Female Genital Cutting and the Slave Trade

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Abstract

This paper investigates the historical origin of female genital cutting (FGC). Our hypothesis, substantiated by historical sources, is that FGC was connected to the Red Sea route of the slave trade, where women were sold as concubines in the Middle East and infibulation was used to ensure chastity. We next conjecture that the differential exposure of ethnic groups to the Red Sea route determined differential adoption of the practice, which later evolved into a marker for ethnic identity. We combine individual level data from all Demographic and Health Surveys and Multiple Indicator Cluster Surveys from Africa with historical data on slaves by country, ethnic group and trade routes from 1400 to 1900 and find that women belonging to ethnic groups whose ancestors were traded in the Red Sea route are more likely to be infibulated and circumcised today.

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1 Introduction

Social norms are an essential part of life in many developing countries and economists have long studied their relevance for economic development (e.g., Platteau 2000). A substantial body of literature has investigated the *benefits* of social norms and informal institutions as a way to cope with missing or incomplete credit markets, for example, by supporting informal lending or collective provision of public goods (e.g., Fafchamps 1992; Greif 1993; Udry 1994; Besley and Coate 1993; La Ferrara 2003; Gugerty, 2007; Karlan, 2007 among others). Another literature has recently emerged on the *dark side* of social norms: inefficient behaviors due to pressure for risk sharing and solidarity (Baland, Guirkinger and Mali 2011; Jakiela and Ozier 2016) and harmful gender norms, such as child marriage and dowry, particularly detrimental for women's well-being (Field and Ambrus 2008; Corno, Hildebrandt and Voena 2020; Anderson and Bidner 2015; Bhalotra, Chakravarti and Gulesci 2018).

This paper focuses on an extremely harmful norm, female genital cutting (FGC). Female genital cutting comprises all the procedures involving partial or total removal of the external female genitalia or other injury to the female genital organs. It is classified by the World Health Organization in three different types: i) Type 1 (or clitoridectomy) is the partial or total removal of the clitoris; ii) Type 2 (or excision): is the partial or total removal of the clitoris and the inner labia with or without excision of the outer labia; iii) Type 3 (or infibulation) is the removal of the inner and outer labia and closure of the vulva, with or without the removal of the clitoris. UNICEF (2019) estimates that more than 200 million women are cut worldwide. The custom is present in 30 African and Middle Eastern countries with high variation in its prevalence. In some areas, FGC is almost universal: cut women are 98% in Somalia, 96% in Guinea, 93% in Djibouti and 91% in Egypt and Sierra Leone but are less than 2% in Uganda, Cameroon and Niger.[1] Unlike male circumcision, which at least curbs the transmission of HIV, FGC brings no medical benefit whatsoever and is a harmful practice under several dimensions. First, it leads to serious health

[1] Among the 28 African countries for which data on female genital cutting are available, 23 of them have legislation or decrees against the practice (Benin, Burkina Faso, Central African Republic, Chad, Cote D'Ivoire, Djibouti, Egypt, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Mauritania, Niger, 13 states in Nigeria, Senegal, 4 states in Sudan, Swaziland, Tanzania, Togo, Uganda) while in 5 the practice is till legal (Cameroon, Mali, Malawi, Sierra Leone, Somalia).

effects, both at the moment of cutting (e.g., hemorrhage, infection and septic shock - from the use of shared, non-sterile equipment - and increased mortality) and in the long run (e.g., obstetric and birth-related complications, sexually transmitted infections) (Jones et al. 1999; Banks et al., 2006; Wagner, 2015). Second, it impacts girls' educational achievement through a loss in the days of schooling and through its association with early marriages (Wagner, 2015). Third, literature in psychology highlights consequences related to mental health and post traumatic stress disorders, due to the often forceful performance of the procedure against the will of the girl or woman (Diane, 2010; Mulongo et al., 2014). Finally, given that FGC is generally performed on young girls without their consent, it is conceived as a human rights violation (Mackie, 1996) and its elimination is now part of the Sustainable Development Goal 2015-2020.

While previous studies mainly focus on investigating the economic and social consequences of female genital cutting, we know remarkably little on its origins and the reasons behind its persistence.

This paper aims at answering two main research questions: i) How did FGC originate and why does it persist (with different intensity across countries)? ii) Can current differences in FGC prevalence be traced back to the origins of the slave trade? Investigating the historical origins of female genital cutting can help us understand why the practice persists today and possibly design new policies capable of eradicating it.

Our hypothesis, substantiated by historical sources (Dos Santos, 1609; Brown 1799; Burckhardt 1819) is that FGC was connected to the Red Sea route of the slave trade, where women were sold as concubines in the Middle East and infibulation was used to ensure chastity and avoid pregnancies. Infibulated slaves women had indeed a higher price on the slave market "for their chastity, and for better confidence which their owner put in them" (Dos Santos, 1609). We next conjecture that the differential exposure of ethnic groups to the Red Sea route determined differential adoption of the practice, which later evolved into a marker for ethnic identity. We combine individual level data from all the Demographic and Health Surveys (DHS) in Africa eliciting information on FGC with historical data on slavery by country, ethnic group and trade route to estimate the effect of exposure to the Red Sea slave route on contemporary FGC prevalence.

The paper is linked to three main strands of the literature. A first (small) group of previous studies attempted to provide theories behind the persistence of the practice. The first hypothesis builds on the theory of coordination failures in people's beliefs related to marriageability (Mackie, 1996; Mackie and LeJeune 2009): individuals put a significant weight on the opinions of "others" in their community, but it is unclear whether these beliefs accurately reflect their true preferences (Gele et al., 2015). Social psychologists describe as 'pluralistic ignorance' a setting in which individuals privately want to change their behaviour, but mistakenly think that the majority of the other community members prefer to keep the existing one (Prentice and Miller, 1993; Bursztyn, González, Yanagizawa-Drott 2020). Based on this theory, a critical threshold exists such that if the share of families who are expected to cut their daughters (and demand cut wives for their sons) is above this threshold, all families have an incentive to abide by the norm. If the share is below this threshold, the probability of finding a groom without cutting is high enough that nobody will want to bear the cost of cutting. If the coordination failure hypothesis is correct, policymakers should invest in persuading a critical mass of families to abandon FGC, so that the share of cutting families moves below the threshold. Historically, it seems that this approach successfully contributed to ending foot binding in China and has led many NGOs to promote programs where villagers engage in public declarations not to cut their daughters. Recent studies however challenge this explanation. From an empirical perspective, Efferson et al. (2015) using data from Senegal argue that, if the coordination hypothesis holds, cutting rates should be either very high or very low within each community. On the contrary, they find a smooth distribution of cutting rates and no evidence of discontinuity around a threshold. Bellemare et al. (2015) study the persistence of FGC - proxied by whether survey respondents are in favor of the practice continuing - in West Africa and suggest that individual and household-level factors contribute to a larger share of the practice's persistence than do community-level factors. From a theoretical point of view, Novak (2017) proposed a framework in which agents' preference ordering of the two alternatives - cutting or not cutting a girl - depends on the behaviors of others in the community. She finds that households within a community have heterogenous preferences for FGC and that this heterogeneity makes the existence of a critical threshold in the rate of FGC far from guaranteed.

On the same line, Platteau et al. (2017) argue that the distribution of household preferences has a large influence on the effectiveness of policies aimed at reducing FGC incidence.

Another body of research focuses on the theory that men value cut women more on the marriage market because it is a signal of sexual fidelity (Gruenbaum, 2001). Chesnokova and Vaithianathan (2010) model FGC as a pre-marital investment, and Wagner (2015) uses Demographic and Health Survey (DHS) data from 13 countries to show significant differences in marriage between cut and uncut girls: the odds of marrying are almost 40% higher for cut girls. Finally, alternative explanations view FGC as part of a group's cultural or religious identity. Such arguments have been studied in the anthropological literature (Hernlund, 2000), but a quantitative assessment of their importance is missing, despite the fact that economists now understand identity as an important component of individual utility (Akerlof and Kranton, 2000). By understanding the extent to which contemporary prevalence of FGC is related to historical patterns in the slave trade, we shed light on the relative importance of historical factors that shaped cultural traditions versus general coordination problems, thus informing future policy design.

Beside the theories on the persistence of FGC, our project is also linked to the growing empirical literature on the effect of history on economic development (Fenske and Kala (2015); Edlund and Ku (2013)). Nunn (2008) examines the long-term impact of Africa's slave trade, showing that the Transatlantic slave trade had a significant negative effect on Africa's economic development. Nunn and Wantchekon (2011) investigate whether the slave trade caused a culture of mistrust within Africa. More recently, Teso (2017) test the correlation between slavery and current female labor force participation. Finally, Becker (2018) attempts to link history to son preferences and infibulation, testing the theory that pre-industrial subsistence of pastoralism, characterized by often extended periods of male absenteeism, generated larger payoffs to controlling female sexuality.

Finally, the paper is also linked to the literature investigating historical origins of existing cross-cultural differences in beliefs and values regarding the appropriate role of women in society. Alesina, Giuliano, Nunn (2013) test the hypothesis that traditional agricultural practices influenced the historical gender division of labor and the evolution of gender norms. They find that the descendants of societies that traditionally practiced plough agriculture today have less equal gender

norms, measured using reported gender-role attitudes and female participation in the workplace, politics, and entrepreneurial activities.

The remainder of the paper proceeds as follows. Section 2 provides background information on slave trade and infibulation. Section 3 describes the data used in the analysis, and section 4 explains the empirical strategy. Section 5 shows the main empirical results and section 6 concludes.

2 Historical Background

African Slave Trade

For a period of nearly 500 years, between 1400 and 1900, about 18 million slaves were exported from Africa. Compared to previous slave trade, the number of slave exports from Africa was massive and unprecedented. Patrick Manning (1990) estimates that Africa's population in 1850 was half of what it would have been in the absence of slavery. Africa's slave trades were also unique because individuals of the same ethnicities enslaved one another. This had particularly detrimental consequences, including social and ethnic fragmentation, political instability and a weakening of states (Nunn, 2008). The slave trade was organized along four main slave routes: i) the largest and probably the most well-known was the *Trans-Atlantic route*, where approximately 12 million slaves were taken from West Africa and West-Central Africa and shipped to the European colonies in the New World (e.g. North and South America); approximately 6 million where exported via the other three slave routes ii) the *Red Sea route*, where slaves were taken from the inland of the Red Sea and shipped to the Middle East (Arabia, Persian Gulf); iii) the *Trans-Saharan route*, where slaves were taken from the south of the Saharan desert, travelled across the Saharan desert and reached Northern Africa (Egypt, Morocco, Algeria, Libya); and iv) the *Indian Ocean route* where slaves were taken from Eastern Africa and shipped to both the islands in the Indian Ocean (mainly, Reunion, Mauritius and Madagascar) (Mowafi, 1981; Lovejoy, 1989) and to the Arabian Peninsula.

Figure 1 shows the four slave trade routes, displaying with green arrows the Trans-Atlantic route, with orange arrows the Trans-Saharan route and with red and blue arrows the Red Sea and the Indian Ocean routes, respectively.

[Insert figure 1]

The diverse geographical destinations of slaves along the four different routes have generated a variation in the type of slaves demanded by each destination place. The main destinations of the slaves in the Trans-Atlantic slave trade were the cotton plantations in the New World. Given the physical strength necessary to perform work in the plantations, European traders had a preference for male slaves. Estimates by Lovejoy (1989) suggests that the ratio of male-to-female slaves during the Trans-Atlantic slave trade was about 181:100 between the seventeenth and the end of the nineteenth century. The Trans-Atlantic slave trade route overlapped to the Trans-Saharan trade route to a considerable extent after the eighteenth century (Lovejoy, 1989). On the contrary, slaves traded along the Red Sea route were mainly women - with a male-to-female ratio of 100:200 (Segal, 2001) - given the role they had as concubines and domestic servants in the Oriental Harems in the Middle East (Harris, 1971): a part of them served in the Master's harem for sexual purposes while another part helped in the daily management of the house (cookers, cleaners, dressers etc.). The Indian Ocean trade was somewhat more complex. In the 1600 and early 1700, slave exports were essentially an extension of the trade across the Red Sea and Sahara. In the eighteenth century, however, new currents affected this maritime trade. Slaves were taken to the Dutch settlement in Cape Town and the French established plantations on the Mascarene Islands in the Indian Ocean. Europeans were trying to establish a plantation economy based on the American model in the Indian Ocean. The Indian Ocean route was the one with the lowest number of slaves (slaves in the Atlantic route were 154 times as many as in the Indian route between 1400 and 1900).

Slavery recruitment could have happened in many different ways. Some slaves were kidnapped by organized raids and some taken as prisoners in the wars between rival clans, but most were bought as children from parents who sold them with the intention of bettering their condition (Mowafi, 1981). After recruitment, slaves were brought to the so called "captive zones" where they were inspected and prepared to be shipped to their final destinations (see Figure 1 with the captive zones and the main cities/ports of departure). For instance, male slaves destined to serve as eunuchus in Oriental harems underwent castrations in these trading stations (Mowafi, 1981; Lovejoy, 1989).

The origins of infibulation

The practice of infibulation seems to have very ancient roots although the exact origin and the motive behind it are still unkown and little documented. Infibulation appears to have been practiced by both the ancient Egyptians and tribes in the Arabian peninsula (in the pre-Islamic period) (Ghalioungui 1963; Levy, 1962).

The earliest evidence of female infibulation is in a Greek papyri in the British Museum from the II century BC indicating that a certain Haramais of Sarapeum (Alexandria, Egypt) "*gave money to the mother of a girl for dowry and the usual ceremony of circumcision*" (Kenyon, 1893).[2] 200 years later, Strabo, a Greek geographer and historian, reported excision on Egyptian girls, after visited Egypt in 25 BC saying that Koloboi group (which means mutilated), located in the West coast of the Red Sea, are people that "*mutilated the sexual glands and excised their women in the Jewish manner*" (Widstrand, 1964, Knight, 2001). During the same period, Philo of Alexandria, a Jewish philosopher who lived in Alexandria (20 BC-50 AD), also made reference to it as follows: "*the Egyptians by the custom of their country circumcise the marriageable youth and maid in the fourteenth (year) of their age, when the male begins to get seed, and the female to have a menstrual flow.*" Later, it is mentioned briefly in a work attributed to the Greek physician Galen (129 - 200 AD): "*When [the clitoris] sticks out to a great extent in their young women, Egyptians consider it appropriate to cut it out.*"

In some countries (e.g. Sudan) infibulation is stukk called "Pharaonic circumcision", as additional anecdotal evidence that the practice might have been originated in Egypt. During the Pharaonic era, the Egyptians believed in gods having bisexual features. Boyle (2002) recounts that these features were believed to reflect upon the mortals, with women's clitoris representing the masculine soul and men's prepuce that of the feminine soul. Thus, infibulation was considered to be a marker of womanhood and a way to detach from her masculine soul.

For the first time in the 15th and 16th centuries, a Venetian historian, Pietro Bembo, secretary to Pope Leo X, in a posthumous history published in the middle of the 16th century on the basis

[2]The examination of mummies has shown no evidence of FGC. Referrring to the pathologist Grafton Elliot Smith, who examined hundreds of mummies in the early 20th century, Knight (2001) argues that genital area may resemble Type III because during mummification the skin of the outer labia was pulled toward the anus to cover the pudendal cleft, possibly to prevent sexual violation.

of the accounts of travellers to the Red Sea, stated *"The private parts of the girls are sewn together immediately after their birth*" since "*an indubitable virginity at the marriage is held in such a high esteem*" (Bembo, 1551).

[Insert figure 2]

Ethnographic studies show cases of infibulation around the contiguous areas of the Red Sea coast among nomadic population. Seligman (1913), a British physician and ethnologist, points out that it arose in the Hamito-Semitic area in the neighborhood of the Red Sea, as reported in Figure 2 (a). Further evidence on the historical location of infibulation comes from Widstrand (1964), who pooled together all the early travelers' accounts and elaborated a map, showing the spatial distribution of historical sources attesting the presence of infibulation within Africa. Again, infibulation is mainly distributed in North East African, with extensions along the Nile valley and the caravan routes westward

Infibulation and Slavery

A detailed analysis of historical studies suggests a correlation between women's slavery and infibulation. According to historical descriptions by early travelers, infibulated slave women had a higher price on the market because infibulation was thought to ensure chastity and loyalty to the owner and prevent undesired pregnancies (Browne, 1799; Larrey, 1803; Burckhardt, 1819; Cailliaud, 1826; Russenegger, 1843). In 1609, Joao Dos Santos, a Portuguese missionary, reported that "*a group from Mogadishu (Somalia) has a custom to sew up their women, especially their slaves being young to make them unable to conception, which makes these slaves more valuable in the market both for their chastity, and for better confidence which their owner put in them*" (Dos Santos, 1609). Thus, Mackie (1996) argues that *"a practice associated with shameful female slavery came to stand for honor".*

Johann Ludwig Burckhardt, a Swiss traveller and geographer, wrote that "infibulated girls ('virgins') received a higher price on the Egyptian slave market than non-infibulated ones". Again, Russegger (1843) writes that "infibulation was done to slave women to keep them virginal prior to selling them in the destination places and Larrey (1803) indicates that the Turks infibulated female slaves prior to their sales. And finally, Lightfoot-Klein (1989) writes that "infibulation appears to

have been reserved for slave girls, who were transported from Sudan and Nubia, (...) to prevent their getting pregnant. An infibulated virgin fetched a far higher price on the slave market»

Given the historical geographic distribution of infibulation and its role during slavery, more recent studies by anthropologists and political scientists have hypothesized an association between infibulation and the Red Sea slave trade route, because slave women traded along the Red Sea route were used as concubines and domestic servants in the Oriental Harem in the Arabic Peninsula (Mackie, 1996; De Meo, 1997). Mackie (1996) claims that "the geographic distribution of FGC suggests that it originated on the western coast of the Red Sea, where infibulation is most intense, diminishing to clitoridectomy in westward and southward radiation. Whatever the earliest origins of female genital circumcision, there is certainly an association between infibulation and slavery". De Meo (1986) argues that "girls were once infibulated to ensure their virginity when presented for the Near Eastern harem slave trade. The regions that today practice infibulation were once primary "capture zones" in the Turk and Arab slave trade for young African girls and boys. This fact suggests that some severe forms of genital mutilation may have originated with, or were at the very least intensified by, the institutions of slavery and the harem system".

3 Data sources and description

Data on Female Genital Cutting (FGC). Data on the female genital cutting comes from the Demographic and Health Survey (DHS) and the Multiple Indicator Cluster Surveys (MICS). DHS are nationally-representative, individual-level surveys carried out in several developing countries around the world. We assembled all the publicly-available DHS between 1994 and 2018 in Africa, eliciting information on female genital cutting and respondents' ethnic group. The latter information is important to merge DHS data with historical data on slavery. Across all the surveys, the information on female genital cutting is collected retrospectively during the woman's interview: women are asked: i) In some countries, there is a practice in which a girl may have part of her genitals cut. Have you ever heard about this practice? ii) Have you yourself ever been circumcised? In most of the countries in our sample, DHS also elicit information on the type of circumcision that has been performed by asking: Now I would like to ask you what was done to you at that time:

i) Was any flesh removed from the genital area (type 1-2)?; ii) Was your genital area sewn closed (type 3 circumcision or infibulation)?". [3] For some countries, information on respondents' ethnic group (Egypt, Swaziland) or on FGC (Djibouti, Guinea-Bissau, Mauritania, Somalia and Sudan) was not recorded in the DHS. We therefore completed our sample using all the available data from the Multiple Indicator Cluster Surveys (MICS), a nationally-representative dataset collected by UNICEF and, as the DHS, eliciting information on FGC and respondent's ethnicity for a subset of countries.[4] Note that the definition of the types of circumcision in the DHS and MICS is different from the WHO's classification.

Figure 3 shows variation in infibulation (type 3) and circumcision (type 2) among the countries in our sample.

[Insert figure 3]

Table 1 reports the fraction of circumcised and infibulated women by country and the average age.

[Insert Table 1]

Data on slave exports and slaves' ethnicity

Trans-Atlantic, Indian Ocean and Trans-Saharan Slave Trade. Data on the total number of slaves taken from each African ethnic group are from Nunn (2008) and cover reliable estimates for the Trans-Atlantic, the Indian Ocean and the Trans-Saharan slave trades. Nunn (2008) assembled data on the total number of slaves exported from ports of each costal country in Africa between 1400 and 1900 using many different sources of documents, records and accounts by observers and government officials collected across library archives in Europe, Middle East and Africa. For the Trans-Atlantic slave trade, data are mainly from the *Trans-Atlantic Slave Trade Database*

[3] The DHS includes another question among the list of questions related to FGC: "Was the genital area just nicked without removing any flesh?" that we do not consider. Furthermore, in the DHS it is not possible to distinguished between type 1 and type 2 circumcision as specified by the World Health Organization. In what follow we will therefore consider two definitions: i) circumcision as the partial or total removal of the clitoris and eventually partial or total removal of the clitoris and the inner labia with or without excision of the outer labia and ii) infibulation as removal of the inner and outer labia and closure of the vulva, with or without the removal of the clitoris

[4] The questions related to female genital cutting asked in the MICS are identical to the ones used in the DHS.

constructed by Eltis et al. (1999) and Elbl (1997). For the Indian Ocean and Trans-Saharan slave trades, data are from Austen (1979, 1988, 1992).

Historical sources from the countries of destination such as records of sales, slave registers, court and church records and notarial documents have been recorded to obtain slaves' ethnicity for the Trans-Atlantic, Indian Ocean and the sub-Saharan route.[5]

Data on the Trans-Atlantic and Indian Ocean slave trade have been used and documented in a number of different papers: Nunn (2008), Nunn and Wantchekon (2011), Teso (2017) and Becker (2019).

Red-Sea Slave Trade. While Nunn (2008) draws from a wide array of different sources and has large samples available for these routes, the sample of slaves for the Red Sea route is substantially smaller. A sufficient sample size for the Red Sea slave trade is vital for this paper because it is the one with greatest exposure to the usage of slaves as concubines. As for the previous routes, data on the total number of slaves exports across the Red Sea route between 1400 and 1900 come from Austen (1979, 1988, 1992). Beside estimating the total volume of slaves, Austen (1988) describes in details the route of the Red Sea slave trade from the origin to the destination countries: slaves were mainly taken from Sawakin (Sudan), Zayla (Somalia), Tajura (Gibuti), and Massawa (Eritrea), and shipped to the Arabian Peninsula and Middle East, mainly in Hijaz in western Arabia, in Yemen and in the Arabian/Persian Gulf, with re-exports mainly to Egypt, Anatolia and the Levant. Starting from these pieces of information and following the procedure embraced by Nunn (2008) and Harris (1971), we started searching for manumission acts in each port of origin. One of the most relevant data sources we managed to find is "From Bondage to Freedom on the Red Sea Coast: Manumitted Slaves in Egyptian Massawa, 1873 - 1885" by Jonathan Miran. Indeed, Miran studied 239 manumission acts registered in the Massawa Islamic Court Records and he provided unique ethnic information on slaves who might have been captured before their shipment across the Red Sea. For 85% of the slaves freed, Miran was able to retrieve the individual's ethnicity or geographic provenance. Furthermore, we looked at information available for the Arabian peninsula and its destination ports of the slave trade routes and came across another particularly useful source of information: "Slavery in the Gulf in the First Half of the 20th Century" by Jerzy Zdanowski

[5]Details on the construction procedure and sources used are provided in Nunn (2008).

(2008). Zdanowski listed several statements, either applications or acts of manumission, recorded at British Agencies, Consulates and Residencies in Arabia. Between 1906 and 1949 altogether 949 statements were made by slaves. We added these two sources of data to Harris (1971) and League of Nations (1936, 1937) already recoded by Nunn (2008) and checked all sources against each other to exclude the possibility of double counting of slaves. Starting from the Red Sea data provided by Nunn and combining them with these new two sources, we have been able to create a sample of 317 slaves, accounting for 49 ethnicities (see table A2 in the appendix). Following the procedure implemented by Nunn (2008), to compute the number of slaves for each ethnic group, we first calculate the share of each ethnic group in the total Red Sea slave trade (assumed to be time constant across time periods) and multiplied these shares by the total number of slaves in the Red Sea route, assembled by Austen (1988). With this computation we obtain the total number of slaves by ethnic groups and across slave routes. We than divided the total number of slaves by the land area inhabited by the ethnic group.

Data on ancestors' characteristics

Finally, historical characteristics of each ethnic group come from the Ethnographic Atlas, a worldwide ethnicity level database assembled by George Peter Murdock (Murdock, 1964) collecting ethnographic information for 1,265 ethnic groups and containing over one hundred ethnographic variables taken from societies prior to industrialization. We construct five indicators capturing ancestors' propensity to practicing FGC and the historical level of prosperity of the ethic group, which may be indirectly correlated with FGC. First, given the potential high correlation between female genital cutting and male circumcision, we identify whether male circumcision was historically a common practice for the ethnic group. Second, we construct an indicator capturing the ethnic group's dependence on herding animals/pastoralism. The Ethnographic Atlas contains information on the degree to which a society depends on animal husbandry, measured on a 10-point scale, and on the predominant animal in a society. Following Becker (2019), we generate an indicator that takes value 1 if the predominant type of animal is a herding animal (e.g. sheep, goats, donkeys, horses, reindeer, cattle, or camels/camelids), and 0 if it is an animal that is not herded (e.g., pigs, bees, dogs, poultry, or guinea pigs) and multiply this indicator with an indicator for

the dependence on animal husbandry to get the measure of historical dependence on pastoralism. Third, we construct a variable capturing restrictive norms on premarital sexual behavior of girls. These norms include early marriages, insistence on virginity, sexual relationship before marriage prohibited or weakly censured. Fourth, we take into account any past form of slavery by constructing a variable equal to one if the ethnic group was exposed to the presence of slavery. This variable would for instance capture if the ethnic group was involved in slavery in Ancient Egypt, so well before the massive African slave trade. Finally, we include an indicator variable that quantifies the initial level of prosperity of the ethnic group, namely an indicator for precolonial settlement patterns, ranging from fully nomadic to complex settlements.

Matching historical and contemporaneous data

In order to test the effect of slave trade across different slave routes and of historical ancestors' characteristics on current prevalence of FGC, we did a very detailed and scrupulous work of matching historical ethnic groups in the Ethnographic Atlas with the ethnic groups reported in the DHS or in the MICS. The easiest case is the one in which the name of the ethnicity in the DHS/MICS is exactly the same as the one used by Murdock. However, the name of the ethnic groups in the contemporaneous and historical datasets do not always coincide. In order to reconcile the ethnic affiliation in the DHS/MICS with the one in the slave datasets, we consider several possible methods following Alesina, Brioschi, La Ferrara (2016). When direct matching is impossible, we use the dataset constructed by Nunn and Wantchekon (2011), which provides a concordance between the ethnicities in the Afrobarometer, a research network that conducts surveys in more than 35 countries in Africa, and those in the Murdock Atlas, on which the slave trade data are based. For example, the DHS ethnicity "*Adja*" of Benin is included in Nunn and Wantchekon's (2011) ethnic group's correspondence as "*Fon*" which was appearing among one of ethnicity in the DHS, suggesting that "Adja" is a sub-group of "Fon". The third method relies on the book "Africa: its peoples and their culture history" written by Murdock (1959) before the construction of the Atlas. For example, let's consider the ethnic group of *Boulala* living in Chad (as reported in the DHS). By looking at Murdock's book, we found that Boulala was part of the biggest group of Lisi as follows "*Lisi, embracing the Bulala (Boulala, Maga), Kuka*

(Kouka), Midogo (Medogo, Mudogo) and Semen (Abu Semen). These peoples, who are also found in Kanem, are Central Sudanic in speech, indifferent Moslems in religion and considerably mixed with Caucasoid elements". We therefore matched the contemporaneous ethnic group of Boulala with the historical group of Lisi. The last method uses data on alternative ethnicity names from the Joshua Project, a research initiative constantly updating the location of ethnic people groups around the world.

For countries for which the information on ethnicity was not available neither in the DHS nor in the MICS (Egypt, Somalia, Sudan and Swaziland), we use instead information on respondent's region of residence and exploit the Joshua Project to match regions to ethnic groups. For each country and region, the Joshua Project website provides information on the current ethnic groups living there. We matched contemporaneous ethnic groups in Joshua Project with the respective historical ethnic groups in Murdock (1959) and associated to each respondent the average number of slaves across the ethnic groups (if more than one) in his/her region of residence. Where more than one ethnicity was recorded for each region, we took the most representative.

We were able to match 244 ethnic groups out of the 298 originally listed in the DHS.

Our sample

We end up with a final sample of 28 countries and around 200,000 women born between 1942 and 2002. The list of African countries and survey waves included in the analysis is reported in the Appendix table A1. Given that the number of survey waves varies for each countries, in the following analysis we will consider the last available wave, to avoid giving more weight to countries with a higher number of waves.

4 Empirical Strategy

We exploit heterogeneity across African slave trade routes to test whether ethnic groups historically more exposed to the Red Sea route are more likely to have a higher incidence of FGC (infibulation and circumcision) today compared to groups exposed to the other routes.

We estimate the following OLS model:

$$FGC_{iec} = \alpha + \beta_1 RedSea_e + \beta_2 TransSaharan_e + \beta_3 TransAtlantic_e + \beta_4 Indian_e + \gamma X_{iec} + \delta_c + \epsilon_{iec} \quad (1)$$

where i denotes individuals, e ethnic groups and c countries. FGC takes value 1 if the (female) respondent is infibulated or circumcised (as self-reported in the DHS) and 0 otherwise; $RedSea_e$, $TransSaharan_e$, $TransAtlantic_e$ and $Indian_e$ measure the intensity of slave trade across different slave routes and denote the number of slaves taken from ethnic group e and shipped through the Rea Sea, Trans-Saharan, Trans-Atlantic and Indian route. We normalized slave exports by the area of land inhabited by the ethnic group e during the nineteenth century. Land area, which is used to calculate is measured in square kilometers, and is from Murdock (1964). By dividing the number of slave exports by land area, we take into account differences in the size of ethnic group. Ideally, we would prefer to use a measure of slave exports that is normalized by the population of each ethnic group but unfortunately these data are unavailable. Some historical population data are available from Murdock (1959), but they are from the colonial period (approximately the early twentieth century) after the end of the slave trade, and they exist for only about 85 percent of the ethnicities in the sample. X_{iec} are individual contemporaneous controls (age, age squared, an indicator for being Muslim, a dummy variable for the respondent's educational attainment: primary, secondary and higher level of schooling and a dummy for urban area), δ_c are country fixed effects. Our coefficients of interest are β_1, β_2, β_3, and β_4 and if our conjecture is correct, we should expect $\beta_1 > 0$ maybe $\beta_4 > 0$ (given that some of the slaves in the Indian route were going to the Middle East) but not any prior conjectures on β_2 and β_3. Given the potential for within-ethnicity correlation of the residuals, we adjust standard errors for potential clustering at the ethnic group level.

Including all the four slave routes in the same specification is particularly useful to partially mitigate concerns of endogeneity of the slave exports variables: indeed, groups that are more prone to violence may, in principle, have a higher propensity to practice FGC and to supply more slaves. If that were the case, the argument should hold regardless of the particular route taken by the slaves. However, some other concerns may still hold. For example, due to some unobserved

and unknown factors, ethnic groups that initially were more prone to FGC or less developed may supply a higher number of slaves in the Red Sea route compared to the other routes. We therefore complement the above empirical approach by augmenting the main specification with historical characteristics of ethnicity potentially correlated with FGC. We include five variables to capture historical propensity of practicing FGC and initial prosperity using the *Ethnographic Atlas* assembled by George Peter Murdock (Murdock, 1964): i) whether the ethnic group was practicing male circumcision; ii) whether it was adopting restrictive norms on premarital sexual behaviors of girls; iii) whether the ethnic group was historically dependent on husbandry (Becker, 2018); iv) historical population density; v) and whether the ethnic group had a nomadic or semi-nomadic precolonial settlement pattern, compared to a sedentary one. Descriptive statistics of our main variables of interests and controls are reported in Appendix table A3.

5 Results

5.1 IMain results

[Insert table 2]

Before looking at our first main results, we report in table 2 the coefficients of a regression of the likelihood of being part of the Red-Sea route of the slave trade on historical and individual characteristics. No evidence of a systematic correlation between Red Sea slave trade and individual characteristics appears. The only variables that are signicant at the 10 percent level are Muslim, Catholic and the indicator for the historical presence of male circumcision.

[Insert table 3]

Table 3 contains our first main results. The dependent variable is equal to 1 if the respondent report infibulation (type 3 circumcision) and 0 otherwise (nothing or any other type of circumcision). In columns 1-3, our independent variables are the number of slaves divided by the area of land inhabited by the ethnic group during the nineteenth century in each slave route.

The coefficient on Red Sea/Area captures the change in infibulation for respondents who had slave ancestors in the Red Sea slave route compared to respondents who have non-slaves ancestors.

As expected, there is a positive and statistically significant correlation between the number of slaves exported through the Red Sea route and a woman's probability of being infibulated today, as measured in the DHS. On the contrary, the fact that ancestors have been traded across all the other slave trade routes have a negative or zero effect on dependent variable (column 1). The coefficient on the Indian route is positive, suggesting a similar effect given that some slaves beloning to the Indian route were sent to the Middle East, but is not significant. The results are robust to the inclusion of individual controls (column 2) and historical controls (column 3). In terms of magnitude, a one standard deviation increase in Red Sea/Area variable increase the probability to be infibulated today by 2.6 percentage points (or 36%) (column 3).

Because the distribution of the exports is highly left skewed, with a small number of observations taking on large values, in columns 4-6, we report estimates using the inverse hyperbolic sine of our exports divided by area. The results are similar to the ones reported in columns 1-3: we continue to find a significant positive correlation between slave exports in the Red Sea route and the dependent variable. In terms of magnitude, a one standard deviation increase in IHS-Red Sea variable increase the probability to be infibulated today by 13% (column 6).

[Insert table 4]

We next move to investigate the effect of having ancestors in the Red Sea slave trade on the probability of being circumcised today.An alyzing the determinants of circumcision is very relevant given that circumcusion is the practice mostly predominant in Africa today (almost 60% of women are circumcised in our sample) while the practice of infibulation is mainly restricting to Somalia, Sudan, Djibouti and Eritrea. In table 4 we report results where the dependent variable is equal to 1 if the individual is circumcised (type 2 or type 3 circumcision) and 0 if not. Similarly to table 3, we show a positive and statistically significant correlation between having ancestors traded in the Red Sea route (both when looking at Red Sea/Area and the inverse hyperbolic sine of it) and being circumcised today. In the full specification reported in column 3 a one standard deviation increase in the Red Sea Exports/ Area increase the probability of circumcision by 0.036 percentage points (or 7%) . The magnitude of the effect is very similar in column 6: a one standard deviation increase in the inverse hyperbolic transformation of the Red Sea Exports/Area increase the probability of

circumcision by 8.6%.

[Insert table 5]

In table 5 we test whether the positive coefficient on the Red Sea route is driven by ethnicities located in a particular part of the African continent, namely in the East. We therefore restricted our regressions to the countries in our sample located in East Africa (Egypt, Sudan, Ethiopia, Somalia, Djibouti, Eritrea). It is very interesting and reassuring to observe that our results hold to these alternative sample definition. In columns 1-3 we investigate the correlation between infibulation and the inverse hyperbolic sine of the Red Sea: a one standard deviation increase in the dependent variable increase the probability of being infibulated today by 10%. In columns 4-6 we show results for the probability of being circumcised today: one standard deviation increase in the dependent variable increase the likelihood of circumcision by 3.7%.

5.2 Instrumental variable strategy

The results presented so far are robust to a wide array of controls and specifications, but there could still be unobservable omitted variable that are correlated with both an ethnic group's exposure to the Red Sea slave trade and current prevalence of FGC. For instance consider the possibility that ethnic groups historically beloning to the Red Sea route were characterized by a higher sense of beauty for women. These groups were maybe more likely to trade women in the Red sea route but also more likely to cut them today, as a sign of beauty. To address this concern, we rely on an instrumental variable strategy similar to one suggested by Nunn and Wantchekon (2011) and Teso (2017). Traders purchased slaves at ports to ship them to the Middle East making groups inhabiting areas closer to the coast and/or to the ports more likely to be exposed to the external demand for slaves. We used two instruments: an ethnic group's historical distance from the Red Sea coast and an ethnic group's historical distance to the main ports of exit in the Red Sea coast (see Figure 1 for the location of ports). The identification assumption is that, after controlling for the usual set of historical variables, among women currently living in the same country the historical distance from the Red Sea coast of a woman's ancestors affects her probability to be infibulated today only through the exposure to the Red Sea slave trade.

[Insert tables 6-7]

In table 6 we instrument the probability to be part of the Red Sea slave trade with the closest distance to the coast. In table 7 we used as instrument the distance to the main ports of exit. We report first and second stage. Despite the fact that the F-statistics is below 10, these tentative estimates are suggestive of the fact that indeed women belonging to groups that were more severely targeted by the Red Sea slave trade are today more likely to be infibulated.

6 Conclusions

Our paper provided a better understading of the historical origins of female genital cutting and a potential explanation for the variation in its prevalence we observe today in Africa. We empirically show that female genital cutting can be traced back to the legacy of the slave trade. In particular, infibulation and circumcision are higher for women belonging to ethnic groups whose ancestors were heavily affected by the Red Sea slave route, where women were used as concubines in the Middle East and infibulation was used to ensure chastity and avoid pregnancy. We did not find any robust correlation with other slave routes. These results are consistent with different roles female slaves had across different routes.

We believe our findings have imporant policy implications. In particular, they can help to design efficient policies aimed at reducing female genital cutting in two main directions: first, our results highlight the importance of "cultural identity" in the perpetuation of female genital cutting. Previous work has indicated among the key reasons for the perpetuation of FGC signalling on the marriage market (e.g. men value cut women more because it is a signal of sexual fidelity) and coordination failures (e.g., communities may be stuck in situations where the majority of members cut and no one wants to deviate from this norm for fear of social sanctions). Beside these important channels, we suggest that female genital cutting has ancient roots and has become part of certain groups' cultural identity. Keeping an "identity" component while designing policies to reduce the practice may then be a way to change people's demand for it. For example, in an ongoing project in Sierra Leone we are sensitizing communities to adopt an alternative initiation ritual for girls, which preserves identity but removes the harmful element (cutting).

Second, we know that narratives are important and have been used in the past to understand people's decisions (Glaeser, 2005; Hoff-Stiglitz, 2010): "S*tandard economics omits the role of narratives (the stories that people tell themselves and others) when they make all kinds of decisions. Narratives play a role in understanding the environment; focusing attention; predicting events; motivating action; assigning social roles and identities; defining power relations; and establishing and conveying social norms*" (Akerlof and Snower, 2015). If we change the narrative around FGC, for example by informing communities that FGC was introduced as a means to enslave members of a group, cutting may no longer be an appealing trait. On going work include a better understading of the transmission channels and the spillovers of FGC in ethics group that weren't subject to the Red Sea slave trade.

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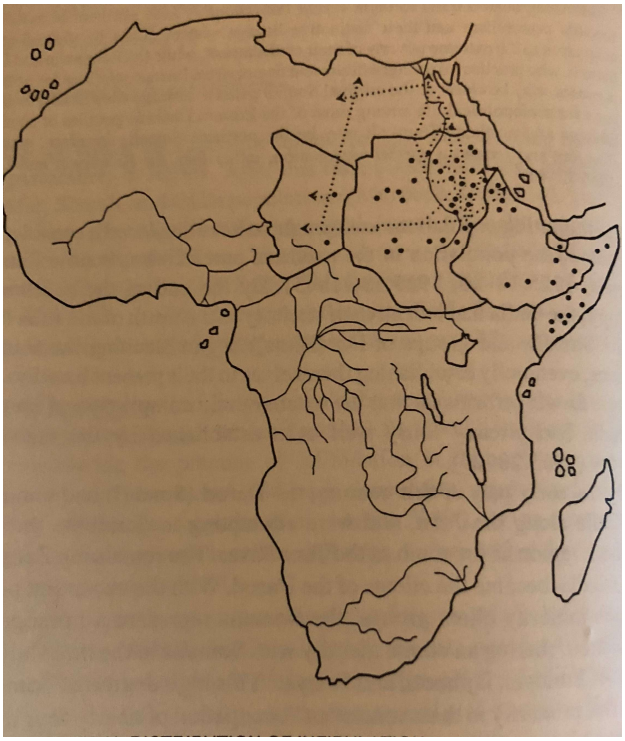
Figures

Figure 1: African Slave Routes

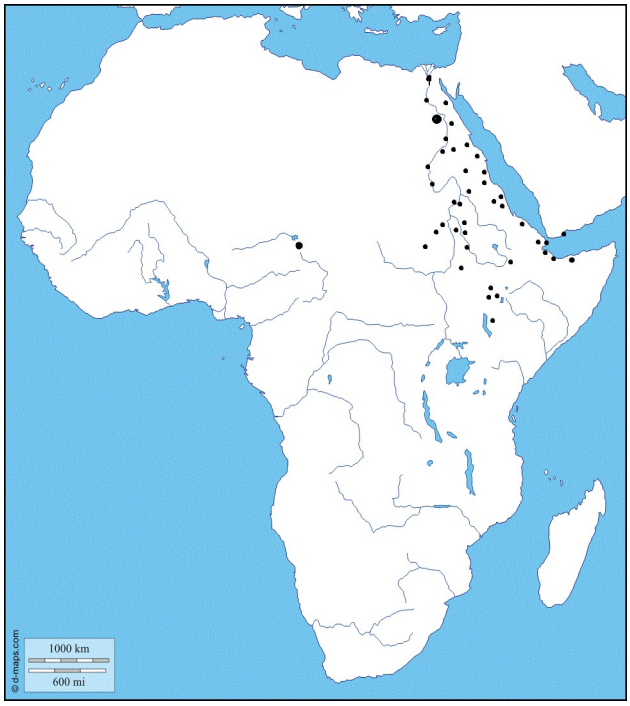


Source: Authors' calculculation based on historical accounts

Figure 2: Historical location of infibulation



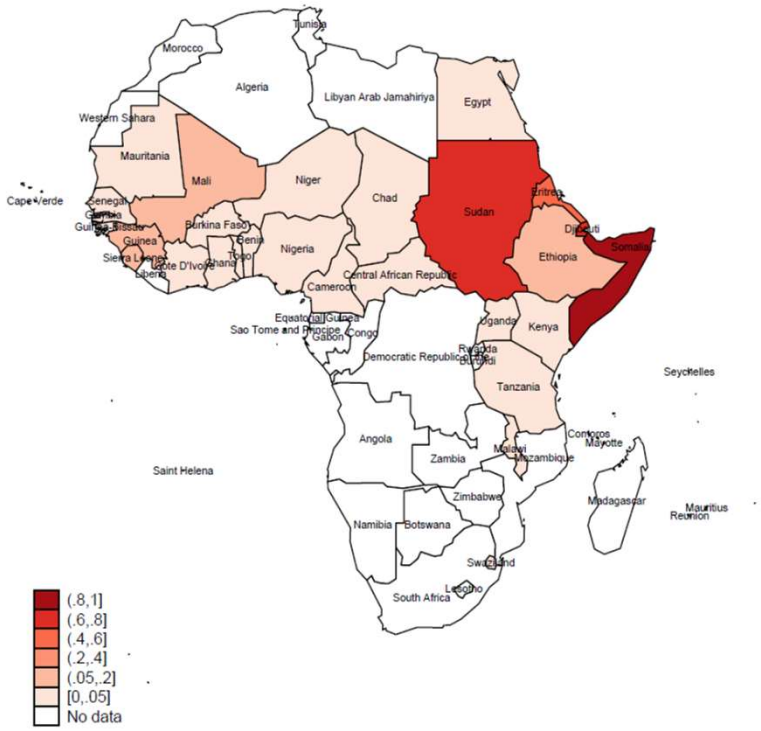
(a): Seligman (1913)



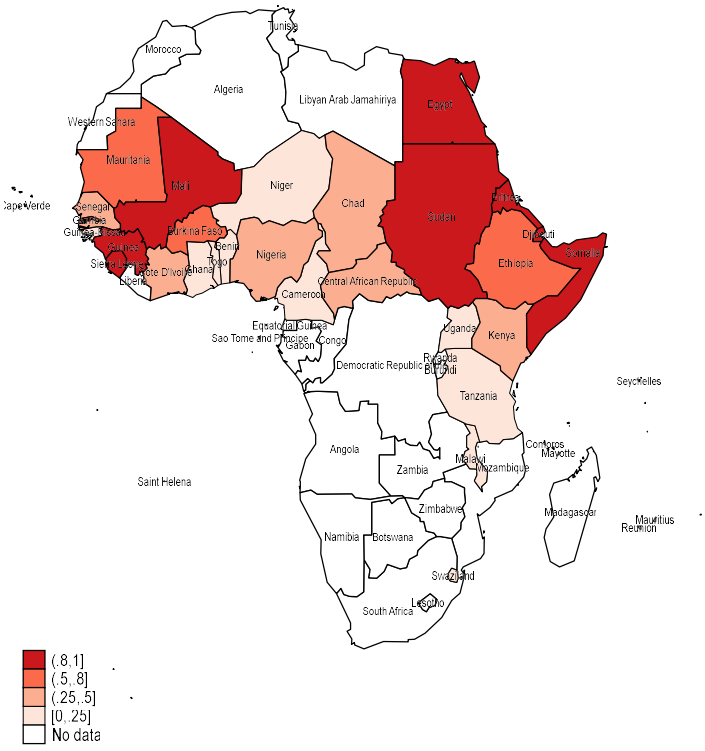
(b): Widstrand (1964)

Figure 3: FGC prevalence by country

Infibulation (Type 3)



Circumcision (Type 2)



Tables

Table 1: FGC Prevalence, by Age and Type

	Infibulation	*Circumcision (Clitoridectomy+Excision)*	*Age at cutting*
Benin	0.014	0.103	9.63
Burkina Faso	0.007	0.757	6.69
Cameroon	--	0.004	8.5
CAR	--	0.443	10.44
Chad	0.040	0.293	9.17
Cote D'Ivoire	0.024	0.374	9.54
Djibouti	0.701	0.964	--
Egypt	0.000	0.897	9..56
Eritrea	0.470	0.912	--
Ethiopia	0.156	0.711	7.81
Gambia	0.027	0.731	4.18
Ghana	--	0.077	--
Guinea	0.072	0.981	8.724
Guinea-Bissau	0.042	0.542	4.31
Kenya	0.039	0.338	11.46
Malawi	--	0.009	--
Mali	0.123	0.925	5.46
Mauritania	0.058	0.688	0.10
Niger	0.008	0.051	7.47
Nigeria	0.022	0.428	10.50
Senegal	0.047	0.348	5.07
Sierra Leone	0.091	0.900	12.48
Somalia	0.873	0.990	8.57
Sudan	0.721	0.900	6.81
Swaziland	--	0.014	--
Tanzania	0.009	0.065	11.81
Togo	0.013	0.050	10.75
Uganda	--	0.001	--
All	*0.171*	*0.596*	*7.99*

Source: DHS and MICS

Table 2: Balance

	Red Sea Exports / Area		*IHS - Red Sea Exports / Area*	
	(1)	(2)	(3)	(4)
Age	0,004	0,004	0,002	0,002
	(0,006)	(0,006)	(0,003)	(0,003)
Age squared	-0,000	-0,000	-0,000	-0,000
	(0,000)	(0,000)	(0,000)	(0,000)
Urban Area	-0,156	-0,156	-0,048	-0,048
	(0,109)	(0,109)	(0,034)	(0,034)
Primary Education	-0,045	-0,045	-0,041	-0,041
	(0,038)	(0,038)	(0,025)	(0,025)
Secondary Education	-0,011	-0,011	-0,025	-0,025
	(0,032)	(0,032)	(0,023)	(0,023)
Higher Education	-0,107	-0,107	-0,051	-0,051
	(0,091)	(0,091)	(0,042)	(0,042)
Muslim	0,614	0,614	0,328*	0,328*
	(0,387)	(0,387)	(0,174)	(0,174)
Traditional Religion	0,295	0,295	0,155	0,155
	(0,205)	(0,205)	(0,094)	(0,094)
Catholic	0,325	0,325	0,135*	0,135*
	(0,211)	(0,211)	(0,079)	(0,079)
Durable Goods (PCA)	-0,003	-0,003	-0,002	-0,002
	(0,010)	(0,010)	(0,004)	(0,004)
Herding		0,024		0,005
		(0,017)		(0,006)
Low Promiscuity		0,281		0,252
		(0,406)		(0,168)
Nomadic		1,719		0,667
		(1,135)		(0,500)
Male Circumcision		-0,524*		-0,211*
		(0,290)		(0,109)
Historical Slavery		0,267		0,115
		(0,421)		(0,162)
Constant		0,017**		0,004
		(0,008)		(0,003)
Country FE	-0,242	-1,342	-0,813***	-1,175***
R^2	(0,206)	(0,839)	(0,097)	(0,307)
Number of observations	314.226	314.226	314.226	314.226

Notes: *** p<.01, ** p<.05, * p<.10. Notes: Standard errors in parentheses, clustered at the ethnic group level. Country FE included.

Table 3: Infibulation and Slavery

Dep. variable =	*1 if infibulated*					
	(1)	(2)	(3)	(4)	(5)	(6)
Red Sea Exports / Area	0,020**	0,018**	0,014*			
	(0,009)	(0,008)	(0,007)			
Saharan Exports / Area	-0,001	-0,006	-0,003			
	(0,003)	(0,004)	(0,005)			
Atlantic Exports / Area	-0,001*	0,001	0,000			
	(0,000)	(0,001)	(0,001)			
Indian Ocean Exports / Area	0,012	0,008	0,013			
	(0,022)	(0,020)	(0,022)			
IHS - Red Sea Exports / Area				0,068***	0,061***	0,049**
				(0,024)	(0,021)	(0,019)
IHS - Saharan Exports / Area				-0,007	-0,020	-0,008
				(0,008)	(0,013)	(0,010)
IHS - Atlantic Ocean Exports / Area				-0,003	0,001	0,001
				(0,003)	(0,003)	(0,004)
IHS - Indian Ocean Exports / Area				0,008	0,004	0,012
				(0,026)	(0,023)	(0,027)
Country FE	YES	YES	YES	YES	YES	YES
Individual Controls	NO	YES	YES	NO	YES	YES
Historical Controls	NO	NO	YES	NO	NO	YES
R^2	0,523	0,533	0,544	0,530	0,539	0,547
Number of observations	200.074	200.074	200.074	200.074	200.074	200.074

Notes: The table reports OLS estimates. The unit of observation is an individual. Standard errors clustered at the ethnic group level in parentheses. *** p<.01, ** p<.05, * p<.10. . Coefficients in cols. 1-4 are multiplied by 10000. The individual controls include age, age squared, a binary variable equal to 1 if the respondent lives in urban area, a dummy for primary, secondary and tertiary education, a dummy for Muslim, Catholic and Traditional Religion. Ethnic-level histrorical controls include two binary variables capturing very restrictive or restrictive norms of premarital sexual behavior (early marriage, insistence on viriginty, premarital sex prohibited and/or censured if positive pregnancy results); a binary variable indicating the custom of male circumcision, a dummy indicating if the pre-colonial settlement patterns is nomadic or seminomadic; population density (population/area); a dummy for the presence of internal slavery in the past; a variable capturing the degree to which a society depends on animal husbandry (as in Becker, 2017), historical population density and distance to the centroid of the ethnic group and Cairo. The source for historical controls is Murdock (1964).

Table 4: Circumcision and Slavery

Dep. variable =	*1 if circumcised*					
	(1)	(2)	(3)	(4)	(5)	(6)
Red Sea Exports / Area	0,007**	0,003*	0,014**			
	(0,003)	(0,002)	(0,007)			
Saharan Exports / Area	0,016	0,006	0,010			
	(0,024)	(0,024)	(0,021)			
Atlantic Ocean Exports / Area	-0,002	0,001	0,000			
	(0,004)	(0,004)	(0,004)			
Indian Ocean Exports / Area	0,019*	0,015*	0,002			
	(0,010)	(0,008)	(0,012)			
IHS - Red Sea Exports / Area				0,034***	0,020**	0,043**
				(0,013)	(0,010)	(0,021)
IHS - Saharan Exports / Area				0,009	-0,017	-0,007
				(0,051)	(0,056)	(0,050)
IHS - Atlantic Ocean Exports / Area				-0,006	0,006	-0,000
				(0,021)	(0,021)	(0,023)
IHS - Indian Ocean Exports / Area				0,023	0,018	-0,005
				(0,015)	(0,012)	(0,016)
Country FE	YES	YES	YES	YES	YES	YES
Individual Controls	NO	YES	YES	NO	YES	YES
Historical Controls	NO	NO	YES	NO	NO	YES
R^2	0,427	0,451	0,466	0,428	0,452	0,466
Number of observations	249.081	249.081	249.081	249.081	249.081	249.081

Notes: The table reports OLS estimates. The unit of observation is an individual. Standard errors clustered at the ethnic group level in parentheses. *** p<.01, ** p<.05, * p<.10. . Coefficients in cols. 1-4 are multiplied by 10000. The individual controls include age, age squared, a binary variable equal to 1 if the respondent lives in urban area, a dummy for primary, secondary and tertiary education, a dummy for Muslim. Ethnic-level historical controls include two binary variables capturing very restrictive or restrictive norms of premarital sexual behavior (early marriage, insistence on viriginty, premarital sex prohibited and/or censured if positive pregnancy results); a binary variable indicating the custom of male circumcision, a dummy indicating if the pre-colonial settlement patterns is nomadic or seminomadic; population density (population/area); a dummy for the presence of internal slavery in the past; a variable capturing the degree to which a society depends on animal husbandry (as in Becker, 2017), historical population density and distance to the centroid of the ethnic group and Cairo. The source for historical controls is Murdock (1964).

Table 5: Infibulation and Slavery in East Africa

Dep. variable =	*1 if infibulated*			*1 if circumcised*		
	(1)	(2)	(3)	(4)	(5)	(6)
IHS - Red Sea Exports / Area	0,066**	0,031*	0,038**	0.024***	0.011**	0.024***
	(0,026)	(0,015)	(0,015)	(0.008)	(0.005)	(0.008)
IHS - Saharan Exports / Area	-0,029	-0,076	0,154	0.030	0.018	-0.089*
	(0,096)	(0,075)	(0,238)	(0.062)	(0.048)	(0.048)
IHS - Indian Ocean Exports / Area	0,009	-0,007	0,012	0.009	0.006	0.003
	(0,035)	(0,020)	(0,039)	(0.011)	(0.006)	(0.007)
Country FE	YES	YES	YES	YES	YES	YES
Individual Controls	NO	YES	YES	NO	YES	YES
Historical Controls	NO	NO	YES	NO	NO	YES
R^2	0,355	0,459	0,481	0,368	0,461	0,482
Number of observations	40.358	40.358	40.358	40.358	40.358	40.358

Notes: The table reports OLS estimates. The unit of observation is an individual. Standard errors clustered at the ethnic group level in parentheses. *** p<.01, ** p<.05, * p<.10. . Coefficients in cols. 1-4 are multiplied by 10000. The individual controls include age, age squared, a binary variable equal to 1 if the respondent lives in urban area, a dummy for primary, secondary and tertiary education, a dummy for Muslim. Ethnic-level histrorical controls include two binary variables capturing very restrictive or restrictive norms of premarital sexual behavior (early marriage, insistence on viriginty, premarital sex prohibited and/or censured if positive pregnancy results); a binary variable indicating the custom of male circumcision, a dummy indicating if the pre-colonial settlement patterns is nomadic or seminomadic; population density (population/area); a dummy for the presence of internal slavery in the past; a variable capturing the degree to which a society depends on animal husbandry (as in Becker, 2017) and historical population density. The source for historical controls is Murdock (1964).

Table 6: Infibulation and Slavery - IV regression

Dep. variable =	*1 if infibulated*					
	(1)	(2)	(3)	(4)	(5)	(6)
Second Stage Results						
Red Sea Exports / Area	0,022**	0,022**	0,007			
	(0,009)	(0,008)	(0,010)			
Atlantic Exports/ Area		0,001	0,000			
		(0,001)	(0,001)			
Saharan Exports / Area		-0,006	-0,002			
		(0,004)	(0,005)			
Indian Ocean Exports / Area		0,012	0,009			
		(0,022)	(0,019)			
IHS - Red Sea Exports / Area				0,068**	0,063***	0,016
				(0,027)	(0,024)	(0,026)
IHS - Saharan Exports / Area					-0,006	-0,002
					(0,004)	(0,005)
IHS - Atlantic Ocean Exports / Area					0,001	0,000
					(0,001)	(0,001)
IHS - Indian Ocean Exports / Area					0,012	0,009
					(0,022)	(0,019)
First Stage Results						
Distance to Red-Sea Ports (ln)	-2,824**	-2,753**	-1,954**	-0,925**	-0,938**	-0,760***
	(1,143)	(1,080)	(0,635)	(0,415)	(0,421)	(0,291)
1st stage F-stat	6,104	6,492	9,482	4,981	4,962	6,817
Country FE	YES	YES	YES	YES	YES	YES
Individual Controls	NO	YES	YES	NO	YES	YES
Historical Controls	NO	NO	YES	NO	NO	YES
Number of observations	200.074	200.074	200.074	200.074	200.074	200.074

Notes: Standard errors clustered at the ethnic group level. The distance to the coast is calculated as the natural logarithm of the Euclidean distance between the historical ethnic group centroid calculated from the Murdock (1959) polygons and the closest point on the Red Sea coast of the African continent.

Table 7: Infibulation and Slavery - IV regression

Dep. variable =	*1 if infibulated*					
	(1)	(2)	(3)	(4)	(5)	(6)
Second Stage Results						
Red Sea Exports / Area	0,016**	0,015*	-0,007			
	(0,008)	(0,008)	(0,016)			
Atlantic Exports/ Area		0,001	0,001			
		(0,001)	(0,002)			
Saharan Exports / Area		-0,006	-0,001			
		(0,004)	(0,006)			
Indian Ocean Exports / Area		0,003	0,004			
		(0,017)	(0,017)			
IHS - Red Sea Exports / Area				0,051**	0,045*	-0,019
				(0,024)	(0,023)	(0,046)
IHS - Saharan Exports / Area					-0,021	0,000
					(0,013)	(0,013)
IHS - Atlantic Ocean Exports / Area					0,001	0,005
					(0,003)	(0,007)
IHS - Indian Ocean Exports / Area					-0,002	0,007
					(0,018)	(0,020)
First Stage Results						
Distance to Red Sea Coast (ln)	-2,902**	-2,793**	-1,895***	-0,890*	-0,893*	-0,690*
	(1,401)	(1,319)	(0,726)	(0,468)	(0,473)	(0,318)
1st stage F-stat	4,293	4,486	6,809	3,614	3,561	4,722
Country FE	YES	YES	YES	YES	YES	YES
Individual Controls	NO	YES	YES	NO	YES	YES
Historical Controls	NO	NO	YES	NO	NO	YES
Number of observations	200.074	200.074	200.074	200.074	200.074	200.074

Notes: Standard errors clustered at the ethnic group level. The distance to the coast is calculated as the natural logarithm of the Euclidean distance between the historical ethnic group centroid calculated from the Murdock (1959) polygons and the location of the primary Red Sea ports used in the slave trade.

Table A1: Country List

Country	Source	Waves
Benin	DHS	2001, 2006, 2011-12
Burkina Faso	DHS	1998-99, 2003, 2010
Cameroon	DHS	2004
CAR	DHS	1994-95
Chad	DHS	2004, 2014-15
Cote D'Ivoire	DHS	1998-99, 2005, 2011-12
Djibouti	MICS	2006
Egypt	DHS	1995, 2000, 2003, 2005, 2008, 2014
Eritrea	DHS	1995, 2002
Ethiopia	DHS	2000, 2005, 2016
Gambia	DHS	2013
Ghana	DHS	2003
Guinea	DHS	1999, 2005, 2012
Guinea-Bissau	MICS	2006, 2014
Kenya	DHS	1998, 2003, 2008-09, 2014
Malawi	DHS	1996
Mali	DHS	1995-96, 2001, 2006, 2012-13
Mauritania	MICS	2007, 2011, 2015
Niger	DHS	1998, 2006
Nigeria	DHS	2003, 2008, 2013
Senegal	DHS	2005, 2010-11, 2014, 2015, 2016, 2017
Sierra Leone	DHS	2008, 2013
Somalia	MICS	2006, 2011
Sudan	MICS	2000, 2014
Swaziland	DHS	2006
Tanzania	DHS	1996
Togo	DHS	2013-14
Uganda	DHS	2011, 2016

Table A2: Summary of the Red Sea slave trade ethnicity data

Region	*Years*	*No. Ethnic.*	*Num. Obs.*	*Type*	*Source*
Bombay, India	1837-1882	2	5	Manumission requests	Harris (1971)
Jedda, Saudi Arabi	1892-1924	32	62	Refugee records	League of Nations (1936, 1937)
Massawa, Eritrea	1873-1885	13	204	Destination port traffic estima	Miran (2013)
Arabian Peninsula (multiple locations)*	1907-1942	19	46	Manumission requests	Zdanowski (2008)
Total		*66*	*317*		

Notes: * The manumission requests were recorded at the British Agencies at the following locations: Bahrain; Bandar Abbas; Basidu; Bushire; Dubai; Kuwait; Lingah; HMS Fowey; HMS Lupin; Muscat; and Sharjah.

Table A3: Descriptive Statistics

	Obs	Mean	Std. Dev.	Min	Max
Panel A: Socio-Demographic Characteristics					
Infibulation	200.075	0,142	0,349	0	1
Circumcised	249.082	0,583	0,493	0	1
Age	249.082	29,111	9,392	15,000	50,000
Age squared	249.082	935,664	583,538	225,000	2500,000
1 if urban area	249.082	0,405	0,491	0,000	1,000
Primary Education	249.082	0,269	0,437	0,000	1,000
Secondary Education	249.082	0,280	0,443	0,000	1,000
Tertiary Education	249.082	0,070	0,251	0,000	1,000
Muslim	249.082	0,584	0,452	0,000	1,000
Panel B: Socio-Demographic Characteristics					
Herding	249.082	29,217	19,881	0,000	93,000
Low Promiscuity	249.082	0,437	0,319	0,000	1,000
Male Circumcision	249.082	0,887	0,295	0,000	1,000
Historical Slavery	249.082	0,927	0,242	0,000	1,000
Population density	249.082	35,645	36,396	0,003	159,339
Nomadic	249.082	0,152	0,334	0,000	1,000
Panel C: Slavery					
Red Sea Exports /Area	249.082	0,302	2,009	0,000	21,660
Sub-Saharan Exports/Area	249.082	0,068	0,570	0,000	9,829
Trans-Atlantic Exports/Area	249.082	2,398	7,226	0,000	37,703
Indian Exports/Area	249.082	0,081	0,550	0,000	4,224
IHS Red Sea Exports /Area	249.082	-0,512	0,737	-0,693	5,548
IHS Sub-Saharan Exports/Area	249.082	-0,626	0,355	-0,693	4,071
IHS Trans-Atlantic Exports/Area	249.082	0,332	1,807	-0,693	6,619
IHS Indian Exports/Area	249.082	-0,623	0,442	-0,693	2,613

Source: Demographic and Health Survey and MICS for socio-demographic characteristics, Ethnograhic Atlas for Historical Controls