

Slave Trade and Women Political Participation in Africa

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Abstract

Literature relates the slave trades and the temporary shock to the gender ratio to contemporary polygyny, HIV and fertility, as well as contemporary women labour force participation. We study whether present-day women political participation in sub-Saharan Africa can also be linked to the slave trades. We use individual level data from the Afrobarometer surveys and ethnic region slave trade data to evaluate whether the transatlantic and Indian Ocean slave trades are associated to women voting and views on women as political leaders today. Preliminary results suggest that the Indian Ocean slave trade and subsequent increase in the male-to-female gender ratio is positively associated to women political participation. This paper contributes to the literature on the contemporary effects of the slave trades, as well as the historical causes of gender gaps in political participation.

Keywords: slave trade, gender, Africa

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1 Introduction

Several studies have linked the slave trade to development outcomes and specifically, underdevelopment in Africa. An important channel through which the slave trades affect contemporary development outcomes, is the temporary change in the male-to-female gender ratio of regions during the respective slave trades. The transatlantic slave trade decreased the male-to-female ratio as more men were exported, whilst the Indian Ocean slave trade increased the male-to-female ratio as more women were exported (Campbell, 2003; Lovejoy, 2011; Manning, 1990). Although the change in the gender ratio is not necessarily persistent, the impact on society and gender dynamics is.

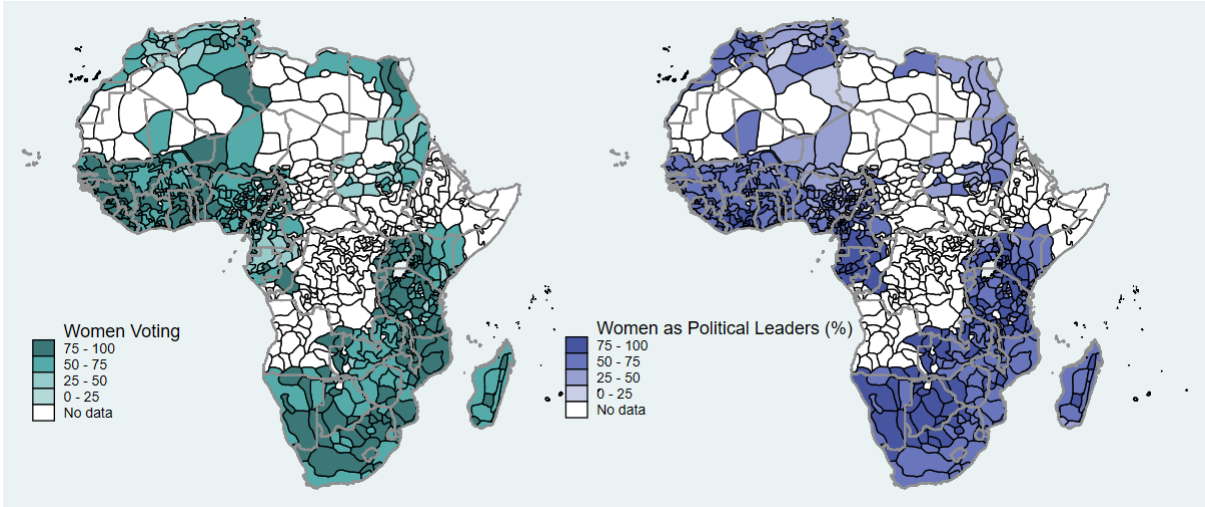
The demographic shock resulting from the transatlantic slave trade is for example associated to increased prevalence of polygyny in Africa (Bertocchi, 2016; Dalton & Leung, 2014; Fenske, 2015). Such changes in marital composition and institutions entail further socio-economic consequences like higher HIV infection rates amongst women, infidelity and child mortality (Bertocchi & Dimico, 2019). Recent literature also links the women-biased gender ratio during the transatlantic slave trade to contemporary women labour force participation.

Using Demographic and Health Surveys (DHS) data from 21 sub-Saharan countries, Teso (2019) shows that the likelihood of a women being employed is higher in ethnic regions subject to the transatlantic slave trade. In addition, he finds that the effect of this historic demographic shock is persistent. This association, however, only holds for the transatlantic slave trade and not the Indian Ocean slave trade, suggesting that it is the historic change in the male-to-female ratio and subsequent change in gender norms that is responsible for the increase in women employment. Due to the more men being exported during the transatlantic slave trade, women had to substitute for men in the workforce, which altered cultural beliefs in how women provide for their household.

We contribute to this literature by studying whether the slave trades are associated to contemporary women political participation. We distinguish between the two important slave trades, the transatlantic and Indian Ocean slave trades, as these altered the gender ratios in different directions and we would expect the effect on gender norms to be different as well. The aim of this study is to determine whether the transatlantic slave trade and/or Indian Ocean slave trade explains some of the variation in women voting and views on women as political leaders in Africa today.

The general agreement within the literature is that women are deprived of power economically, socially and politically (Bagues & Campa, 2020; Isaksson, Kotsadam, & Nerman, 2014; Robinson & Gottlieb, 2019). Figure 1 illustrates the share of women who vote within an ethnic region and the share of individuals who agree that women should have the same opportunity of being elected to political office as men. From the figure it is clear that there is still substantial variation in voting by women and views on women as political leaders across sub-Saharan Africa, but also within countries. Similarly, on a national level, women representation in parliament remains relative low and society still views women as inferior political leaders. Countries in the Pacific have 44 per cent women in the upper chamber of national parliament, the Americas and

Figure 1: Women Political Participation



Source: (BenYishay et al., 2017)

Note: This map illustrates the share of women voting (left) and the share of individuals that view women as equal political leaders (right).

Europe approximately 33 and 30 per cent, whilst in Sub-Saharan Africa only 24 per cent of upper chamber members of national parliament are women (Inter-Parliamentary Union, 2020). Women political participation is essential for a democracy and more women in political office have been associated to decreased corruption, and improved education and health policy (Hessami & da Fonseca, 2020). Determining historical effects on contemporary inequality in political participation is therefore essential in addressing socio-economic challenges faced by women and children in Africa.

To evaluate the impact of historical events such as the slave trades, we use Afrobarometer survey data from 36 countries georeferenced to Murdock's Ethnographic Atlas Murdock (1969) and combined with ethnic region level slave trades data from Nunn and Wantchekon (2011). We use the number of slaves exported during each of the slave trades as a measure of the intensity of the respective slave trade within an individual's ethnic region. Our findings show that ethnic region exposure to the Indian Ocean slave trade is associated with an increased likelihood for women to vote. Similarly, these ethnic regions are also associated with more progressive views regarding women as political leaders. The transatlantic slave trade is not statistically significant in determining contemporary women political participation. Our findings therefore suggest that the historic increase in the male-to-female ratio as a result of the Indian Ocean slave trade is associated with improving women political participation in Africa.

Our study furthermore contributes to the literature in two respects. The paper contributes to a growing literature on the long-run impact of historical events such as the slave trade on development in Africa.¹ Noteworthy, the seminal work by Nunn (2008) determine that African countries that experienced higher intensity of slave trade have lower GDP per capita today. He also shows that it was not necessarily poorer societies that were subjected to the slave trades,

¹Michalopoulos and Papaioannou (202), Nunn (2017) and Bertocchi (2016) provide a summary of literature related to the slave trade and economic effects.

societies such as the Kongo Kingdom with high population density were even more affected.

Studies link higher intensity of slave trade with lower levels of trust between and within ethnic groups, increased contemporary civil conflict and violence, as well as ethnic diversity in countries (Besley & Reynal-Querol, 2014; Boxell, 2019; Fenske & Zurimendi, 2017; Green, 2013; Nunn & Wantchekon, 2011; Whatley & Gillezeau, 2011). Furthermore, the slave trade affected pre-colonial political institutions within ethnic regions. Obikili (2016b) finds that ethnic regions subject to slave exports are more likely to be fragmented with less political authority. In Nigeria and Tanzania, these areas are also associated with higher incidence of corruption. In West Africa, Whatley (2014) finds that the transatlantic slave trade decreases democracy and liberalism in ethnic regions. Obikili (2016a) also shows that the slave trade in Nigeria and the Gold Coast is negatively associated with historical and contemporary literacy. On the other hand, Okoye and Pongou (2015) show that there is a positively relationship, resulting from the missionaries that set up in regions more hindered by the slave trade.

More generally, our paper expands the literature regarding gender norms and causes of gender gaps in political participation (Arriola & Johnson, 2014; Isaksson, 2014; Isaksson et al., 2014; Marien, Hooghe, & Quintelier, 2010; Ndlovu & Mutale, 2013). Whilst other studies such as Robinson and Gottlieb (2019) and Alesina, Giuliano, and Nunn (2013) have linked historical aspects such as matrilineality and historical plough use to women political participation, we believe this is the first paper to study the role of slave trade in this regard.

The rest of the paper is organised as follows. In Section 2, we provide background information on the slave trades and how the male-to-female ratio may possibly affect women political participation. Section 3 describes the empirical design. Sections 4, 5 and 6 provides the preliminary results and Section 7 concludes.

2 Background

Africa experienced four slave trades over the 1400 to 1900 period. Noteworthy was the transatlantic slave trade exporting slaves from Western, West-Central and Eastern Africa to work in European colony plantations in the Americas. Pre-dating the transatlantic slave trade, the Indian Ocean slave trade exported slaves from Eastern Africa to the Middle East, India and plantation islands in the Indian Ocean (Nunn, 2008). The other smaller two slave trades were the Red Sea and trans-Saharan slave trades.²

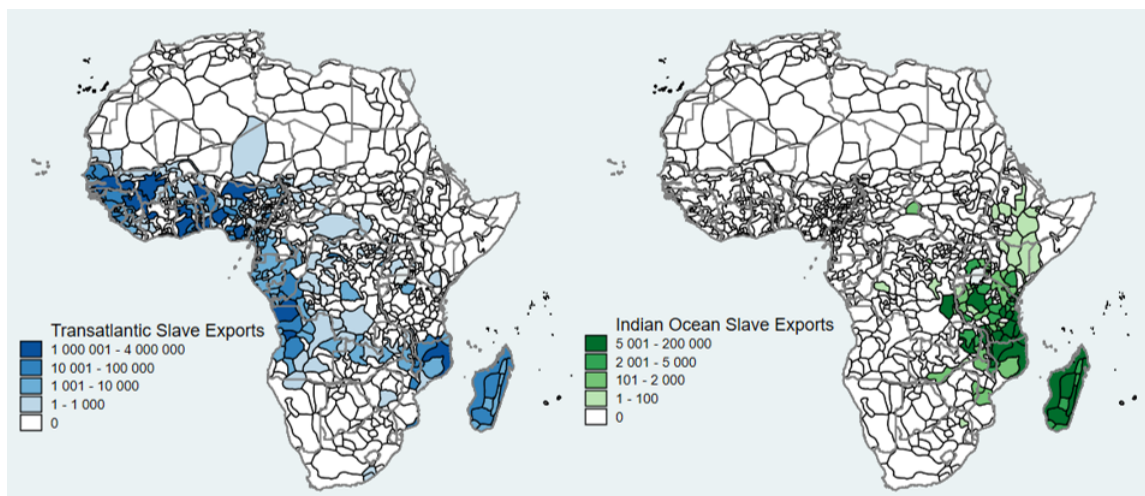
Slaves were captured by kidnapping people from neighbouring ethnic regions during raids, but also enslavement by family, friends and other people from the same ethnic group (Nunn, 2017). The slave trades did not only cause contemporary inter and intra- group mistrust, but also mistrust of political leaders as slave traders were often chiefs and leaders within communities (Nunn & Wantchekon, 2011). Collecting data on the manner of enslavement in Sierra Leone, Koelle (1854) finds that approximately 40 per cent of slaves were kidnapped, 25 per cent enslaved

²The Red Sea slave trade exported slaves to the Middle East and India from inland ethnic regions close to the Red Sea. The trans-Saharan slave trade exported slaves to North Africa from the Saharan desert (Nunn, 2008). Ethnic level data on the Red Sea and trans-Saharan slave trades is not available.

through warfare, 20 per cent enslaved by family and friends and 16 per cent as a result of judicial processes. Another form of slavery that took place during the Indian Ocean slave trade was enslavement as a result of debt. Men would be indebted and resolve to pay-off debt through enslavement of their wife or children (Campbell, 2003). Captured people were then sold to slave merchants in return for imported goods and also guns, which were used to capture more people as slaves to be sold, also known as the ‘gun-slave cycle’ (Lovejoy, 2011). The slave trades therefore diminished pre-existing institutions amongst and within ethnic regions, causing political instability and conflict (Besley & Reynal-Querol, 2014).

Additionally, the slave trades and associated deaths had a substantial effect on demography. Firstly, the population size. Figure 2 shows the spatial distribution of the number of slaves exported during the transatlantic and Indian Ocean slave trades. Approximately 12 million slaves were exported during the transatlantic slave trade and 6 million all together during the Indian Ocean, Red Sea and trans-Saharan slave trades (Nunn, 2008). Manning (1990) notes that by 1800, the population in Africa had declined by half, whilst Whatley and Gillezeau (2011) estimate a more conservative but still noteworthy decline of 10 per cent. As noted by Dalton and Leung (2014), the mere volume of slaves captured and exported, especially during the transatlantic slave trade, reduced labour and human capital within these affected regions.

Figure 2: Slave Exports



Source: Nunn and Wantchekon (2011)

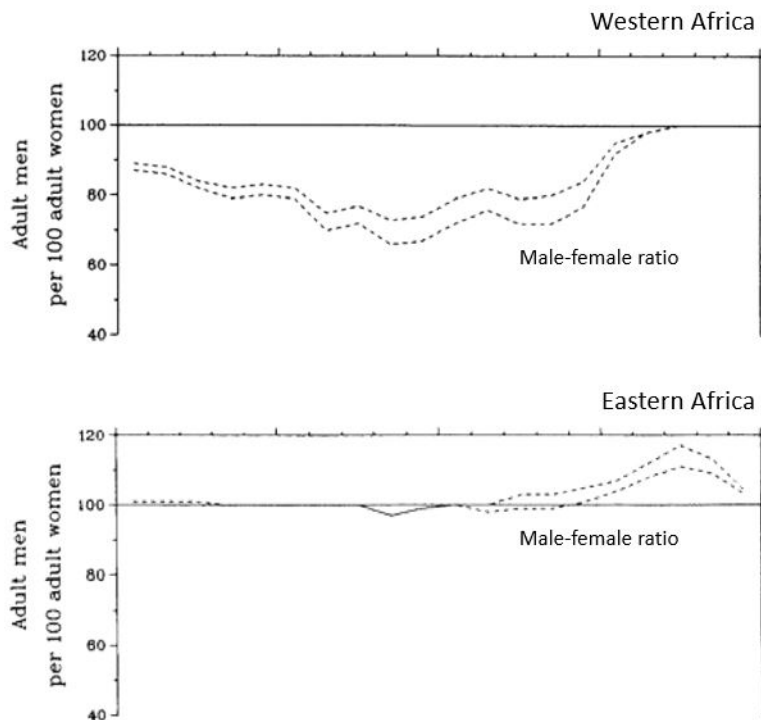
Note: This map illustrates the spatial distribution of the number of slaves exported from each ethnic region during the transatlantic slave trade (left) and Indian Ocean slave trade (right).

Secondly, the slave trades skewed the gender ratios in African countries. As mentioned, the transatlantic slave trade exported slaves to the Americas to work in plantations. As working in the plantations required strength there was a preference for men. This led to more men being exported, decreasing the male-to-female ratio in ethnic regions. Between the 17th and 19th century the ratio of men to women exported in the transatlantic trade was 181:100, essentially 2 men for every women (Lovejoy, 2011; Manning, 1990).

The opposite occurred during the Indian Ocean slave trade on the Eastern coast of Africa.

Women were mostly enslaved in this region as slaves were acquired to serve as domestic servants, entertainers and concubines. As more women were exported from Eastern Africa to the Middle East and India, the male-to-female ratio increased (Campbell, 2003; Manning, 1990). This slave trade and effect on the gender ratio was shorter in time and of a smaller scale relative to the transatlantic slave trade. Figure 3 illustrates the impact of slave exports on the male-to-female ratio in Western and Eastern Africa.

Figure 3: Impact of Slave Trades on Gender Ratio



Source: Manning (1990)

Note: This figure illustrates the impact of the transatlantic slave trade on gender ratio in Western Africa (top panel) and the Indian Ocean slave trade in Eastern Africa (bottom panel).

The Guttentag and Secord hypothesis is relevant for our study (Guttentag & Secord, 1983). The authors hypothesise that in societies where women are scarce, women are more valued. Due to the scarcity of women, men will treat these women with more ‘deference and respect’. The opposite is true in societies where men are relatively less than women.

Associated with the effect on demography and the change in gender ratio, Dalton and Leung (2014) find that ethnic regions subjected to the transatlantic slave trade and subsequent decreased male-to-female ratio tend to be more polygynous today. With more women than men, a woman would need to enter into a polygynous marriage to have a husband.

Teso (2019) argues that the altered gender ratio resulting from the transatlantic slave trade is associated with increased women labour force participation. In ethnic regions where the intensity of slave exports were higher, women had to substitute for men and provide for the household (Teso, 2019). Earlier work by Manning (1990) also notes that women were obliged to fulfil the man’s role and shifted to working in commerce.

Therefore the slave trades may be associated with women political participation as a result of the gender ratio change as well. Since the transatlantic slave trade contributed to increased women labour force participation, we can argue that women political participation may also increase as a result of an increase in power by women in these ethnic regions where men were exported relatively more. Alternatively, the consequent increase in employment due to the women-biased gender ratio as suggested by Teso (2019) and the increased access to resources that women enjoy may positively affect women political participation. (Isaksson, 2014), however, notes that although individual resources and wealth matter for political participation in developed regions, it is less important in developing regions such as Africa. We therefore need to distinguish between a woman’s role in the household and in society. Participating in the labour force does not necessarily entail increased standing or participation within society. Contributing to the household through income may not translate into control or decision-making within the society.

Furthermore, the decreased male-to-female ratio resulting from the transatlantic slave trade is associated with an increase in polygynous marriages. This institution in itself entails far reaching implications for gender norms within a society. Tertilt (2006) finds that polygynous countries suffer more from gender inequality and have less power in national politics. Polygyny is negatively associated to women empowerment and measures of women health such as fertility and HIV infections (Bertocchi & Dimico, 2019; Tertilt, 2005).

The Indian Ocean slave trade, on the other hand, had the opposite effect as this slave trade is negatively associated with polygyny due to the increase in the male-to-female ratio. Although Dalton and Leung (2014) do not find overwhelming causality between the Indian Ocean slave trade and polygyny on an ethnic region level, the negative relationship is statistical significant and robust to a selection of controls on a country level. Can we therefore expect the opposite to be true for the impact that a decrease in polygyny will have on gender norms and women political participation? Using a calibrated model, Tertilt (2005) finds that banning polygyny in countries will increase savings by approximately 70 per cent, GDP per capita by 170 per cent and decrease fertility by 40 per cent. The economic and socio-economic effects resulting from the skewed gender ratios should therefore not be underestimated.

3 Empirical Design

To study the effect of slave trade on political participation and specifically, women political participation and views on women as political leaders, we assign geolocated individual-level data to ethnic region level data on the number of slave exported during the transatlantic and Indian Ocean slave trade. We obtain data on voting and views on women as political leaders from the Afrobarometer Survey Round 5 (2011 to 2013) and Round 6 (2014 and 2015) (BenYishay et al., 2017).³ The variable $vote_{iec}$ is a binary variable equal to 1 if individual (i), residing in ethnic region (e) and country (c), voted in the most recent election, 0 if not. We additionally

³We use two rounds of geocoded surveys to mitigate the potential effect of a single election on outcomes.

consider the view regarding women in political office. The variable $womenleaders_{iec}$ is a binary variable equal to 1 if an individual is of the view that women should have equal opportunity to be elected into political office as men, 0 otherwise.⁴

Estimates on the number of slaves exported from ethnic regions during the transatlantic and Indian Ocean slave trades are obtained from Nunn and Wantchekon (2011). The authors constructed the data set using data on the number of slaves exported from ports together with information on slaves' ethnic identity. Data on slave exports are then georeferenced to Murdock's Ethnographic Atlas (Murdock, 1969). In line with Nunn and Wantchekon (2011) and Teso (2019), we measure the intensity of slave exports during the transatlantic trade, $atlantictrade_e$, and the Indian Ocean trade, $indianoceantrade_e$, by dividing the number of slaves from each ethnic region (e) with the historic land area of that ethnic region. To account for ethnic regions that did not experience slave trade and potential outliers, we use the natural log of the normalised slave trade measure plus 1.

The main empirical specification is therefore

$$politicaloutcome_{iec} = \beta_1 atlantictrade_e + \beta_2 indianoceantrade_e + \beta_3 X_{iec} + \beta_4 X_e + u_{iec} \quad (1)$$

where the outcome variable, $politicaloutcome_{iec}$, is a place holder for voting, $vote_{iec}$, and the view on women as political leaders, $womenleaders_{iec}$. To consider the effect of the slave trades on women political participation specifically, we follow Teso (2019) and Bertocchi and Dimico (2019) and estimate the empirical specification on a split sample for women, men and the full sample.

The variables X_{iec} and X_e represents individual and ethnic region level controls that may influence political participation and views on women as political leaders.

Individual-level controls include age, age-squared, whether an individual is employed, resides in an urban area and is part of the Muslim religion. These control variables are also obtained from the Afrobarometer survey (BenYishay et al., 2017). The variable, age_{iec} and age_{iec}^2 , measures the age of an individual. To measure employment we create a binary variable, $employed_{iec}$, that is equal to 1 if an individual has a job and 0 if otherwise.⁵ The binary variable $urban_{iec}$ is equal to 1 if an individual resides in an urban area, 0 if rural. We measure whether an individual is part of the Muslim religion by creating a binary variable, $muslim_{iec}$, that is equal to 1 if an individual identifies a Muslim religion, 0 otherwise.

These individual-level controls are important determinants of political participation. Kuenzi and Lambright (2011) find increased voter turnout amongst individuals who are older. Their findings show that a 50-year old is approximately 15 per cent more likely to vote than an 18-year old in Africa. Individuals from rural areas are also more likely to vote than those from

⁴The variable is equal to 0 if individuals agree with or strongly with Statement 1: "Men make better political leaders than women, and should be elected rather than women." The variable is equal to 1 if individuals agree with or strongly agree with Statement 2: Women should have the same chance of being elected to political office as men."

⁵The question asks whether an individual has a job that pays a cash income and whether this job is full time or part time. We do not distinguish between full time or part time employment.

urban regions as political parties often focus their political campaigns in these regions (Bratton, Mattes, & Gyimah-Boadi, 2005). Literature also finds a positive relationship between being employed and the likelihood to participate in political activities (Isaksson, 2014). Similarly, religion is also a determinant of attitudes regarding political participation. Although individuals from the Muslim religion are also supportive of democracy as highlighted by Bratton et al. (2005), they tend to be less likely to vote.

Borrowing from Teso (2019) and Bertocchi and Dimico (2019), we account for ethnic region demographic, geographic and location characteristics by considering the size of the population of ethnic regions in 1960, political centralisation, soil suitability for agriculture, distance to pre-colonial conflict, terrain ruggedness, missionary stations and ethnic regions being hunter-gatherer societies. The log of population by ethnic regions in 1960, *population_e*, has been used in various studies to measure development (Acemoglu, Johnson, & Robinson, 2002). Ethnic regions and countries with higher populations in 1960 are likely more developed today, with higher levels of political participation. The suitability of soil for agriculture, *soilquality_e* is also associated with economic development outcomes through the effect on technological diffusion, colonial reach and public infrastructure provision (Nunn & Puga, 2012).

Ethnic centralisation also captures the historical wealth of an ethnic region that can be correlated with gender norms (Nunn & Wantchekon, 2011; Teso, 2019). Ethnic region centralisation, *central_e* is a binary variable equal to 1 if the pre-colonial ethnic region was centralised, 0 if fragmented. Borrowing from Gennaioli and Rainer (2007), groups that do not have political authority beyond the local community or only a single level of jurisdictional hierarchy, such as petty chiefdoms, are classified as *fragmented*. These groups are smaller political entities that lack political integration above local community level. Groups that have more than two levels of jurisdictional hierarchy, such as larger chiefdoms (two) and states (three) are classified as *centralised*.

We additionally control for the ethnic region’s distance to conflict in the pre-colonial period, *conflictdistance_e*, with data from Besley and Reynal-Querol (2014). Regions that are located closer to pre-colonial conflict areas are associated with lower levels of trust and development. This may influence political participation and also views on women in the political arena (Teso, 2019).

Finally, increased terrain ruggedness, *ruggedness_e*, has been associated with economic and socio-economic outcomes in various studies (Michalopoulos & Papaioannou, 2014). Importantly, Nunn and Puga (2012) find that terrain ruggedness was detrimental to the slave trade and therefore positively associated to economic outcomes in Africa as people in mountainous regions were less likely to be enslaved and exported. Contemporary terrain ruggedness may also hamper individuals’ political participation through the logistical difficulties associated with rugged terrain.

Ethnic regions and gender norms were also subject to other European influences such as missionary activities. We therefore control for the number of missionary stations per square kilometre of an ethnic region’s land area, *missions_e*.

We furthermore control for ethnic regions’ pre-colonial reliance on hunting and gathering

and form of kinship. Increased reliance on hunting and gathering, $huntgather_e$, have been associated with more equal gender norms today (Hansen & Jensen, Peter S Skovsgaard, 2015). Finally, matrilineality, $matrilineal_e$, promotes more equal gender norms within ethnic regions leading to increased women political participation (Robinson & Gottlieb, 2019).

Summary statistics are provided in Table 1.

Table 1: Summary statistics

Variable	N	Mean	Std. Dev.	Min.	Max.
$vote_{iec}$	90,440	0.751	0.432	0	1
$womenleaders_{iec}$	96,104	0.685	0.464	0	1
$atlantictrade_e$	98,584	0.342	0.789	0	3.774
$indianoceantrade_e$	98,584	0.041	0.208	0	3.330
Individual controls					
age_{iec}	97,877	37.006	14.437	18.000	105.000
age^2_{iec}	97,877	1577.908	1286.224	324.000	11025.000
$employed_{iec}$	98,142	0.352	0.478	0	1
$urban_{iec}$	98,584	0.394	0.489	0	1
$muslim_{iec}$	98,584	0.320	0.466	0	1
Ethnic region controls					
$population_e$	98,584	13.363	1.331	4.053	17.067
$soilquality_e$	98,584	0.448	0.213	0.002	0.940
$central_e$	71,270	0.622	0.485	0	1
$conflictdistance_e$	98,584	4.814	2.295	0	7.571
$ruggedness_e$	98,584	0.881	0.881	0.016	5.750
$missions_e$	98,584	0.0002	0.0004	0	.0043
$huntgather_e$	75,919	6.836	4.640	2.500	50.500
$matrilineal_e$	75,807	0.136	0.342	0	1

The variable u_{iec} is an error term. Standard errors are clustered at ethnic region level. Furthermore, to account for country-level institutional and economic factors that may influence political outcomes, we include country fixed effects.

4 Preliminary Estimation Results

Table 2 reports results from estimating equation 1 for voting (columns 1 to 3) and views on women as political leaders (columns 4 to 6). Splitting the sample by gender allows us to show the effect of the slave trades on women (columns 1 and 4), men (columns 2 and 5) and society in general (columns 3 and 6). The Indian Ocean slave trade variable is positive and statistically significant and remain robust to the inclusion ethnic region controls. Considering the specification in column 1, the legacy of the Indian Ocean slave trade is substantial. A one standard deviation increase in a woman's ethnic region exposure to the Indian Ocean slave trade (0.256 in the estimated sample) is associated with an increase in her likelihood to vote by approximately 1.3 percentage points. Although the Indian Ocean slave trade is also positively associated to men voting, the magnitude is smaller. A one standard deviation increase in a man's ethnic region exposure to the Indian Ocean slave trade (0.256 in the estimated sample)

is associated with an increase in his likelihood to vote by approximately 0.6 percentage points.

Table 2: OLS Estimation Regression Results

Sample	Dependent Variable:					
	<i>vote_{iec}</i>			<i>womenleaders_{iec}</i>		
	Women (1)	Men (2)	Full (3)	Women (4)	Men (5)	Full (6)
<i>atlantictrade_e</i>	0.012 (0.008)	0.007 (0.008)	0.009 (0.007)	0.008 (0.009)	0.007 (0.010)	0.007 (0.009)
<i>indianoceantrade_e</i>	0.050*** (0.019)	0.025* (0.014)	0.037** (0.016)	0.040*** (0.011)	0.047*** (0.013)	0.044*** (0.010)
Individual controls	Yes	Yes	Yes	Yes	Yes	
Ethnic region controls	Yes	Yes	Yes	Yes	Yes	
Observations	32,055	32,342	64,397	34,423	34,549	68,972
R-squared	0.081	0.081	0.080	0.041	0.045	0.039
Country FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: *vote_{iec}* is a binary variable equal to 1 if individual (*i*), residing in ethnic region (*e*) and country (*c*), voted in the most recent election, 0 if not. *womenleaders_{iec}* is a binary variable equal to 1 if an individual is of the view that women should have equal opportunity to be elected into political office as men, 0 otherwise. *atlantictrade_e* is the number of slaves exported from ethnic region *e* during the transatlantic slave trade normalised by the historic land area of that ethnic region. *indianoceantrade_e* is the number of slaves exported from ethnic region *e* during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.

Robust standard errors in parentheses clustered by ethnic region level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

To further investigate gender norms in the slave trade context, we consider the effect of the respective slave trades on how society views women as political leaders. In this instance, the coefficient for Indian Ocean slave trade is positive and statistically significant for men and women. Interpreting column 6 coefficient estimations for the full sample, a one standard deviation increase in an individual's ethnic region exposure to the Indian Ocean slave trade (0.256 in the estimated sample) is associated with an increase in the likelihood to view women as equal political leaders by approximately 1.1 percentage points.

Results from Table 2 are in contrast to findings by Teso (2019). In this instance, the Indian Ocean slave trade is statistically significant and positively associated to women voting and views regarding women as political leaders. We suspect that our results are also driven by the gender ratio demographic shock and the subsequent long lasting effects on gender norms, as we observe differential effects between the transatlantic and Indian Ocean slave trades.

5 Robustness Checks

5.1 Alternative Model Specification

In Table 3 we report an alternative specification. Instead of estimating equation 1 on women and men by splitting the sample, we estimate a difference-in-difference model to capture the

differential effect of the slave trades on women relative to men within the full sample. The empirical specification is therefore

$$\begin{aligned} \text{politicaloutcome}_{iec} = & \beta_1 \text{atlantictrade}_e + \beta_2 \text{woman}_{iec} + \beta_3 \text{atlantictrade}_e * \text{woman}_{iec} \\ & + \beta_4 \text{indianoceantrade}_e + \beta_5 \text{indianoceantrade}_e * \text{woman}_{iec} + \beta_6 X_{iec} + \beta_7 X_e + u_{iec} \end{aligned} \quad (2)$$

where the outcome variable, $\text{politicaloutcome}_{iec}$, is a place holder for voting, vote_{iec} , and the view on women as political leaders, $\text{womenleaders}_{iec}$. To consider the effect on female political participation and views specifically in the full sample, we interact the respective slave trades (atlantictrade_e and $\text{indianoceantrade}_e$) with a binary variable, woman_{iec} that is equal to 1 if the individual respondent is a woman, 0 if the respondent is a man. The variables X_{iec} and X_e represents individual and ethnic region level controls as discussed in Section 3. The full model specification results with all controls are reported in columns 3 and 6.

Table 3: Interaction Regression Results

	Dependent Variable:					
	vote_{iec}			$\text{womenleaders}_{iec}$		
	(1)	(2)	(3)	(4)	(5)	(6)
atlantictrade_e	0.026*** (0.010)	0.026*** (0.009)	0.008 (0.008)	0.022* (0.013)	0.018 (0.011)	0.009 (0.010)
woman_{iec}	-0.042*** (0.004)	-0.025*** (0.004)	-0.024*** (0.005)	0.122*** (0.007)	0.123*** (0.007)	0.123*** (0.008)
$\text{woman}_{iec} * \text{atlantictrade}_e$	0.004 (0.004)	0.004 (0.004)	0.003 (0.004)	-0.002 (0.008)	-0.002 (0.008)	-0.002 (0.009)
$\text{indianoceantrade}_e$	0.028** (0.014)	0.032** (0.013)	0.021 (0.013)	0.049*** (0.019)	0.072*** (0.019)	0.046* (0.024)
$\text{woman}_{iec} * \text{indianoceantrade}_e$	0.020* (0.011)	0.022** (0.011)	0.028** (0.013)	-0.010 (0.023)	-0.009 (0.023)	-0.010 (0.031)
Individual controls	No	Yes	Yes	No	Yes	Yes
Ethnic region controls	No	No	Yes	No	No	Yes
Observations	90,441	89,400	64,397	96,104	95,074	68,972
R-squared	0.037	0.083	0.081	0.048	0.058	0.055
Country FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: vote_{iec} is a binary variable equal to 1 if individual (i), residing in ethnic region (e) and country (c), voted in the most recent election, 0 if not. $\text{womenleaders}_{iec}$ is a binary variable equal to 1 if an individual is of the view that women should have equal opportunity to be elected into political office as men, 0 otherwise. atlantictrade_e is the number of slaves exported from ethnic region e during the transatlantic slave trade normalised by the historic land area of that ethnic region. $\text{indianoceantrade}_e$ is the number of slaves exported from ethnic region e during the Indian Ocean slave trade normalised by the historic land area of that ethnic region. woman_{iec} is a binary variable equal to 1 if the individual is a woman, 0 if the respondent is a man.

Robust standard errors in parentheses clustered by ethnic region level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Findings support results reported in Table 2. Considering column 3 results, we see that firstly, women are less likely to vote than men and secondly, the Indian Ocean slave coefficient is statistically significant when interaction with woman, indicating that this slave trade is associated to an increased likelihood of women voting. Considering views on women as political

leaders in column 6, it is to be expected that women have more positive views relative to men as the $woman_{iec}$ coefficient indicates. In this case, the Indian Ocean slave trade is positively associated to views of women as political leaders by men.⁶

We conduct further robustness checks in Appendix A.1 that support our findings. Firstly, we estimate whether the effect of slave trade is persistent or heterogeneous across different birth cohorts. Our results from Table A.1 show that the association between the Indian Ocean slave trade and women political participation persists over time. Although the skewed male-to-female ratio is not persistent, the effect on slow changing gender norms persist (Teso, 2019).

Secondly, to account for spatial autocorrelation on ethnic and country level, we estimate a linear regression with multi-way clustered standard errors using methodology developed by Cameron, Gelbach, and Miller (2011). Results confirm findings reported in Table 2 and in this instance, the association between the Indian Ocean slave trade and men political participation is not statistically significant.

5.2 Instrumental Variable Estimation Results

Although the results presented in Table 2 are robust to a number of individual and ethnic region observable controls, we have to consider that omitted and unobservable variables may

Table 4: Lewbel’s IV Estimation Regression Results

Sample	Dependent Variable:					
	$vote_{iec}$			$womenleaders_{iec}$		
	Women (1)	Men (2)	Full (3)	Women (4)	Men (5)	Full (6)
$atlantictrade_e$	0.010 (0.007)	0.006 (0.008)	0.008 (0.007)	0.008 (0.009)	0.008 (0.010)	0.008 (0.009)
$indianoceantrade_e$	0.055*** (0.020)	0.028* (0.014)	0.041** (0.017)	0.039*** (0.011)	0.044*** (0.012)	0.043*** (0.009)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
Ethnic region controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32,055	32,342	64,397	34,423	34,549	68,972
R-squared	0.081	0.081	0.080	0.041	0.045	0.039
Country FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: $vote_{iec}$ is a binary variable equal to 1 if individual (i), residing in ethnic region (e) and country (c), voted in the most recent election, 0 if not. $womenleaders_{iec}$ is a binary variable equal to 1 if an individual is of the view that women should have equal opportunity to be elected into political office as men, 0 otherwise. $atlantictrade_e$ is the number of slaves exported from ethnic region e during the transatlantic slave trade normalised by the historic land area of that ethnic region. $indianoceantrade_e$ is the number of slaves exported from ethnic region e during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.

Robust standard errors in parentheses clustered by ethnic region level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

⁶Due to missing values for a small number of ethnic regions, the number of observations decreases as ethnic region controls are included.

be associated with the intensity of the transatlantic and Indian Ocean slave trade and the effect on contemporary women political participation. We estimate an instrumental variable regression using heteroskedasticity-based instruments as suggested by Lewbel (2012). The model constructs instruments as a function of the data without the need for an external instrument (Baum & Schaffer, 2012). This model yields similar results in that the slave trade and specifically the Indian Ocean slave trade is positively associated with the likelihood of a women voting today and being viewed equally as a man with respect to political leadership.

6 Gender Norms Mechanism

In Table 5 we attempt to determine the effect of the transatlantic and Indian Ocean slave trade on gender norms as the potential mechanism through which the slave trades affect women political participation. We construct a measurement of gender norms using individual preferences regarding boy or girl school attendance. The variable *schoolingpreference_{iec}* is a binary variable equal to 1 if an individual prefers boys be educated rather than girls when funding is limited, 0 if the individual prefers the child with the greater ability be educated.⁷ Should an individual prefer the child with the greatest ability be educated, we can assume that these individuals have more progressive gender norms relative to individuals that always prefer a boy be educated rather than a girl. We re-estimate our main model specification from equation 1 with this measurement of gender norms as the dependent variable.⁸

Interpreting results from the full sample in column 3, we see that a one standard deviation increase in an individual’s ethnic region exposure to the Indian Ocean slave trade (0.253 in the estimated sample) is associated with a decrease in the likelihood to prefer boys be educated rather than girls by approximately 1.1 percentage points, indicating a positive association to more equal gender norms. Contrary, the transatlantic slave trade is positively associated to traditional gender norms that boys should have the first option to attend school. A one standard deviation increase in an individual’s ethnic region exposure to the transatlantic slave trade (0.787 in the estimated sample) is associated with an increase in the likelihood to prefer boys be educated rather than girls by approximately 1.4 percentage points.

The results are supportive of our main findings and hypothesis that the slave trades affect gender norms and society views on women. As the effect differs between the transatlantic and Indian Ocean slave trade, we agree with the literature that it is due to the resulting temporary changes in gender ratios within regions.

⁷The variable is equal to 1 if individuals agree with or strongly with Statement 1: “If funds for schooling are limited, a boy should always receive an education in school before a girl.” The variable is equal to 0 if individuals agree with or strongly agree with Statement 2: “If funds for schooling are limited, a family should send the child with the greatest ability to learn.”

⁸Unfortunately this question was only asked during the Afrobarometer Round 5 and we therefore have less observations in our analysis.

Table 5: Schooling Preference Regression Results

Sample	Dependent Variable: <i>schooling preference_{iec}</i>		
	Women (1)	Men (2)	Full (3)
<i>atlantictrade_e</i>	0.012 (0.010)	0.024** (0.009)	0.018** (0.009)
<i>indianoceantrade_e</i>	-0.042** (0.017)	-0.047*** (0.013)	-0.045*** (0.013)
Individual controls	Yes	Yes	Yes
Ethnic region controls	Yes	Yes	Yes
Observations	15,024	15,276	30,300
R-squared	0.049	0.045	0.044
Country FE	Yes	Yes	Yes

Notes: *schooling preference_{iec}* is a binary variable equal to 1 if individual (*i*), residing in ethnic region (*e*) and country (*c*), agrees that a boy should have preference to attend schooling, 0 if the individual agrees that the child with the greatest ability to learn should attend. *atlantictrade_e* is the number of slaves exported from ethnic region *e* during the transatlantic slave trade normalised by the historic land area of that ethnic region. *indianoceantrade_e* is the number of slaves exported from ethnic region *e* during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.

Robust standard errors in parentheses clustered by ethnic region level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

7 Conclusion

Whilst the transatlantic slave trade exported more men leading to female-biased ratios, the Indian Ocean slave trade exported more women increasing the male-to-female ratio within these affected ethnic regions. These changes in the gender ratios are related to contemporary socio-economic outcomes such as HIV, fertility, women labour force participation and institutions such as polygyny. The slave trades and subsequent demographic shocks can therefore be related to changes in gender norms within societies.

To study the potential effect of the slave trades on women voting and views on women as political leaders, we use Afrobarometer survey data from 36 countries and ethnic region level data on the transatlantic and Indian Ocean slave trades. Our results suggest that ethnic region exposure to the Indian Ocean slave trade is associated with an increased likelihood for women to vote. These ethnic regions are also associated with more progressive views regarding women as political leaders.

This study substantiates literature on the persistent effect of slave trade on contemporary outcomes. It furthermore sheds light on the historical causes and considerations with respect to women political participation. Our study and findings speak to Targets 5.1 and 5.5 of the Sustainable Development Goals that set out to end discrimination and improve opportunities for and participation of women in the political arena (United Nations, 2020). Policies implemented on a national and sub-national level need to consider the deep rooted causes of

gender norms within societies to be able to address inequalities that persist.

We aim to improve subsequent versions of this paper by firstly, concretely determining the channel through which the Indian Ocean slave trade affect contemporary women political participation. Secondly, we would like to provide additional cross-country evidence and specifically evaluate whether the slave trades are associated to gender quotas and the share of women in parliament.

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A Appendix

A.1 Robustness Checks

A.1.1 Birth Cohort Analysis

Table A.1 reports birth cohort results for women voting in Panel A and views on women as political leaders in Panel B. Columns 1 and 5 report results for individuals born between 1920

Table A.1: Birth Cohort Regression Results

<i>Panel A</i>				
	Dependent Variable: $vote_{iec}$			
	1920-1940 (1)	1940-1960 (2)	1960-1980 (3)	1980- (4)
$atlantictrade_e$	-0.029 (0.032)	-0.009 (0.012)	0.013 (0.009)	0.015 (0.010)
$indianoceantrade_e$	0.030 (0.117)	0.073*** (0.023)	0.052*** (0.017)	0.044* (0.024)
Sample	Women	Women	Women	Women
Individual controls	Yes	Yes	Yes	Yes
Ethnic region controls	Yes	Yes	Yes	Yes
Observations	365	3,171	10,864	17,645
R-squared	0.247	0.046	0.051	0.084
Country FE	Yes	Yes	Yes	Yes
<i>Panel B</i>				
	Dependent Variable: $womenleaders_{iec}$			
	1920-1940 (5)	1940-1960 (6)	1960-1980 (7)	1980- (8)
$atlantictrade_e$	-0.027 (0.028)	0.005 (0.011)	0.001 (0.011)	0.011 (0.009)
$indianoceantrade_e$	0.022 (0.068)	0.066** (0.026)	0.050*** (0.011)	0.035*** (0.009)
Sample	Full	Full	Full	Full
Individual controls	Yes	Yes	Yes	Yes
Ethnic region controls	Yes	Yes	Yes	Yes
Observations	991	7,944	22,452	37,564
R-squared	0.091	0.054	0.042	0.037
Country FE	Yes	Yes	Yes	Yes

Notes: $vote_{iec}$ is a binary variable equal to 1 if individual (i), residing in ethnic region (e) and country (c), voted in the most recent election, 0 if not. $womenleaders_{iec}$ is a binary variable equal to 1 if an individual is of the view that women should have equal opportunity to be elected into political office as men, 0 otherwise. $atlantictrade_e$ is the number of slaves exported from ethnic region e during the transatlantic slave trade normalised by the historic land area of that ethnic region. $indianoceantrade_e$ is the number of slaves exported from ethnic region e during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.

Robust standard errors in parentheses clustered by ethnic region level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

and 1940, columns 2 and 6 for individuals born between 1940 and 1960, columns 3 and 7 for individuals born between 1960 and 1980 and columns 4 and 8 for individuals born after 1980. Results from columns 4 and 8 show that our results are persistent over time. As discussed by Teso (2019) although the skewed gender ratio is not necessarily persistent and still present, the change in society and gender norms that such a demographic environment created are persistent. The effect, however, decreases over time as the Indian Ocean slave trade coefficient is largest for our sample of individuals born between 1940 and 1960. The decrease is marginal.⁹

A.1.2 Alternative Standard Errors Specification

In Table A.2 we report results where robust standard errors are clustered by ethnic as well as country level as suggested by Cameron et al. (2011). Results support findings discussed in Section 4. In this specification, however, the association between the Indian Ocean slave trade and men political participation is not statistically significant. This finding supports our hypothesis that the change in the gender ratio is a potential mechanism for increased participation by women in society.

Table A.2: Standard Error Robustness Regression Results

Sample	Dependent Variable:					
	<i>vote_{iec}</i>			<i>womenleaders_{iec}</i>		
	Women (1)	Men (2)	Full (3)	Women (4)	Men (5)	Full (6)
<i>atlantictrade_e</i>	0.012 (0.010)	0.007 (0.013)	0.009 (0.011)	0.008 (0.013)	0.007 (0.017)	0.007 (0.015)
<i>indianoceantrade_e</i>	0.050* (0.026)	0.025 (0.019)	0.037* (0.022)	0.040*** (0.009)	0.047*** (0.011)	0.044*** (0.008)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
Ethnic region controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32,055	32,342	64,397	34,423	34,549	68,972
R-squared	0.081	0.081	0.080	0.041	0.045	0.039
Country FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: *vote_{iec}* is a binary variable equal to 1 if individual (*i*), residing in ethnic region (*e*) and country (*c*), voted in the most recent election, 0 if not. *womenleaders_{iec}* is a binary variable equal to 1 if an individual is of the view that women should have equal opportunity to be elected into political office as men, 0 otherwise. *atlantictrade_e* is the number of slaves exported from ethnic region *e* during the transatlantic slave trade normalised by the historic land area of that ethnic region. *indianoceantrade_e* is the number of slaves exported from ethnic region *e* during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.

Robust standard errors in parentheses clustered by ethnic region and country level (Cameron et al., 2011). *** p<0.01, ** p<0.05, * p<0.1

⁹The Indian Ocean coefficient estimate is small and not statistically significant for women and individuals born between 1920 and 1940. We believe this is due to the small sample we are able to account for in our data.