



# Slave Trades, Kinship Structures and Women Political Participation in Africa

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# Slave Trades, Kinship Structures and Women Political Participation in Africa\*

Leoné Walters,<sup>†</sup> Carolyn Chisadza<sup>‡</sup> and Matthew Clance<sup>§</sup>

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## Abstract

We study whether present-day women political participation in sub-Saharan Africa can be linked to the temporary gender ratio imbalances caused by the transatlantic and Indian Ocean slave trades, taking into account pre-existing gender norms influenced by kinship structures. Using individual-level data for 29 sub-Saharan African countries from the latest Afrobarometer surveys, ethnic region kinship and slave trade data, we find that a woman's ethnic region exposure to the transatlantic slave trade is associated with an increase in her likelihood to vote, however, only in non-patrilineal ethnic regions. This effect is mitigated in patrilineal ethnic regions, where women have less decision-making power. This paper contributes to the literature on the contemporary sub-national effects of the slave trades and 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 trades 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 in regions. The transatlantic slave trade decreased the gender ratio as more men were exported, whilst the Indian Ocean slave trade increased the gender 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 temporary gender ratio imbalance resulting from the transatlantic slave trade is for example associated with increased prevalence of present-day polygyny in Africa (Bertocchi, 2016; Dalton & Leung, 2014; Fenske, 2015). Such changes in marital composition and institutions entail further socio-economic consequences such as higher HIV infection rates amongst women, infidelity and child mortality (Bertocchi & Dimico, 2019).

Recent literature also links the temporary women-biased gender ratio from the transatlantic slave trade to contemporary women labour force participation. Using Demographic and Health Surveys (DHS) data, Teso (2019) shows that the likelihood of a woman being employed is higher in ethnic regions exposed 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 decrease in the gender ratio and subsequent change in gender roles that are responsible for the increase in women employment. Due to 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.

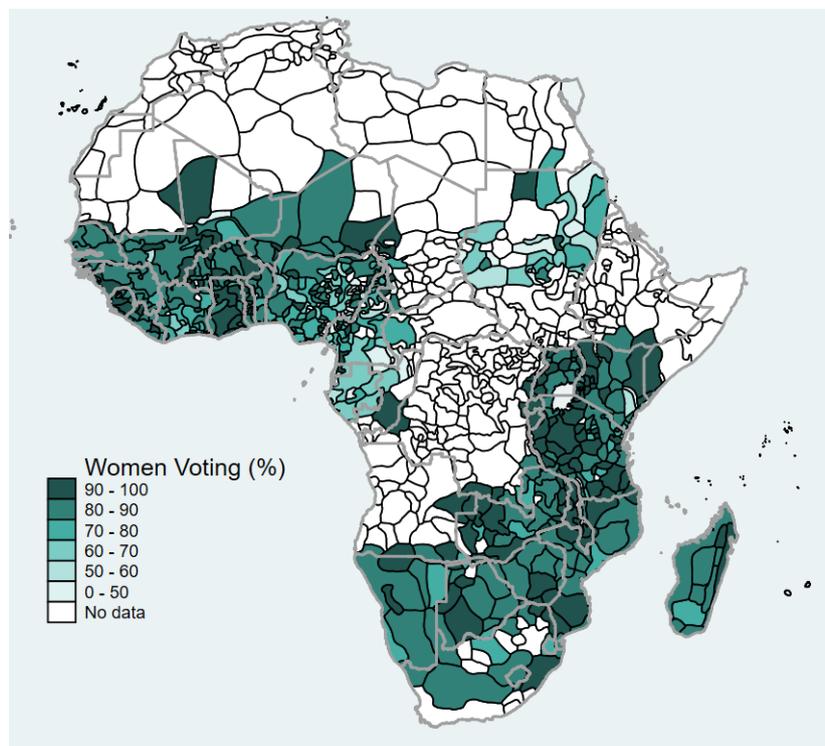
We contribute to this literature by studying whether the transatlantic and Indian Ocean slave trades and the consequent temporary gender imbalances can explain contemporary women political participation. We further contribute by examining this association in the context of kinship structures. Ethnic region kinship structures determine how inheritance and lineage are traced. Patrilineal, matrilineal and other structures ultimately influence gender norms that entail varying cultural, social, economic and political implications for women in sub-Saharan Africa (Lowe, 2020a, 2020b; Robinson & Gottlieb, 2019; Tène, 2021). We can therefore not study the impact of the slave trades on gender outcomes, such as political participation, without taking pre-existing gender dynamics and culturally defined roles into account.

Gender gaps persist in social and economic outcomes, especially in developing countries (Lowe, 2020a). In sub-Saharan Africa, women representation in parliament remains relatively low and society still views women as inferior political leaders. Countries in the Pacific have 44 per cent women representation in the upper chamber of national parliament, the Americas and 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 with decreased corruption, and improved education and health policy

(Hessami & da Fonseca, 2020). Determining historical effects on contemporary inequality in political participation is thus essential in addressing socio-economic challenges faced by women in Africa.

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. From the figure, it is clear that there is still substantial variation in voting by women across sub-Saharan Africa, not only between countries but also within. In Table 1 we present the average percentage of women voting by ethnic region exposure to the slave trades and kinship structures. As expected, average voting by women is higher in non-patrilineal relative to patrilineal ethnic regions. This is also true in ethnic regions that were exposed to the transatlantic and both the transatlantic and Indian Ocean slave trades. However, when we consider ethnic regions exposed to only the Indian Ocean slave trade, we see that the percentage of women voting in patrilineal ethnic regions is higher relative to non-patrilineal ethnic regions.

Figure 1: Women Political Participation



*Note:* Map illustrates the percentage of surveyed women that voted by ethnic region. Source: Based on BenYishay et al. (2017) and Murdock (1959).

To evaluate the impact of historical events such as the slave trades, we use Afrobarometer survey data for 29 sub-Saharan African countries georeferenced to Murdock's Ethnographic Atlas (Murdock, 1959) and ethnic region level kinship structure and slave trade data (Murdock, 1967; Nunn & Wantchekon, 2011). We use the number of slaves exported during the respective slave trades as a measure of the intensity or level of exposure that an individual's ethnic re-

Table 1: Women Voting (%) by Ethnic Region Slave Trade Exposure and Kinship Structure

	Slave Trade				
	<i>Average</i>	<i>No Trade</i>	<i>Transatlantic</i>	<i>Indian Ocean</i>	<i>Both</i>
	80.31	77.32	79.86	84.41	85.87
<i>Non-patrilineal</i>	81.80	77.24	80.46	82.01	88.31
<i>Patrilineal</i>	79.63	77.34	79.57	84.91	81.14

*Note:* Table reports the percentage of surveyed women voting in ethnic regions, according to slave trade exposure (columns) and kinship structures (rows). Source: Based on BenYishay et al. (2017), Murdock (1967) and Nunn and Wantchekon (2011).

gion experienced. Our results suggest that a woman’s historical ethnic region exposure to the transatlantic slave trade is associated with an increase in her likelihood to vote in non-patrilineal societies, where women have more decision-making power based on lineage and inheritance. The opposite is observed in patrilineal ethnic regions, as men would use their decision-making power to limit women’s economic and political participation. Yet, although men constrain women’s participation in patrilineal ethnic regions, exposure to the Indian Ocean slave trade in these ethnic regions is positively associated with gender norms such as views on women as political leaders and views regarding employment opportunity. Altered gender norms may therefore be a mechanism through which the slave trades and consequent temporary imbalanced gender ratios affect women political participation in patrilineal and non-patrilineal ethnic regions.

The paper contributes to a growing literature on the long-run impact of historical events such as the slave trades on development in Africa. Noteworthy, seminal work by Nunn (2008) find that African countries exposed to higher intensity of slave trades have lower GDP per capita today.<sup>1</sup> Studies have also associated the 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, Dalton, & Leung, 2019; Fenske & Zurimendi, 2017; Green, 2013; Nunn & Wantchekon, 2011; Whatley & Gillezeau, 2011). Additionally, the transatlantic slave trade affected political institutions within ethnic regions. Obikili (2016b) finds that ethnic regions subject to higher 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 transatlantic 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 positive relationship between the transatlantic slave trade and schooling, resulting from the missionaries that set up in regions more hindered by the slave trade.

Our paper furthermore 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 related historical

<sup>1</sup>He also shows that it was not necessarily poorer societies that were subjected to the slave trades, societies such as the Kongo Kingdom with high population density were even more affected.

aspects such as matrilineality and historical plough use to women political participation, we believe this is the first paper to study the interrelated effect of slave trades and kinship structures in this regard. Importantly, by distinguishing between the different slave trades, we are able to associate the consequent temporary gender ratio imbalances to gender outcomes.

## 2 Background

### 2.1 Slave Trade in Africa

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 two smaller slave trades were the Red Sea and trans-Saharan slave trades.<sup>2</sup>

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). This 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 through warfare, 20 per cent enslaved by family and friends and 16 per cent as a result of judicial processes. Enslaved people were sold to slave merchants in return for imported goods and guns, which were used to capture more people to be sold, also known as the ‘gun-slave cycle’ (Lovejoy, 2011). 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 wives and/or children (Campbell, 2003). The slave trades diminished social conduct amongst and within ethnic regions, causing political instability and conflict (Besley & Reynal-Querol, 2014).

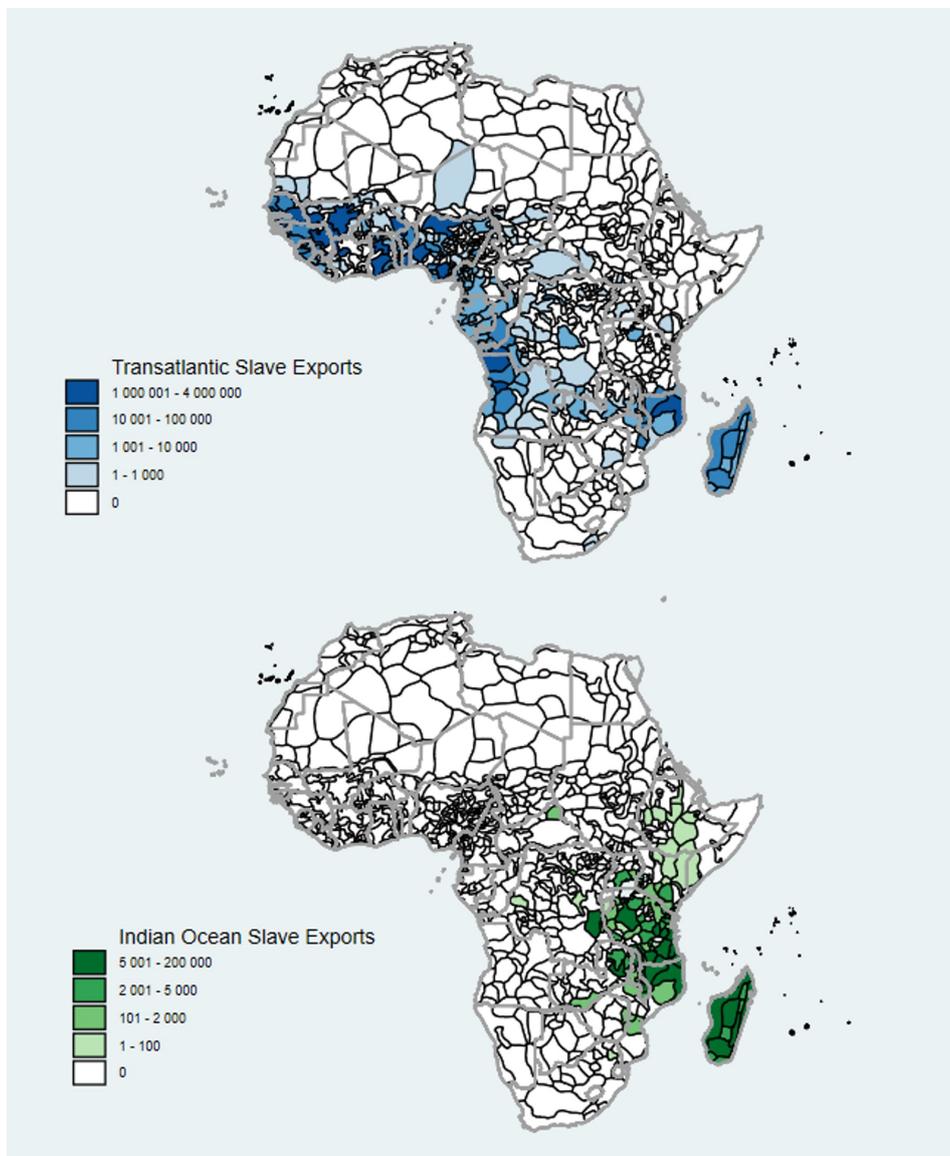
Additionally, the slave trades and associated deaths had a substantial effect on demography. Firstly, the slave trades affected the population size. Figure 2 shows the spatial distribution of the number of slaves exported during the transatlantic and Indian Ocean slave trades. Approximately 12 million 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.

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<sup>2</sup>The 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).

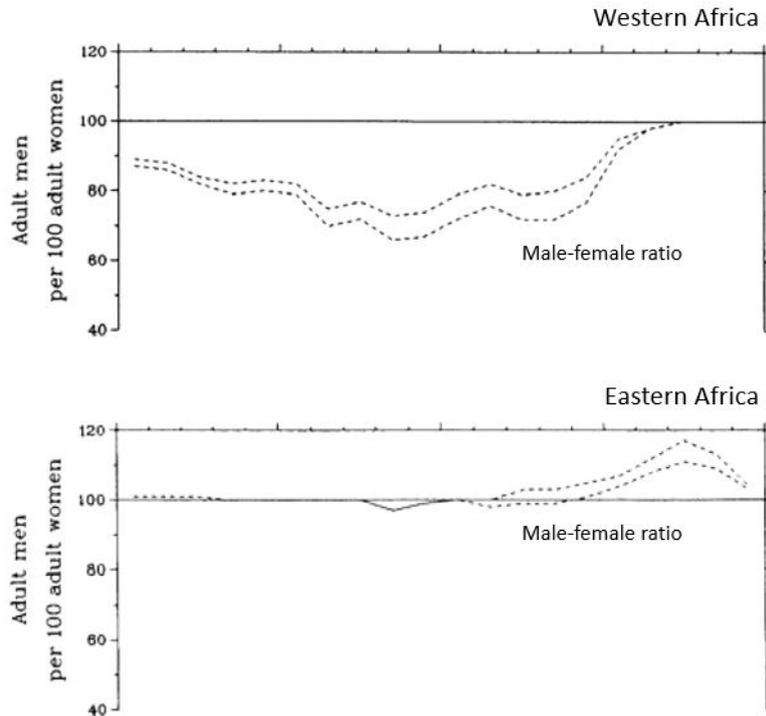
Secondly, the slave trades skewed the gender ratios in African countries. Figure 3 illustrates the impact of slave exports on the male-to-female gender ratio in Western and Eastern Africa. As mentioned, the transatlantic slave trade exported slaves to the Americas to work in plantations. Men were therefore preferred for their strength, decreasing the gender ratio in the affected 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 woman (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

Figure 2: Slave Exports



*Note:* Map illustrates the spatial distribution of the number of slaves exported from each ethnic region during the transatlantic slave trade (top) and Indian Ocean slave trade (bottom). Source: Based on Nunn and Wantchekon (2011).

Figure 3: Impact of Slave Trades on Gender Ratio



*Note:* 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). Source: Manning (1990).

the Middle East and India, the gender 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.

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 gender 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. The Indian Ocean slave trade had the opposite effect as this slave trade is negatively associated with polygyny due to the increased gender 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 statistically significant and robust to a selection of controls on a country level.

Teso (2019) argues that the altered gender ratio resulting from the transatlantic slave trade is associated with increased women labour force participation today. In ethnic regions where the intensity of transatlantic slave exports was 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.

## 2.2 Kinship Structures

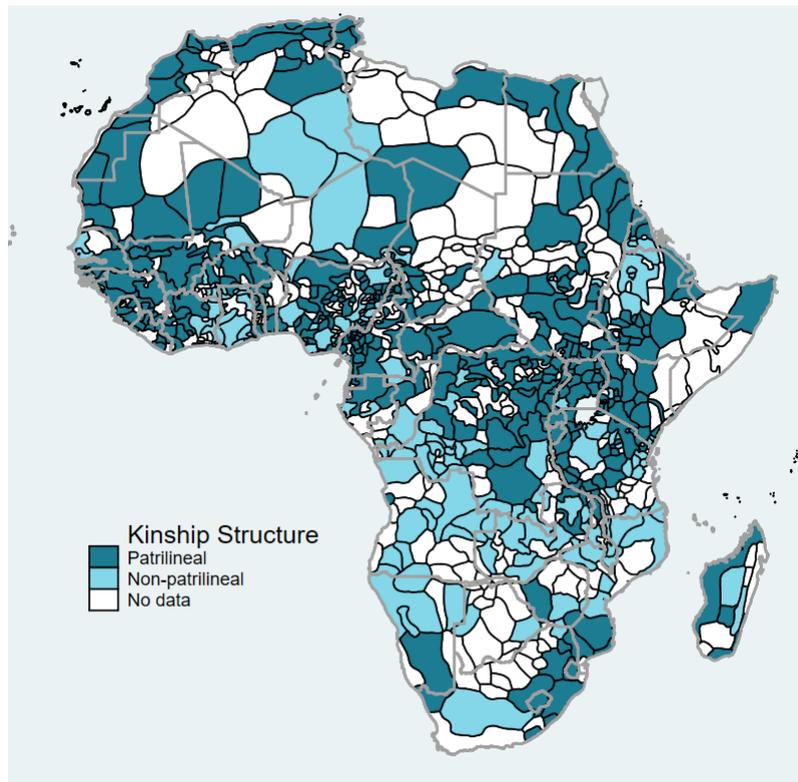
Different kinship structures also determine norms that hold cultural, social, economic and political implications for women in sub-Saharan Africa. Kinship structures not only determine the inheritance of property or lineage of the family, but also the distribution of resources and obligations of family members (Robinson & Gottlieb, 2019; Tène, 2021).

There are two types of *unilateral* kinship structures and several *cognatic* structures. In *unilateral* structures, descent is traced through either one of the two parents, fathers (patrilineal) or mothers (matrilineal). In patrilineal ethnic regions, lineage is traced through an individual's father's kinship group, and inheritance is passed to children from male group members. Although matrilineal societies are not the opposite of patrilineal kinships, lineage and inheritance are traced through female group members (Lowe, 2020b). Relative to women in patrilineal ethnic regions, women in matrilineal ethnic regions have greater support from their own kin networks, they are likely to hold more resources such as land, enjoy increased decision-making power, and are more willing to compete. Due to structural reasons such as matrilocality, where the husband and wife will live close to the wife's relatives, women have higher status and are more valued. Although matrilineality is not the same as matriarchy, women experience more empowerment relative to women in patrilineal ethnic regions (Lowe, 2020a; Robinson & Gottlieb, 2019; Tène, 2021).

*Cognatic* structures are more complicated. In these ethnic regions, lineage and inheritance are traced through both parents (Lowe, 2020a). These societies include duolateral, quasi-lineage, ambilineal, bilateral and mixed (Murdock, 1967). Although these kinship structures, vary to a degree, both the biological ancestors are of importance. In quasi-lineage societies, men trace their lineage from their father and women from their mothers, whilst in ambilineal societies, individuals are able to choose and may choose based on social and economic standing of the mother's or father's family. To some extent, we can assume that in these ethnic regions, like in matrilineal societies, women have more decision-making power (or structural power, as we discuss in the next section) relative to women in patrilineal ethnic regions. Figure 4 shows the distribution of patrilineal and non-patrilineal ethnic regions in sub-Saharan Africa.

Studies have associated kinship structures with women political participation. Robinson and Gottlieb (2019) find that matrilineality in sub-Saharan Africa is associated with closing the gender gap in political participation as a result of more progressive gender norms and views on gender roles. They highlight that increased women political participation in matrilineal societies should not be attributed to resource distribution, but to more equal gender and cultural norms. In India, Brule and Gaikwad (2020) find that kinship structures, which essentially determine decision-making regarding wealth through lineage, are key determinants of political participation and interest in politics. In patrilineal societies, men are more likely to participate in politics than women, however, in matrilineal societies this gender gap narrows.

Figure 4: Patrilineal and Non-Patrilineal Ethnic Regions



*Note:* Figure illustrates patrilineal and non-patrilineal kinship structures in sub-Saharan Africa. Source: Based on Murdock (1959) and Murdock (1967).

### 2.3 Conceptual Framework

As suggested by Guttentag and Secord (1983) and extended by South and Trent (1988), gender ratio imbalances affect the relative value of men and women. Gender ratio imbalances affect the dyadic power in interpersonal relationships, which specifically impact women's gender roles. Dyadic power, or bargaining power, is the relative power or influence that an individual has over the direction and nature of relationships with other individuals. When one gender is scarce, that gender will be more valued and less dependent on their partner as alternative relationship options are available to them. Contrary, the gender in oversupply will have a shortage of alternative partners they could enter into relationship with. The gender in short supply will therefore have greater bargaining power than the oversupplied gender.

Importantly, the Guttentag and Secord (1983) theory assumes that structural power within a society resides with men. Structural power, which is the control of legal, economic and political structures, determines customs and practices which societies adhere to. Structural power can therefore be thought of as the decision-making power within a society. Therefore, the ability of women to use their bargaining (dyadic) power in a situation where they are the scarce gender, would be limited to some extent due to the structural power that men have. In our view, this is not the case in all societies.

In some societies, such as those with matrilineal or *cognatic* kinship structures (hereafter

referred to as non-patrilineal societies), women would have some amount of structural power as lineage and inheritance are traced through female group members as well, which increases women participation in societal decision-making. Extending on Guttentag and Secord theory, South and Trent (1988) highlights that women, with greater structural power in a society, would be able to use their bargaining power to counteract men's attempts to limit their participation in activities and roles outside the family.

### **2.3.1 Decreased Gender Ratio**

Guttentag and Secord (1983) posit that in societies where men are scarce (decreased gender ratio), for example due to the transatlantic slave trade, men gain bargaining power within the society. In these societies, women are less valued as alternative options are available to men. Commitment to monogamous relationships is low and women may increase activities outside the family such as pursuing an education and entering into the labour force. Women become relatively more independent as they cannot rely on men remaining in monogamous relationships and providing for them. Additionally, in an attempt to oppose men's structural power within a society, women may increase political action and feminist movements may arise (Guttentag & Secord, 1983; South & Trent, 1988).

Findings by Dalton and Leung (2014) agree with this position, as they find that women, historically and in present-day, enter into polygynous relationships due to a lack of available options. Polygyny in itself entails far-reaching implications for gender norms within society. Tertilt (2006) finds that polygynous countries suffer more from gender inequality and have less power in national politics. Polygyny is also negatively associated to women empowerment and measures of women health (Bertocchi & Dimico, 2019; Tertilt, 2005). Findings by Teso (2019) are also in line with these premises, as the author shows that the transatlantic slave trade is associated with higher contemporary female labour force participation.

Grant, Kesternich, Steckenleiter, and Winter (2018) associate a decrease in the gender ratio in Germany to women political participation. Considering the long-run effects of the gender ratio imbalance caused by the Second World War on the market for politicians, the authors find that a decreased gender ratio is associated with higher shares of women voters. As political parties adopted more gender equal and women oriented policies, women increased their political participation and also entered into the political arena as candidates for political office. Similar to previous research, Grant et al. (2018) argue that as men were in shortage, women had to enter into jobs and roles that were previously occupied by men.

### **2.3.2 Increased Gender Ratio**

In societies where women are scarce (increased gender ratio), for example due to the Indian Ocean slave trade, women are more valued. Due to the scarcity of women and less available options for men, men treat women with more 'deference and respect'. Yet, as women gain bargaining power, men use their existing structural power to limit women's economic and political participation. In this case, women's activities outside the family are constrained. As women's

traditional and familial roles are more valued, women are less likely to enter the labour force and pursue an education (Guttentag & Secord, 1983; South & Trent, 1988).

Studying the effect of historical increased gender ratio in Australia, Grosjean and Khattar (2019) findings confirm the Guttentag and Secord (1983) hypothesis. During the 18th and 19th century, the British relocated more male convicts to Australia, increasing the gender ratio. They find that as a result, women are less likely to participate in the labour force today, and are more likely to enter into marriage. Findings also suggest more conservative views regarding women in the workforce.

### **2.3.3 Gender Ratio and Kinship Structures**

Although gender ratio imbalances can bring about changes in gender roles and norms as posited by Guttentag and Secord (1983), the pre-existing kinship structures, which allows us to measure women’s structural power, would determine how these imbalances in gender ratios affect norms and gender outcomes that persist. We therefore study whether the transatlantic and Indian Ocean slave trades, and resulting temporary gender ratio imbalances, can be associated with contemporary women political participation in the context of ethnic region kinship structures.

If we only consider the temporary gender ratio imbalance, we expect the transatlantic slave trade to be positively associated with women political participation, whilst we expect a negative association from the Indian slave trade. However, taking kinship structures into account, we then anticipate the correlations with women political participation to be different to our initial expectations between the two slave trades. We summarise our conceptual framework and the expected effect on voting in Figure 5.

In non-patrilineal societies, where women have some structural power, we expect both the slave trades to be positively associated with women political participation. Although men gain bargaining power as a result of the transatlantic slave trade, women become economically independent as a result of increased activities outside the family. This in turn leads to increased political engagement and participation in a society where women’s decisions are more valued. With respect to an increase in the gender ratio as a result of the Indian Ocean slave trade, we do not expect men to be able to oppress women’s gained bargaining power and their political participation. The effect of the Indian Ocean slave trade may not be as salient in non-patrilineal ethnic regions as women already have some decision-making power in these societies.

In patrilineal societies, we expect a woman’s ethnic region exposure to the transatlantic slave trade to be negatively associated with her political participation. In these societies, men gain bargaining power in addition to the structural power as determined by lineage. Although women may increase their roles outside the family, and it is expected that labour force participation will increase, men would use their structural power to limit women’s activities and participation in societal decision-making. In terms of exposure to the Indian Ocean slave trade, the expected association is not as clear. As women gain bargaining power, men will attempt to use their structural power to limit women’s economic and political participation. Therefore, although women are more valued, the gender dynamics that patrilineal kinship structure involves may

offset the expected gain in bargaining power.

Figure 5: Conceptual Framework

		GENDER RATIO Guttentag and Secord (1983) Theory (Imbalanced gender ratio affects <i>dyadic</i> power)	
		Transatlantic (Decreased) Men gain <i>dyadic</i> power	Indian Ocean (Increased) Women gain <i>dyadic</i> power
KINSHIP STRUCTURE	Non-patrilineal	Women increase activities outside of family To oppose men’s power, women increase political action <i>Positive</i>	Women’s traditional roles are encouraged Women are more valued and gain bargaining power <i>Positive</i>
	Patrilineal	Men limit women’s activities outside of the family and decision-making <i>Negative</i>	Women are more valued Men attempt to limit women’s power and other activities <i>Positive/negative</i>

*Note:* Figure illustrates the expected effect of the slave trades and consequent gender ratio imbalances in the context of kinship structures.

### 3 Data and Method

We use voting as a measure of contemporary political participation by women citizens. Data on voting is obtained from the Afrobarometer Survey Round 5 (2011 to 2013), Round 6 (2014 and 2015) and Round 7 (2016-2018) (BenYishay et al., 2017).<sup>3</sup> Countries surveyed and included in our sample are Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cote d’Ivoire, Gabon, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe. The variable  $vote_{iec}$  is a binary variable equal to 1 if an individual ( $i$ ), residing in ethnic region ( $e$ ) and country ( $c$ ), voted in the most recent election, 0 if not.

We assign geolocated individual coordinates as captured by the Afrobarometer to ethnic group polygons reported in the Murdock Map (Murdock, 1959). 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 data set is constructed using data on the number of slaves exported from ports together with information on slaves’ ethnic identity, georeferenced to the Murdock Map (Murdock, 1959). 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

<sup>3</sup>We use three rounds of geolocated surveys to mitigate the potential effect of a single election in a country on outcomes.

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.

To capture the role of pre-existing cultural norms regarding women within society, we account for major type of descent as captured in the Murdock Ethnographic Atlas (Murdock, 1967). The variable  $patrilineal_e$  is a binary variable equal to 1 if the ethnic group ( $e$ ) is a patrilineal kinship and 0 if it is a matrilineal or another *cognatic* descent kinship (duolateral, quasi-lineage, ambilineal, bilateral, mixed). As discussed, it is more likely for women to have some amount of structural power in ethnic regions that follow matrilineal or *cognatic* kinship structures.

We acknowledge that the Nunn and Wantchekon (2011) slave trade and Murdock (1967) Ethnographic Atlas data sets have some shortcomings. Firstly, the slave trade data set does not include Red Sea and trans-Saharan slave exports. Recent, not yet published, research by La Ferrara, Corno, and Voena (2021) build on Nunn and Wantchekon (2011) data to report exports on all four trades and show that women in ethnic regions with historical exposure to the Red Sea slave trade experience higher contemporary female genital cutting rates. Updating our study with this data is necessary to analyse alternative mechanisms through which the slave trades affect gender roles, norms and women political participation.

Secondly, ethnic group characteristics were documented during different time periods over 1850 to 1950. Giuliano and Nunn (2018), however, notes that as ethnic group characteristics such as type of descent are persistent and remain stable over time, Murdock’s data is still of value. Finally, there are some missing observations in the Murdock Ethnographic Atlas as shown in Figure 4. We are therefore not able to attribute pre-colonial ethnic characteristics to individuals residing in these ethnic regions and these observations are dropped. Despite the mentioned weaknesses, these data sources remain reliable and popular sources for researchers (for example Boxell et al. (2019), Robinson and Gottlieb (2019), Tène (2021) and Teso (2019)).

The main empirical specification is

$$\begin{aligned} vote_{iec} = & \beta_1 atlantictrade_e + \beta_2 patrilineal_e + \beta_3 atlantictrade_e * patrilineal_e \\ & + \beta_4 indianoceantrade_e + \beta_5 indianoceantrade_e * patrilineal_e \\ & + \beta_6 X_{iec} + \beta_7 X_{ec} + \alpha_{cs} + u_{iec} \end{aligned} \quad (1)$$

where the outcome variable,  $vote_{iec}$ , is whether a woman voted or not. To consider the effect on women political participation specifically, we follow Teso (2019) and Bertocchi and Dimico (2019) and estimate the empirical specification on a split sample of women.

The variable  $X_{iec}$  is a vector of individual-level controls which include age ( $age_{iec}$ ), age-squared ( $age_{iec}^2$ ), whether an individual resides in an urban area ( $urban_{iec}$ ), completed primary ( $primary_{iec}$ ) and secondary school ( $secondary_{iec}$ ), are Christian ( $christian_{iec}$ ) or Muslim ( $muslim_{iec}$ ), and fear political violence during election campaigns ( $violence_{iec}$ ). We control for age, as older individuals are more likely to vote. Studying 10 African countries, Kuenzi and Lambright (2011) find that a 50-year-old is approximately 15 per cent more likely to vote than

an 18-year-old. However, as we expect individuals to be less likely to vote after retirement, we also control for age-squared.

We include a binary variable equal to 1 if an individual resides in an urban area, 0 if not. Individuals from rural areas are more likely to vote than those from urban areas, since political parties often focus their political campaigns in these regions (Bratton, Mattes, & Gyimah-Boadi, 2005; Kuenzi & Lambright, 2011). We additionally include binary variables for primary and secondary school completion to measure education attainment, which also accounts for an individual’s resource base (Isaksson, 2014). As secondary education completion amongst women is low relative to primary education, we expect a negative association to voting.

Belonging to a religion is found to enhance social capital and networking, which may increase participation in community activities such as voting (Isaksson, 2014). We therefore include binary variables for Muslim and Christian religion.<sup>4</sup> Finally, to account for political intimidation that may deter women from voting during elections, the violence variable is a binary variable equal to 1 if an individual fears becoming a victim of political intimidation or violence during election campaigns in their country, 0 if not.

Borrowing from Teso (2019) and Bertocchi and Dimico (2019), we account for geographic and demographic ethnic-country region characteristics. The variable  $X_{ec}$  represents ethnic-country region controls that may influence political participation. These variables include soil suitability for agriculture ( $soilquality_{ec}$ ), the presence of large domesticated animals ( $largeanimals_{ec}$ ), malaria ( $malaria_{ec}$ ), a city in 1400 ( $1400city_{ec}$ ), and distance to national border from the centroid of an individual’s ethnic-country region ( $borderdistance_{ec}$ ). Historical agricultural features of ethnic regions have been found to play an important role in gender roles and women participation in politics (Alesina et al., 2013). The suitability of soil for agriculture is associated with economic development outcomes through the effect on technological diffusion, colonial reach and public infrastructure provision (Nunn & Puga, 2012). Additionally, we control for the presence of large domesticated animals that correlates with lower plough use and crop farming. Plough use has been linked to less equal gender norms and lower contemporary women political participation (Alesina et al., 2013). We expect both these measures to be positively associated with women political participation, as women are often dependent on subsistence farming.

We also account for ethnic-country region disease environment, by controlling for the malaria ecology. Malaria ecology measures the mean climatic conditions favourable for malaria. Although many studies have shown the negative effects of malaria on economic and socio-economic outcomes, the opposite may be true for political participation (Gallup & Sachs, 2001). In Tanzania, Croke (2021) finds that citizens residing in regions with higher malaria incidence increase their approval of political leaders as a result of increased anti-malaria campaigns and bed net distribution in these regions. We can therefore expect that these citizens may be more likely to vote as well.

Historical prosperity of ethnic regions is controlled for using a binary variable if there was a city with more than 20 000 inhabitants located within the ethnic region’s boundaries in 1400.

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<sup>4</sup>Relative to other religions such as traditional or ethnic religions, and not belonging to a religion.

Additionally, the distance to the border from the centroid of the individual’s ethnic-country region captures the potential lower development and quality rule of law in ethnic regions closer to national borders (Michalopoulos & Papaioannou, 2013; Pinkovskiy, 2017).

The variable  $\alpha_{cs}$  captures the country-survey fixed effects. The variable  $u_{iec}$  is an error term. We include country-survey fixed effect and account for potential spatial autocorrelation on country and ethnic region level with multi-way clustered standard errors using methodology developed by Cameron, Gelbach, and Miller (2011). Clustering at ethnic region and country level allows for valid inference in the instance that errors within geographical units are correlated.

Table 2: Summary Statistics

Variable	N	Mean	Std. Dev.	Min.	Max.
$vote_{iec}$	35,595	0.803	0.398	0	1
$atlantictrade_e$	35,595	0.500	0.926	0	3.656
$Binary\ atlantictrade_e$	35,595	0.559	0.496	0	1
$indianoceantrade_e$	35,595	0.040	0.203	0	3.330
$Binary\ indianoceantrade_e$	35,595	0.240	0.427	0	1
$patrilineal_e$	35,595	0.685	0.464	0	1
$age_{iec}$	35,595	36.598	13.417	18	105
$age_{iec}^2$	35,595	1519.439	1190.424	324	11025
$urban_{iec}$	35,595	0.354	0.478	0	1
$primary_{iec}$	35,595	0.546	0.498	0	1
$secondary_{iec}$	35,595	0.223	0.416	0	1
$muslim_{iec}$	35,595	0.292	0.455	0	1
$christian_{iec}$	35,595	0.689	0.463	0	1
$violence_{iec}$	35,595	0.326	0.469	0	1
$soilquality_{ec}$	35,595	0.477	0.206	0.002	0.935
$largeanimals_{ec}$	35,595	0.697	0.460	0	1
$malaria_{ec}$	35,595	0.738	0.278	0	1
$1400city_{ec}$	35,595	0.059	0.236	0	1
$borderdistance_{ec}$	35,595	4.351	0.904	-0.586	6.290

Note:  $vote_{iec}$ ,  $patrilineal_e$ ,  $urban_{iec}$ ,  $primary_{iec}$ ,  $secondary_{iec}$ ,  $muslim_{iec}$ ,  $christian_{iec}$ ,  $violence_{iec}$ ,  $largeanimals_{ec}$  and  $1400city_{ec}$  are binary variables.  $atlantictrade_e$ ,  $indianoceantrade_e$  and  $borderdistance_{ec}$  are logged variables.  $soilquality_{ec}$  and  $malaria_{ec}$  variables are indices.

Women sample summary statistics are provided in Table 2. On average, approximately 80.3 per cent of women voted in the recent election. In our sample, 55.9 per cent of individuals reside in ethnic regions exposed to the transatlantic slave trade, whilst only 24.0 per cent of individuals reside in ethnic regions exposed to the Indian Ocean slave trade. The intensity of the transatlantic slave trade is also higher than that of the Indian Ocean slave trade. In our sample, 68.5 per cent of individuals reside in patrilineal ethnic regions.

## 4 Results

### 4.1 Women Political Participation

We firstly consider the effect of the slave trades and consequent gender ratio imbalances on women political participation independently in Table 3 column 1. The effect of a woman’s

historical exposure to the slave trades on her likelihood to vote is not obvious when considering sub-Saharan Africa as a whole without distinguishing between kinship structures that likely determine distribution of structural power between genders within societies. In column 2, even though we control for patrilineal kinship and the coefficient sign is negative as expected, we are unable to discern the association between the resulting gender imbalances and contemporary women political participation, without taking the interrelated effect into account.

Results from estimating equation 1 are presented in columns 3 to 6. We progressively add individual and ethnic-country region controls to which regression coefficients remain consistent.<sup>5</sup> Results suggest that a woman’s ethnic region exposure to the transatlantic slave trade is associated with an increase in her likelihood to vote in non-patrilineal ethnic regions. In patrilineal ethnic regions, however, this effect is mitigated. Interpreting results from the full model specification in column 6, we can say that a one standard deviation increase in a woman’s non-patrilineal ethnic region exposure to the transatlantic slave trade (0.828 in the estimated sample) is associated with an increase in her likelihood to vote by approximately 1.2 percentage points ( $\beta_1$ ). On the other hand, a one standard deviation increase in a woman’s patrilineal ethnic region exposure to the transatlantic slave trade (0.968 in the estimated sample) is associated with a decrease in her likelihood to vote by approximately 0.7 percentage points ( $\beta_3$ ). The transatlantic slave trade is associated with a 1.5 per cent increase in women voting in non-patrilineal and a 0.9 per cent decrease in patrilineal ethnic regions relative to the average in these respective ethnic regions that were not exposed to the transatlantic slave trades. Indian Ocean slave trade coefficients are not statistically significant.

Considering that the majority of ethnic regions in sub-Saharan Africa are patrilineal in nature, we could therefore conjecture that, on average, women political participation would have been higher in the absence of the transatlantic slave trades. For example, in a patrilineal country like Kenya which experienced very low levels of transatlantic slave trade, a one standard deviation increase in historical exposure to the transatlantic slave would be associated with 800 000 fewer women registering to vote during the 2017 General Elections (IEBC, 2017).<sup>6</sup> This is approximately equivalent to the female population in Bungoma or Meru, Kenya’s fifth and sixth most populated counties (Kenya National Bureau of Statistics, 2019).

As pointed out by Teso (2019), the slave trades may have produced structural changes in society, which would affect political participation in general. It could be argued that the slave trades affect voting for all individuals due to lower trust or higher conflict in these regions (Besley & Reynal-Querol, 2014; Nunn & Wantchekon, 2011). To test whether our results are as a result of the temporary gender ratio imbalances that altered gender norms and not general societal effects, we estimate equation 1 for men in the Afrobarometer sample in Appendix A.1. Our findings do not hold for men. We can therefore attribute the association we observe to changes in gender norms that the slave trades produced in the context of already existing gender

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<sup>5</sup>In column 5, we estimate equation 1 with only ethnic-country region controls included, as some individual-level controls, for example education, may be influenced by kinship structures. Such controls may therefore be additional channels through which political participation is affected (Robinson & Gottlieb, 2019). Our results, however, remain stable when including chosen individual controls.

<sup>6</sup>We use registered voters as reference, as voting data by gender is not readily available.

Table 3: Women Voting Results

	Dependent Variable: $vote_{iec}$					
	(1)	(2)	(3)	(4)	(5)	(6)
$atlantictrade_e$	0.002 (0.005)	0.001 (0.004)	0.013 (0.008)	0.014** (0.007)	0.015* (0.008)	0.015** (0.007)
$patrilineal_e$		-0.015* (0.008)	0.001 (0.011)	0.002 (0.011)	-0.006 (0.011)	-0.004 (0.010)
$atlantictrade_e * patrilineal_e$			-0.016* (0.009)	-0.019** (0.008)	-0.020** (0.009)	-0.022*** (0.008)
$indianoceantrade_e$	0.003 (0.009)	-0.000 (0.009)	0.008 (0.007)	0.003 (0.008)	0.007 (0.007)	0.003 (0.008)
$indianoceantrade_e * patrilineal_e$			-0.044 (0.037)	-0.043 (0.047)	-0.024 (0.044)	-0.034 (0.048)
$age_{iec}$	0.021*** (0.001)	0.021*** (0.001)		0.021*** (0.001)		0.021*** (0.001)
$age_{iec}^2$	-0.0002*** (0.000)	-0.0002*** (0.000)		-0.0002*** (0.000)		-0.0002*** (0.000)
$urban_{iec}$	-0.045*** (0.006)	-0.045*** (0.006)		-0.044*** (0.007)		-0.045*** (0.006)
$primary_{iec}$	0.005 (0.005)	0.005 (0.005)		0.004 (0.005)		0.005 (0.005)
$secondary_{iec}$	-0.013** (0.006)	-0.013** (0.006)		-0.013** (0.006)		-0.014** (0.006)
$muslim_{iec}$	0.063** (0.029)	0.062** (0.029)		0.063** (0.028)		0.063** (0.029)
$christian_{iec}$	0.038 (0.026)	0.038 (0.026)		0.036 (0.025)		0.037 (0.026)
$violence_{iec}$	-0.014** (0.006)	-0.015** (0.006)		-0.017*** (0.006)		-0.014** (0.006)
$soilquality_{ec}$	0.047 (0.034)	0.052 (0.033)			0.038 (0.033)	0.064* (0.033)
$largeanimals_{ec}$	0.012 (0.009)	0.011 (0.009)			0.015* (0.009)	0.013 (0.009)
$malaria_{ec}$	0.028 (0.026)	0.032 (0.025)			0.053** (0.026)	0.033 (0.025)
$1400city_{ec}$	0.046*** (0.014)	0.046*** (0.013)			0.060*** (0.012)	0.049*** (0.012)
$borderdistance_{ec}$	-0.004 (0.004)	-0.004 (0.004)			-0.008** (0.004)	-0.005 (0.004)
Observations	35,626	35,595	39,254	36,921	37,745	35,595
R-squared	0.111	0.111	0.071	0.111	0.072	0.112
Country-survey FE	Yes	Yes	Yes	Yes	Yes	Yes

Note:  $vote_{iec}$  is a binary variable equal to 1 if a woman voted in the most recent election, 0 if not.  $atlantictrade_e$  is the number of slaves exported during the transatlantic slave trade normalised by the historic land area of that ethnic region.  $indianoceantrade_e$  is the number of slaves exported during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.  $patrilineal_e$  is a binary variable equal to 1 if the ethnic group is a patrilineal kinship, 0 if otherwise. Standard errors in parentheses clustered by ethnic region and country level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

dynamics in patrilineal and non-patrilineal societies.

We show that our results are persistent across different birth cohorts and different slave trade periods in Appendix A.2 and A.3. We furthermore consider the transatlantic and Indian

Ocean slave trade in isolation and check whether our results remain robust to the inclusion of additional control variables. Results are reported in Appendices A.4 and A.5. In Appendix A.6 we check our results using alternative standard errors and model estimations. We account for spatial correlation by computing Conley (1999) standard errors and cluster standard errors by ethnic region level to address correlation within ethnic regions only. Results from a logistic model accounting for nonlinearity and Lewbel (2012) IV model allowing for the potential effect of unobserved factors, also confirm our main findings.

In summary, although men gain bargaining power as a result of the transatlantic slave trade, women become economically independent, which may in turn lead to increased participation in other domains such as the political arena. Yet, although women increase their activities outside the family, their political participation is constrained where lineage is determined by male group membership. In these ethnic regions, where women have limited structural power and women empowerment is not supported, we see a negative association. We do not find a statistically significant relationship between a woman’s ethnic region exposure to the Indian Ocean slave trade and her likelihood to vote.

## 4.2 Gender Norms as Mechanism

In Table 4 we determine the effect of the transatlantic and Indian Ocean slave trade on gender norms in patrilineal and non-patrilineal ethnic regions as the potential mechanism through which women political participation is affected. We consider three measurements of gender norms using individual responses to questions regarding gender roles within society.

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 if not. The Afrobarometer survey question asks an individual respondent to agree or strongly agree with one of two statements. We code the variable as equal to 1 if an individual agrees or strongly agrees with the following statement: “Women should have the same chance of being elected to political office as men.” The variable is equal to 0 if an individual agrees or strongly agrees with the following statement: “Men make better political leaders than women, and should be elected rather than women.” Results with respect to views regarding women as political leaders are reported in columns 1 to 3.

To measure whether women increase and decrease their activities outside the family when exposed to the transatlantic and Indian Ocean slave trade as theorised, we additionally consider views regarding employment and schooling. The Guttentag and Secord (1983) theory posits that increased gender ratios, such as during the Indian Ocean slave trade, encourages women’s traditional roles within the family and society as men use their structural power to limit the bargaining (that may translate into economic and political) power gained by women. Contrary, a decrease in the gender ratio is associated with an increase in women’s participation in activities outside the family.

The variable  $employment_{iec}$  is a binary variable equal to 1 if an individual agrees or strongly agrees with the statement: “When jobs are scarce, men should have more right to a job than

women?”. The variable is equal to 0 if an individual disagrees or strongly disagrees. The variable  $schoolboy_{iec}$  is a binary variable equal to 1 if an individual prefers boys be educated rather than girls, and 0 if an individual prefers the child with the greatest ability be educated (when funding is limited). The Afrobarometer survey question asks an individual respondent to agree or strongly agree with one of two statements. The variable is equal to 1 if an individual agrees or strongly agrees with the following statement: “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 an individual agrees or strongly agrees with the following statement: “If funds for schooling are limited, a family should send the child with the greatest ability to learn.” Should an individual be of the opinion that men should have more right to employment than women (columns 4 to 6) and that boys should be educated rather than girls (columns 7 to 9), we can assume that these individuals have less progressive gender norms.<sup>7</sup> We re-estimate our main model specification from equation 1 with these measurements of gender norms as the outcome variables. In Table 4 columns 1, 4 and 7 we report results for the full sample of men and women and control for gender. We subsequently split the sample by women (columns 2, 5, and 8) and men (columns 3, 6, and 9) to evaluate gender norms for each.

Results in columns 1 and 2 suggest a negative association between patrilineality and views regarding women’s opportunity to be elected into political office, specifically, women’s own views. For society as a whole, our findings furthermore suggest that exposure to the Indian Ocean slave trade (increased gender ratio) is positively associated with views on women as political leaders in patrilineal ethnic regions. For women specifically, the Indian Ocean slave trade is positive and significantly associated with an improvement in how women view themselves as political leaders in non-patrilineal and especially in patrilineal ethnic regions. Interpreting results from column 2, we can say that a one standard deviation increase in a woman’s patrilineal ethnic region exposure to the Indian Ocean slave trade (0.059 in the estimated sample) is associated with an increase in her likelihood to have the view that women should have equal opportunity to contend in political office by approximately 1.3 percentage points.

As women already have some structural power in non-patrilineal ethnic regions, it is not surprising that we do not find a large and significant effect on gender norms regarding women in the political arena in these societies. In patrilineal ethnic regions, where we assume men to have the structural power, changes in the dyadic power of women may have a larger effect in how society views women in the political arena. Therefore, a change in gender norms that increases the value of women, increases their view of themselves as political contenders even in ethnic regions where men have structural power. According to results from Table 3, the positive association to women’s views regarding themselves as political leaders, is not translated into active political participation. We do not find a statistically significant relationship between ethnic region exposure to the transatlantic slave trade and views regarding women as political leaders.

Regarding attitudes on women’s roles outside the family, such as employment and educa-

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<sup>7</sup>These questions were only asked during single Afrobarometer surveys (Round 7 for  $employment_{iec}$ , Round 5 for  $schoolboy_{iec}$ ) and we therefore have less observations in this analysis.

Table 4: Gender Norms Results

	Dependent Variable:								
	<i>womenleaders<sub>iec</sub></i>			<i>employment<sub>iec</sub></i>			<i>schoolboy<sub>iec</sub></i>		
	(1)	Women (2)	Men (3)	(4)	Women (5)	Men (6)	(7)	Women (8)	Men (9)
<i>atlantictrade<sub>e</sub></i>	-0.009 (0.010)	-0.001 (0.011)	-0.017 (0.011)	-0.035** (0.013)	-0.044*** (0.015)	-0.026 (0.016)	0.027 (0.018)	0.013 (0.019)	0.040** (0.019)
<i>patrilineal<sub>e</sub></i>	-0.018* (0.010)	-0.022** (0.011)	-0.015 (0.013)	-0.007 (0.020)	-0.015 (0.023)	0.002 (0.021)	0.032* (0.017)	0.039** (0.019)	0.025 (0.017)
<i>atlantictrade<sub>e</sub> * patrilineal<sub>e</sub></i>	0.008 (0.011)	0.003 (0.013)	0.013 (0.013)	0.044*** (0.016)	0.053*** (0.017)	0.036* (0.019)	-0.010 (0.020)	0.000 (0.021)	-0.021 (0.021)
<i>indianoceantrade<sub>e</sub></i>	0.005 (0.005)	0.011* (0.006)	-0.001 (0.007)	0.027* (0.015)	0.010 (0.019)	0.044*** (0.015)	-0.040*** (0.014)	-0.041** (0.016)	-0.038*** (0.014)
<i>indianoceantrade<sub>e</sub> * patrilineal<sub>e</sub></i>	0.156** (0.067)	0.216*** (0.068)	0.100 (0.072)	-0.208*** (0.064)	-0.140** (0.069)	-0.278*** (0.098)	-0.087 (0.085)	-0.062 (0.084)	-0.116 (0.098)
<i>woman<sub>iec</sub></i>	0.121*** (0.007)			-0.141*** (0.007)			-0.040*** (0.005)		
Observations	80,826	40,646	40,180	22,724	11,513	11,211	25,661	12,783	12,878
R-squared	0.071	0.061	0.063	0.071	0.056	0.063	0.048	0.053	0.047
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-survey FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Note:* *womenleaders<sub>iec</sub>* 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 if an individual is of the view that men make better political leaders than women. *employment<sub>iec</sub>* is a binary variable equal to 1 in an individual agrees that when jobs are scarce, men should have more right to a job than women, 0 if not. *schoolboy<sub>iec</sub>* is a binary variable equal to 1 if an individual agrees that a boy should have preference to attend school, 0 if the individual agrees that the child with the greatest ability to learn should be educated. *atlantictrade<sub>e</sub>* is the number of slaves exported during the transatlantic slave trade normalised by the historic land area of that ethnic region. *indianoceantrade<sub>e</sub>* is the number of slaves exported during the Indian Ocean slave trade normalised by the historic land area of that ethnic region. *patrilineal<sub>e</sub>* is a binary variable equal to 1 if the ethnic group is a patrilineal kinship, 0 if otherwise. Individual controls include age, age-squared, whether an individual resides in an urban area, completed primary and secondary school, are Christian or Muslim, and fear political violence during election campaigns. Region controls include soil suitability for agriculture, the presence of large domesticated animals, malaria, a city in 1400, and distance to national border from the centroid of an individual's ethnic-country region. Standard errors in parentheses clustered by ethnic region and country level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

tion, results are in line with expected changes as posited by Guttentag and Secord (1983). With respect to views regarding employment, the transatlantic slave trade (decreased gender ratio) is associated with a decrease in views that men should get a job rather than women. This is specifically true for women in non-patrilineal ethnic regions, as results from columns 4 to 5 suggest. On the other hand, an individual's patrilineal ethnic region exposure to the transatlantic slave trade is associated with an increase in his or her likelihood to have the view that when jobs are scarce, men should have more right to a job than women. These results support findings in Table 3 that the transatlantic slave trade is associated with decreased women political participation in patrilineal ethnic regions. As expected, the Indian Ocean slave trade has a different effect on these views. An individual's patrilineal ethnic region exposure to the Indian Ocean slave trade is associated with a decrease in the likelihood to have the view that men should have more right to a job, i.e. associated with more progressive gender norms.

With respect to views regarding schooling, amongst men, the increase in men's bargaining power due to the transatlantic slave trade, in non-patrilineal ethnic regions (where women have

some structural power) is associated with an increase in the view that boys should be educated rather than girls. Due to women gaining bargaining power as a result of the temporary increased gender ratio brought about by the Indian Ocean slave trade, views that boys should be educated rather than girls decreases in non-patrilineal ethnic regions, as reported in columns 7 to 9.<sup>8</sup>

The transatlantic and Indian Ocean slave trades do not affect gender norms in the same way. It is therefore not through the effect on the society in general that the slave trades affect women political participation, but through the temporary imbalance in the gender ratio and the differential effects on gender norms. Results are supportive of our hypothesis that the slave trades and consequent changes in gender ratios affected the value of women and norms regarding women differently within patrilineal and non-patrilineal ethnic regions.

## 5 Robustness Checks

### 5.1 Alternative Specifications

In Table 5 we estimate equation 1 using alternative measures of slave trade intensity borrowing from La Ferrara et al. (2021), Nunn and Wantchekon (2011) and Obikili (2016a). In column 1, slave trade intensity is calculated by normalising slave exports by the historical land area occupied by each ethnic group as reported by (Murdock, 1967).<sup>9</sup> From here, in column 2, we calculate the inverse hyperbolic sine (IHS) of the normalised slave trade intensity measure as suggested by Bellemare and Wichman (2020) to account for the skewed distribution of slave exports. Our slave trade data is skewed since there are ethnic regions that did not experience either of the slave trades and there are few ethnic regions that experienced quite intense exports. In column 3 we normalise slave trade exports using the size of the population of ethnic regions as reported in 1960 to account for prosperity of ethnic regions that may influence slave trade intensity, (Michalopoulos & Papaioannou, 2013).

Finally, to capture whether it was the occurrence of the respective slave trades rather than the magnitude thereof, we create binary variables that are equal to 1 if an ethnic region experienced either the transatlantic or Indian Ocean slave trades, 0 if not. Results from Table 5 support our main findings as reported in Section 4.1.

In Table 6 we consider inheritance rule and locality as alternative specifications of patrilineality (Murdock, 1967). Patrilineal inheritance is a binary variable equal to 1 when the inheritance rule for real property is patrilineal, or to both children with daughters receiving less. Patrilineal inheritance is equal to 0 if individual property rights are absent, inheritance rule is matrilineal, or to both children equally. Non-patrilineal inheritance would therefore entail women having more access to resources such as land relative to women in ethnic regions where inheritance rule is patrilineal. We additionally consider patrilineal locality, presented in column 2. Patrilineal locality is a binary variable equal to 1 when marital residence after the first years of marriage is patrilocal, and 0 otherwise.

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<sup>8</sup>In columns 1, 4 and 7 we can see that women's views regarding their participation in political office, employment and schooling are more progressive relative to men.

<sup>9</sup>In this instance, we do not take the natural log plus 1.

Table 5: Alternative Slave Exports Results

	Dependent Variable: $vote_{iec}$			
	Area (1)	IHS (2)	Population (3)	Binary (4)
$atlantictrade_e$	0.004*** (0.002)	0.011** (0.005)	0.127* (0.074)	0.025** (0.012)
$patrilineal_e$	-0.005 (0.010)	-0.005 (0.010)	-0.010 (0.009)	0.003 (0.013)
$atlantictrade_e * patrilineal_e$	-0.005*** (0.002)	-0.017*** (0.006)	-0.134* (0.074)	-0.024 (0.017)
$indianoceantrade_e$	0.001 (0.001)	0.002 (0.007)	-0.036 (0.032)	-0.026 (0.020)
$indianoceantrade_e * patrilineal_e$	-0.018 (0.032)	-0.023 (0.038)	-0.133 (0.184)	-0.012 (0.018)
Observations	35,595	35,595	35,595	35,595
R-squared	0.112	0.112	0.112	0.112
Individual controls	Yes	Yes	Yes	Yes
Region controls	Yes	Yes	Yes	Yes
Country-survey FE	Yes	Yes	Yes	Yes

*Note:*  $vote_{iec}$  is a binary variable equal to 1 if a woman voted in the most recent election, 0 if not.  $atlantictrade_e$  and  $indianoceantrade_e$  are the respective measurements of slave trade intensity as discussed.  $patrilineal_e$  is a binary variable equal to 1 if the ethnic group is a patrilineal kinship, 0 if otherwise. Individual controls include age, age-squared, whether an individual resides in an urban area, completed primary and secondary school, are Christian or Muslim, and fear political violence during election campaigns. Region controls include soil suitability for agriculture, the presence of large domesticated animals, malaria, a city in 1400, and distance to national border from the centroid of an individual's ethnic-country region. Standard errors in parentheses clustered by ethnic region and country level. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Again, results suggest that a woman's non-patrilineal ethnic region exposure to the transatlantic slave trade is associated with an increase in her likelihood to vote. In patrilineal ethnic regions, however, this effect is mitigated. Interestingly, a woman's non-patrilineal ethnic region exposure to the Indian Ocean slave trade is negatively associated with her likelihood to vote. A one standard deviation increase in a woman's non-patrilineal ethnic region exposure to the Indian Ocean slave trade (0.171 in the estimated sample) is associated with a decrease in her likelihood to vote by 0.95 percentage points. As noted by Guttentag and Secord (1983), where women are more valued due to their scarcity their traditional roles within the household are encouraged, which may cause a decrease in participation in other activities outside the family. In addition, given that women have economic structural power based on resources such as land, they may not see the need to participate in other spheres of society. A woman's patrilineal ethnic region exposure to the Indian Ocean slave trade is positively associated with her likelihood to vote. This is indicative of the offsetting effect between the structural power that men have and the bargaining power that women gain as a result of the increased gender ratio.

Table 6: Patrilineal Inheritance and Locality Results

	Dependent Variable: $vote_{iec}$	
	Inheritance (1)	Locality (2)
$atlantictrade_e$	0.020** (0.010)	0.021** (0.010)
$patrilineal_e$	0.002 (0.014)	0.003 (0.013)
$atlantictrade_e * patrilineal_e$	-0.021** (0.011)	-0.024** (0.011)
$indianoceantrade_e$	-0.056** (0.025)	-0.012 (0.021)
$indianoceantrade_e * patrilineal_e$	0.066*** (0.025)	0.020 (0.021)
Observations	31,693	34,822
R-squared	0.109	0.112
Individual controls	Yes	Yes
Region controls	Yes	Yes
Country-survey FE	Yes	Yes

*Note:*  $vote_{iec}$  is a binary variable equal to 1 if a woman voted in the most recent election, 0 if not.  $atlantictrade_e$  is the number of slaves exported during the transatlantic slave trade normalised by the historic land area of that ethnic region.  $indianoceantrade_e$  is the number of slaves exported during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.  $patrilineal_e$  is a binary variable equal to 1 if the ethnic group follows patrilineal inheritance (column 1) and locality (column 2), 0 if otherwise. Individual controls include age, age-squared, whether an individual resides in an urban area, completed primary and secondary school, are Christian or Muslim, and fear political violence during election campaigns. Region controls include soil suitability for agriculture, the presence of large domesticated animals, malaria, a city in 1400, and distance to national border from the centroid of an individual's ethnic-country region. Standard errors in parentheses clustered by ethnic region and country level. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

## 6 Concluding Remarks

Whilst the transatlantic slave trade exported more men resulting in a temporary decreased male-to-female gender ratio, the Indian Ocean slave trade exported more women resulting in a temporary increased gender ratio. We study whether the resulting temporary gender ratio imbalances can explain contemporary women political participation, in the context of pre-existing kinship structures that determine lineage and inheritance.

To study the potential effect of the slave trades on women political participation in societies where women have different decision-making power, we use geolocated Afrobarometer survey data from 29 African countries and ethnic region-level data on the transatlantic and Indian Ocean slave trades, as well as kinship structures. Our results suggest that a woman's non-patrilineal ethnic region exposure to the transatlantic slave trade is associated with an increase in her likelihood to vote. In patrilineal ethnic regions, on the other hand, transatlantic slave trade exposure is associated with a decrease in a woman's likelihood to vote, as men would use their structural power to limit women's economic and political participation. Altered gender

norms are the potential mechanism through which the slave trades and consequent temporary imbalanced gender ratios affect women political participation in patrilineal and non-patrilineal societies.

This study substantiates literature on the long-run effect of slave trades and pre-colonial kinship structures 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 (SDGs) 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.

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# A Appendix

## A.1 Men Political Participation

To test whether our results hold and are based on the effect of the temporary imbalanced gender ratio as hypothesised, we additionally estimate equation 1 for men in the Afrobarometer sample in Table A.1. Results show that our findings only hold for women in the sample. Interestingly, results show that a man’s non-patrilineal ethnic region exposure to the Indian Ocean slave is associated with a decrease in his likelihood to vote. As women gain dyadic power in a society where they likely already have some structural power, men’s decision-making power and influence in the political arena may be constrained. We can therefore attribute changes in women political participation that we observe in Table 3 to the temporary gender ratio imbalances in patrilineal and non-patrilineal ethnic regions that had existing gender dynamics and practices that influence women roles.

Table A.1: Men Voting Results

	Dependent Variable: $vote_{iec}$					
	(1)	(2)	(3)	(4)	(5)	(6)
$atlantictrade_e$	-0.001 (0.004)	-0.002 (0.004)	-0.001 (0.006)	0.003 (0.005)	0.001 (0.008)	0.004 (0.006)
$patrilineal_e$		-0.015** (0.006)	-0.008 (0.009)	-0.007 (0.007)	-0.013 (0.009)	-0.010 (0.008)
$atlantictrade_e * patrilineal_e$			-0.004 (0.007)	-0.008 (0.006)	-0.007 (0.008)	-0.010 (0.007)
$indianoceantrade_e$	-0.023*** (0.008)	-0.025*** (0.008)	-0.022*** (0.006)	-0.025*** (0.007)	-0.024*** (0.006)	-0.024*** (0.008)
$indianoceantrade_e * patrilineal_e$			-0.009 (0.036)	-0.026 (0.035)	0.015 (0.037)	-0.013 (0.037)
Observations	35,871	35,840	39,947	37,175	38,460	35,840
R-squared	0.096	0.096	0.058	0.095	0.059	0.097
Individual controls	Yes	Yes		Yes		Yes
Region controls	Yes	Yes			Yes	Yes
Country-survey FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes:  $vote_{iec}$  is a binary variable equal to 1 if a man voted in the most recent election, 0 if not.  $atlantictrade_e$  is the number of slaves exported during the transatlantic slave trade normalised by the historic land area of that ethnic region.  $indianoceantrade_e$  is the number of slaves exported during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.  $patrilineal_e$  is a binary variable equal to 1 if the ethnic group is a patrilineal kinship, 0 if otherwise. Individual controls include age, age-squared, whether an individual resides in an urban area, completed primary and secondary school, are Christian or Muslim, and fear political violence during election campaigns. Region controls include soil suitability for agriculture, the presence of large domesticated animals, malaria, a city in 1400, and distance to national border from the centroid of an individual’s ethnic-country region. Standard errors in parentheses clustered by ethnic region and country level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## A.2 Persistence

Although gender ratio imbalances resulting from the slave trades were temporary and not necessarily persistent, the effect on gender norms continue. To check the persistence of our findings from Section 4.1, Table A.2 reports birth cohort results for women. In column 1 we report results for women born within the first 25 years after the independence of their country of residence. As an example, this would include Kenyan women born between 1963 and 1987. In column 2 we report results for women born after 25 years of independence. For Kenyan women, this would include women born after 1988.<sup>10</sup>

Table A.2: Birth Cohort Results

	Dependent Variable: $vote_{iec}$	
	Within 25 Years of Independence	After 25 Years of Independence
	(1)	(2)
$atlantictrade_e$	0.011 (0.009)	0.023*** (0.008)
$patrilineal_e$	-0.007 (0.013)	0.007 (0.016)
$atlantictrade_e * patrilineal_e$	-0.023** (0.009)	-0.028** (0.011)
$indianoceantrade_e$	-0.003 (0.010)	0.014 (0.011)
$indianoceantrade_e * patrilineal_e$	-0.009 (0.057)	-0.095 (0.095)
Observations	17,755	12,378
R-squared	0.087	0.129
Individual controls	Yes	Yes
Region controls	Yes	Yes
Country-survey FE	Yes	Yes

*Note:*  $vote_{iec}$  is a binary variable equal to 1 if a woman voted in the most recent election, 0 if not.  $atlantictrade_e$  is the number of slaves exported during the transatlantic slave trade normalised by the historic land area of that ethnic region.  $indianoceantrade_e$  is the number of slaves exported during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.  $patrilineal_e$  is a binary variable equal to 1 if the ethnic group is a patrilineal kinship, 0 if otherwise. Individual controls include age, age-squared, whether an individual resides in an urban area, completed primary and secondary school, are Christian or Muslim, and fear political violence during election campaigns. Region controls include soil suitability for agriculture, the presence of large domesticated animals, malaria, a city in 1400, and distance to national border from the centroid of an individual's ethnic-country region. Standard errors in parentheses clustered by ethnic region and country level. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Results reported in Table A.2 are in line with results reported in Table 3. Specifically, for women born after 25 years of independence, results suggest that their non-patrilineal ethnic region exposure to the transatlantic slave trade is associated with an increase in the likelihood to vote. For both birth cohorts, patrilineal ethnic region exposure to the transatlantic slave trade is negatively associated with the likelihood of women voting.

<sup>10</sup>Our sample size for women born prior to independence is small, and we therefore do not consider the 25 years prior to independence.

### A.3 Heterogeneous Time Effects

In Table A.3 we evaluate whether the effect of the slave trades varies across different time periods of the transatlantic and Indian Ocean slave trades. We use the number of slaves exported during the respective time periods, 1400 to 1599, 1600 to 1699, 1700 to 1799 and 1800 to 1899, as reported by Nunn and Wantchekon (2011). Results with respect to slave trades during the 1600 to 1899 period (columns 2 to 4) are in line with our main findings as presented in Table 3. Interpreting results from column 4, we can say that a one standard deviation increase in a woman's patrilineal ethnic region exposure to the transatlantic slave trade during the last century, 1800 to 1899 (0.379 in the estimated sample), is associated with a decrease in her likelihood to vote by approximately 1.6 percentage points.

Table A.3: Slave Trades by Time Period Results

	Dependent Variable: $vote_{iec}$			
	1400-1599 (1)	1600-1699 (2)	1700-1799 (3)	1800-1899 (4)
$atlantictrade_e$	-0.096 (0.211)	0.085*** (0.028)	0.028*** (0.009)	0.015 (0.011)
$patrilineal_e$	-0.015* (0.009)	-0.005 (0.009)	-0.002 (0.010)	-0.006 (0.009)
$atlantictrade_e * patrilineal_e$	0.097 (0.200)	-0.110*** (0.029)	-0.034*** (0.010)	-0.041*** (0.014)
$indianoceantrade_e$	0.005 (0.013)	0.014 (0.017)	0.009 (0.013)	0.006 (0.011)
$indianoceantrade_e * patrilineal_e$	-0.007 (0.130)	-0.111 (0.259)	-0.164 (0.160)	-0.056 (0.097)
Observations	35,595	35,595	35,595	35,595
R-squared	0.111	0.112	0.112	0.112
Individual controls	Yes	Yes	Yes	Yes
Region controls	Yes	Yes	Yes	Yes
Country-survey FE	Yes	Yes	Yes	Yes

*Note:*  $vote_{iec}$  is a binary variable equal to 1 if a woman voted in the most recent election, 0 if not.  $atlantictrade_e$  is the number of slaves exported during the transatlantic slave trade normalised by the historic land area of that ethnic region.  $indianoceantrade_e$  is the number of slaves exported during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.  $patrilineal_e$  is a binary variable equal to 1 if the ethnic group is a patrilineal kinship, 0 if otherwise. Individual controls include age, age-squared, whether an individual resides in an urban area, completed primary and secondary school, are Christian or Muslim, and fear political violence during election campaigns. Region controls include soil suitability for agriculture, the presence of large domesticated animals, malaria, a city in 1400, and distance to national border from the centroid of an individual's ethnic-country region. Standard errors in parentheses clustered by ethnic region and country level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### A.4 Slave Trades in Isolation

To consider the potential that the two slave trade and their effects are interrelated, we evaluate the slave trades in isolation in Table A.4 columns 1 to 4. In column 1, we consider the transatlantic slave trade and column 2, the Indian Ocean slave trade for the full sample. In

columns 3 and 4, we consider the transatlantic and Indian Ocean slave trade, respectively, for a sample of women residing in ethnic regions that were affected by either or both of the slave trades. We therefore exclude individuals from ethnic regions that were not exposed to any of the slave trades. Results do not indicate that the transatlantic and Indian Ocean slave trades are interrelated in their effect on contemporary women voting. Excluding individuals residing in ethnic regions unaffected by the slave trades also do not attenuate our findings.

Table A.4: Separate Slave Trade and Affected Region Results

	Dependent Variable: $vote_{iec}$					
	All Regions		Slave Trade Affected Regions			
	(1)	(2)	(3)	(4)	(5)	(6)
$atlantictrade_e$	0.014** (0.007)		0.012* (0.007)		0.012* (0.007)	0.014* (0.007)
$patrilineal_e$	-0.006 (0.009)	-0.014 (0.009)	-0.008 (0.015)	-0.016 (0.019)	-0.007 (0.015)	-0.002 (0.016)
$atlantictrade_e * patrilineal_e$	-0.022*** (0.008)		-0.017** (0.008)		-0.018** (0.008)	-0.020** (0.008)
$indianoceantrade_e$		0.0001 (0.009)		0.007 (0.009)	0.005 (0.007)	0.008 (0.008)
$indianoceantrade_e * patrilineal_e$		-0.022 (0.045)		0.021 (0.059)	0.001 (0.049)	-0.013 (0.049)
$slavetrades_e$						0.032 (0.028)
Observations	35,595	35,595	19,901	8,628	24,225	24,225
R-squared	0.112	0.111	0.111	0.087	0.106	0.106
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
Region controls	Yes	Yes	Yes	Yes	Yes	Yes
Country-survey FE	Yes	Yes	Yes	Yes	Yes	Yes

*Note:*  $vote_{iec}$  is a binary variable equal to 1 if a woman voted in the most recent election, 0 if not.  $atlantictrade_e$  is the number of slaves exported during the transatlantic slave trade normalised by the historic land area of that ethnic region.  $indianoceantrade_e$  is the number of slaves exported during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.  $patrilineal_e$  is a binary variable equal to 1 if the ethnic group is a patrilineal kinship, 0 if otherwise. Individual controls include age, age-squared, whether an individual resides in an urban area, completed primary and secondary school, are Christian or Muslim, and fear political violence during election campaigns. Region controls include soil suitability for agriculture, the presence of large domesticated animals, malaria, a city in 1400, and distance to national border from the centroid of an individual's ethnic-country region. Standard errors in parentheses clustered by ethnic region and country level. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Focussing again on individuals from slave trade affected regions only, we estimate equation 1 in Table A.4 column 5 to check whether our results are robust when excluding individuals from ethnic regions not exposed to the slave trades. We additionally control for ethnic regions that experienced both slave trades in column 6. The variable  $slavetrades_e$  is a binary variable equal to 1 if the ethnic region experienced both the transatlantic and Indian Ocean slave trade, 0 if only one. Results support findings from Table 3.

## A.5 Additional Control Variables

In Table A.5 we control for additional historical ethnic-country region factors that are often cited as important factors in determining contemporary outcomes.

Table A.5: Additional Control Variables Results

	Dependent Variable: $vote_{iec}$						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$atlantictrade_e$	0.015** (0.007)	0.011 (0.007)	0.011 (0.007)	0.015** (0.007)	0.015** (0.007)	0.016** (0.007)	0.015** (0.007)
$patrilineal_e$	-0.004 (0.010)	-0.005 (0.010)	-0.006 (0.010)	-0.004 (0.010)	-0.003 (0.010)	-0.002 (0.010)	-0.000 (0.010)
$atlantictrade_e * patrilineal_e$	-0.022*** (0.008)	-0.021*** (0.008)	-0.021*** (0.008)	-0.023*** (0.008)	-0.024*** (0.008)	-0.025*** (0.008)	-0.024*** (0.008)
$indianoceantrade_e$	0.003 (0.009)	0.005 (0.008)	0.004 (0.009)	0.016 (0.012)	0.016 (0.012)	0.016 (0.012)	0.020 (0.014)
$indianoceantrade_e * patrilineal_e$	-0.034 (0.048)	-0.039 (0.047)	-0.045 (0.049)	-0.052 (0.042)	-0.058 (0.042)	-0.061 (0.043)	-0.061 (0.043)
Observations	35,595	35,595	35,595	35,595	35,595	35,595	35,595
R-squared	0.112	0.112	0.112	0.112	0.112	0.112	0.112
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hunter-gatherer	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Population		Yes	Yes	Yes	Yes	Yes	Yes
Conflict distance			Yes	Yes	Yes	Yes	Yes
Elevation				Yes	Yes	Yes	Yes
Lakes					Yes	Yes	Yes
Colonial railways						Yes	Yes
Missions							Yes
Country-survey FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Note:*  $vote_{iec}$  is a binary variable equal to 1 if a woman voted in the most recent election, 0 if not.  $atlantictrade_e$  is the number of slaves exported during the transatlantic slave trade normalised by the historic land area of that ethnic region.  $indianoceantrade_e$  is the number of slaves exported during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.  $patrilineal_e$  is a binary variable equal to 1 if the ethnic group is a patrilineal kinship, 0 if otherwise. Individual controls include age, age-squared, whether an individual resides in an urban area, completed primary and secondary school, are Christian or Muslim, and fear political violence during election campaigns. Region controls include soil suitability for agriculture, the presence of large domesticated animals, malaria, a city in 1400, and distance to national border from the centroid of an individual's ethnic-country region. Standard errors in parentheses clustered by ethnic region and country level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

We progressively add variables controlling for ethnic regions being hunter-gatherer societies, ethnic-country region population size in 1960, distance to pre-colonial conflict areas, mean elevation, the presence of lakes, and European influences such as the presence of colonial railways and the number of missionary stations per square kilometre of an historic ethnic region's land area.<sup>11</sup> Results remain stable and are in line with main findings.

<sup>11</sup>Additional ethnic-country region control data is obtained from Michalopoulos and Papaioannou (2013). Missionary data is obtained from Roome (1925), digitised by Nunn (2010).

## A.6 Alternative Standard Error and Model Estimations

As an additional robustness check, we re-estimate equation 1 using different standard errors in columns 1 and 2. In column 1, we compute Conley (1999) spatial standard errors for a window of 100 kilometres, to further account for potential spatial correlation across ethnic regions. Coefficient estimates with respect to transatlantic slave trade exposure in patrilineal ethnic regions remain negative and statistically significant. In column 2, we cluster standard errors by ethnic region to account for correlation within ethnicities, as slave trade intensity measurements are constant by ethnic region level. Results are in line with those reported in Table 3 column 6.

Table A.6: Alternative Estimations Results

	Dependent Variable: $vote_{iec}$			
	Standard Errors			
	Conley s.e. (1)	Ethnic Region s.e. (2)	Logistic model (3)	Lewbel IV (4)
$atlantictrade_e$	0.012 (0.008)	0.015** (0.007)	0.090* (0.050)	0.014* (0.007)
$patrilineal_e$	-0.005 (0.010)	-0.004 (0.010)	-0.032 (0.067)	-0.005 (0.010)
$atlantictrade_e * patrilineal_e$	-0.018** (0.008)	-0.022*** (0.008)	-0.163*** (0.055)	-0.022*** (0.008)
$indianoceantrade_e$	0.004 (0.008)	0.003 (0.008)	0.031 (0.068)	0.002 (0.009)
$indianoceantrade_e * patrilineal_e$	-0.017 (0.053)	-0.034 (0.046)	-0.401 (0.368)	-0.029 (0.036)
Observations	35,595	35,595	35,595	35,595
R-squared	0.044	0.112		0.046
Individual controls	Yes	Yes	Yes	Yes
Region controls	Yes	Yes	Yes	Yes
Country-survey FE	Yes	Yes	Yes	Yes

*Note:*  $vote_{iec}$  is a binary variable equal to 1 if a woman voted in the most recent election, 0 if not.  $atlantictrade_e$  is the number of slaves exported during the transatlantic slave trade normalised by the historic land area of that ethnic region.  $indianoceantrade_e$  is the number of slaves exported during the Indian Ocean slave trade normalised by the historic land area of that ethnic region.  $patrilineal_e$  is a binary variable equal to 1 if the ethnic group is a patrilineal kinship, 0 if otherwise. Individual controls include age, age-squared, whether an individual resides in an urban area, completed primary and secondary school, are Christian or Muslim, and fear political violence during election campaigns. Region controls include soil suitability for agriculture, the presence of large domesticated animals, malaria, a city in 1400, and distance to national border from the centroid of an individual's ethnic-country region.

In column 3, we estimate a logistic regression result instead of a linear probability model.<sup>12</sup> Again, results suggest that a woman's ethnic region exposure to the transatlantic slave trade is positively associated with her likelihood to vote in non-patrilineal ethnic regions, and negatively in patrilineal ethnic regions. For women in non-patrilineal ethnic regions, a doubling of historic slave trade intensity is associated with an increase in the odds of voting by approximately 9.4

<sup>12</sup>Robust standard errors are clustered by ethnic region level.

per cent and a decrease by approximately 7.0 per cent for women in patrilineal ethnic regions.

Our results thus far have not indicated a causal relationship between the slave trades and women political participation. Although we are not concerned about economic endogeneity, we acknowledge that our results may suffer from omitted variable bias as noted in the slave trade literate.<sup>13</sup> To account for unobserved factors, we additionally estimate an instrumental variable (IV) regression model in column 4. We use Lewbel (2012) IV regression model approach, which offers heteroskedasticity-based instruments. The model constructs instruments as a function of our data without the need for an external instrument (Baum & Schaffer, 2012). This model yields similar results to the linear probability model reported in Table 3.

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<sup>13</sup>To test for endogeneity we use the Variation Addition Test (VAT) approach as suggested by Lin and Wooldridge (2019). Slave trade residual coefficients are not statistically significant on a 5 per cent level of significance and we therefore fail to reject exogeneity. Nevertheless, we cannot completely exclude the potential of endogeneity from other sources. Results are available on request.