawing 10,000 values from the posterior density for each country and calculating



Beta Parameters, Women's Security

Figure 2: Factor loadings/discrimination parameters with 95% credible intervals. Estimates are shown as dots, intervals shown as lines.

Beta Parameters, Women's Rights

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Discrimination								
Marr, Wom, Can Travel Outside Home	. –						•	
Prot. Orders for Dom. Viol.	. –					0		- · · ·
Marr. Wom. Can Travel Outside Country								
Dom. Viol. Law Protects Unmarr. Partners Wom. Testimony Carries Same Weight	2							
Prot. Orders Remove Perp. from Home	• -					•		
Unmarr. Wom. Can Travel Outside Country	' -					•		
Dom. Viol. Law Covers Emotional Viol.								
Equal Inheritance Rights for Spouses Unmarr. Wom. Can Be Head of Household	17						_	
Dom. Viol. Law Protects Fam. Members Dom. Viol. Law Covers Phys. Viol.	; -					•		
Dom. Viol. Law Covers Phys. Viol.						•		
Equal Inherit. Rights for Sons/Daughters Joint Financial Responsibility								
Prot. Orders Prohibit Contact	. –							
Unmarr. Wom. Can Give Child Citizenship	, –							
Unmarr Wom Can Apply for Passport	+				-•			
Dom. Viol. Law Protects Former Spouses Marr. Wom. Can Give Child Citizenship	. –							
Mari. Wom. Can Give Child Cilizenship Special Court for Dom Viol	·]				-			
Special Court for Dom. Viol Unmarr. Wom. Can Obtain ID Card	-							
Marr. Wom. Choose Where to Live	• -							
Marr. Wom. Can Pursue Career	· -							
Marr. Wom. Can Give Spouse Citizenship	·]				*			
Law Ágainst Dom. Viol. Law Against Harassment in Employment	1				.			
Civ. Remedies for Harassment in Employment	t –				.			
Dom. Viol. Law Covers Sexual Viol.	. –			•••••	- · · · ·			
Marr. Wom. Can Apply for Passport								
Law for Valuation of Nonmonetary Contr. Civil Remedies for Harassment	1							
Marr. Wom. Can Be Head of Household	i –							
Law Against Firing Pregnant Wom.	. –			• • • • •	•••••			
Law Against Harassment in Education	-			•				
Wom. Can Work in Jobs Deemed Immora	: 1							
Marr. Wom. Can Sign Contract Wom. Can Work Night Hours	-							
Wom, Can Do Same Jobs As Men	1 -			• • •				
Law Against Marital Rape	• -			• • •				
Unmarr. Wom. Equal Rights to Property Wom. Can Work in Arduous Jobs	-			•				
Crim. Penalties for Dom. Viol.				-				
Dom. Viol. Law Covers Economic Violence	, –			· •				
Dom. Viol. Law Covers Economic Violence Marr. Wom. Can Open Bank Account	: -				•••••			
Law Prohibits Harassment	t —							
Marr. Wom. Can Obtain ID Caro Wom. Can Work in Hazardous Jobs	:]							
Law Against Discr. in Hiring	1 -							
Marr. Wom. Equal Rights to Property	-			• • • •				
Wom. Can Perform Same Tasks as Mer Marr. Wom. Can Register a Bus.								
Wom. Can Work Same Jobs as Men				-				
Law Mandates Equal Pay								
Crim. Penalties for Harassment in Employment Unmarr. Wom. Can Pursue Career	: -			•••				
Unmarr. Wom. Can Pursue Career	° -			•				
Unmarr. Wom. Can Sign Contracts	:]							
Unmarr. Wom. Can Travel Outside Home Unmarr. Wom. Can Open Account	. –							
Unmarr, Wom, Choose Where to Live	. –			•				
Unmarr. Wom. Can Register Bus.				•				
Law Prohibits Childhood Marriage Same Position After Maternity Leave	. –							
Crim. Penalties for Childhood Marriage				•				
Crim. Penalties for Harassment	t –			• • • • •				
Must Provide Break for Nursing	, –			• • • • •				
Const. Clause on Gender Non–Discr Law Against Harassment in Public	: 1			1				
Wife Must Obey Husband by Law	;]							
Wife Must Obey Husband by Law Factor Loadings	.	-						
Women's Property Rights	: -							
Women's Access to Justice								
Women's Suffrage Legal Marriage Age Ratio	,]							
Length of Paid Maternity Leave	, –							
Length of Paid Maternity Leave Length of Paid Paternity Leave				•••••				
Maternity Leave Benefits	; -		• • • • • •					
				1				
		1	-2		4	6	8	10

Figure 3: Factor loadings/discrimination parameters with 95% credible intervals. Estimates are shown as dots, intervals shown as lines.



Figure 4: Women's Inclusion Estimates, 2012



Figure 5: Women's Inclusion Uncertainty, 2012



Figure 6: Women's Security Estimates, 2012



Figure 7: Women's Security Uncertainty, 2012



Figure 8: Women's Rights Estimates, 2012



Figure 9: Women's Rights Uncertainty, 2012

2 MODEL DESCRIPTION

We wish to determine the impact of women's inclusion, rights, and security on civil conflict and civil war onset. We therefore drop observations for ongoing conflicts to distinguish between conflict onset and continuation. Because we have panel data and a binary outcome we include in each model a counter for the number of "peace years" between the beginning of the observation period (or the end of a conflict) and the onset of a (new) conflict. This makes these models discrete time duration models that allow for a monotonically increasing or decreasing hazard rate. We estimate an additional set of models that includes random intercepts for countries. These are the discrete time duration equivalents of frailty models.

3 SUGGESTIONS FOR STUDYING "GENDER EQUALITY"

In this section, we offer some potential suggestions for how to empirically study gender equality in a way that attempts to stay true to its original formulation. While we offer these suggestion, we by no means claim to be the authority on how to study gender equality. There is a vast and important literature on feminist methodology and the study of gender.⁷

In addition to using feminist methodology, we believe there are two ways to move forward on studying this topic. First, we believe that moving to a different unit of analysis will help prevent some of the problems mentioned above. Many of the conceptual and measurement issues mentioned above are due to studies that are at the macro, cross-national level. We believe that it is very difficult to measure gender equality at the cross-national level without using proxies that distort the concept and lead to measurement invalidity. Thus, our first suggestion is to move away from quantification at the macro level. Second, we believe that scholars can conduct studies at the macro-level, but by studying three alternative concepts, which are identifiable and measurable: *women's inclusion, women's rights, and women's security.* This suggestion was developed in the main part of the paper. We focus on the first suggestion in this section.

the proportion of those draws where the value for Bolivia is larger than that for Sweden.

⁷Feminist methodology often involves the perspectives of those that are subordinated; involves critiquing the status quo and the assumptions that go into non-gendered perspectives; it also involves reflexivity or a reflection between the relationship between researcher and the subject; and it account for how knowledge is produced and what that knowledge means (Ramazanoglu and Holland 2002). For more on feminist methodology, see Wibben (2010), Ramazanoglu and Holland (2002), Peterson (1994), Brown (1988), and Sjoberg (2009).

One suggestion to avoid concept conflation, stretching and measurement invalidity is to move from macro-cross-national studies to micro-level studies. These might include individual cases of countries or cases of different organizations such as peacekeeping missions. These units can be assessed individually or comparatively. In the main part of our paper, we mentioned that it is possible to observe variation on the dimensions of gender equality. In other words, the degree to which there are relational socialized roles that are privileged within particular units or across different units is possible to observe. However, doing so typically involves in-depth analysis of each case. Some scholars have engaged in this in-depth, micro-level analysis of gender equality. Karim and Beardsley (2017) spend an entire book-length manuscript describing the different ways that certain masculine identities-militarized masculinity and protectionistwithin peacekeeping missions perpetuate inequality within peacekeeping missions. To show this, they used a variety of methods including interviews with female and male peacekeepers, surveys in the host country of peacekeeping missions, as well as lab-in-the-field experiments of local female police officers. These micro level methods combined were used to show evidence of gender inequality in missions based on the dimensions mentioned above. Similarly, Kronsell (2012) highlights show how the Swedish have evolved over time with respect to gender equality, particularly because the role and identity of the national military evolved. Case studies of this sort allow researchers to delve into context and show the degree to which social identities are relational and hierarchal.

In addition to in-depth casework, there may be ways to study gender using particular innovations in methods such as surveys and experiments, where the unit of analysis is at the individual or group level. Innovations in these methods might be useful to capture elements of the concept that appear to be unobservable. Forsberg and Olsson (2018) argue that gender inequality is difficult to measure because "values assigned to masculinity and femininity and to male and female stereotypical roles and behaviors are core to the concept, but are very hard to observe, not least qualitatively."⁸ Yet, social psychologists have a long history in developing such tools to assess qualities that seem to be unobservable. Implicit bias tests, for example, measures attitudes and beliefs that people may be unwilling or unable to report. Such tests adapted to gender are potentially one way to better understand people's true preference or beliefs about gender roles and hierarchies of gendered characteristics. Some studies have already started to use surveys to better explain gendered beliefs. For example, Bjarnegård, Brounéus and Melander (2017) conduct a survey in Thailand and find that views about patriarchal values and ideals of masculine toughness predict participation in political violence. This paper makes a novel contribution in developing ways to test beliefs and ideas related masculinity and femininity. However, what is needed is an overarching theoretical framework for categorizing different survey questions into different concepts related to gender inequality. Otherwise this

 $^{^{8}}$ See pg. 4.

method will suffer from the same problems as cross-national studies on gender equality.

Moreover, though not studies about gender equality per se, experiments such as those conducted by Shepherd and Paluck (2015), which show the result of gendered social influence or Williams, Paluck and Spencer-Rodgers (2010), which shows how gendered ideas about earning money affect the "gender pay gap," highlight how gender (not just sex) can be manipulated in studies and how experimental methods could be applied to the study of gender equality. Experiments allow for a degree of creativity where researchers can manipulate what and how individuals or groups undergo experiences related to gender and then measure outcomes of interests. An obvious drawback to this type of study—survey or experimental—is that the individual or group unit of analysis only provides leverage for certain outcomes. Phenomena of interest to many political scientists such as war, regime change, transitions, repression, etc. cannot be captured by such studies.

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