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Female genital mutilation and migration in Mali.

Do return migrants transfer social norms?*

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Abstract:

In this paper, we investigate the power of migration as a mechanism in the transmission of social norms, taking Mali and Female Genital Mutilation (FGM) as a case study. Mali has a strong FGM culture and a long-standing history of migration. We use an original household-level database coupled with census data to analyze the extent to which girls living in localities with high rates of return migrants are less prone to FGM. Malians migrate predominantly to other African countries where female circumcision is uncommon (e.g. Côte d'Ivoire) and to countries where FGM is totally banned (France and other developed countries) and where anti-FGM information campaigns frequently target African migrants. Taking a two-step instrumental variable approach to control for the endogeneity of migration and return decisions, we show that return migrants have a negative and significant influence on FGM practices. More precisely, we show that this result is primarily driven by the flow of returnees from Cote d'Ivoire. We also show that adults living in localities with return migrants are more informed about FGM and in favor of legislation. The impact of returnees may occur through several channels, including compositional effects, changes in return migrants' attitudes toward FGM, and return migrants convincing stayers to change their FGM practices.

Key words: Female Genital Excision, social transfers, migration, Mali.

JEL codes: I15; O55; F22.

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Female genital mutilation and migration in Mali.

Do return migrants transfer social norms?

1. Introduction

Recent years have witnessed growing interest in migration as a vehicle for the transfer of social and political norms.¹ Studies show that emigration raises the home country population's exposure to different political and social norms and values, both directly through contacts with returnees and indirectly through diaspora network contacts. For example, emigration leads to changes in the home country's political institutions² (for instance, Spilimbergo, 2009; Pfutze, 2012; and Chauvet and Mercier, 2014) and fertility norms (Bertoli and Marchetta, 2013; Tuccio and Wahba, 2015). The process of social remittances is complex. It depends on migrant's capacity to acquire new norms as well as to transmit them to non-migrants. Moreover, it can occur through several channels, including income effects due to remittances, changes in the home country's population composition and characteristics, and changes in attitudes among migrants.

In this paper, we investigate the power of migration as a mechanism in the transmission of social norms, taking Mali and Female Genital Mutilation (FGM) as a case study. FGM, more commonly known as female circumcision, is still widespread in Africa.³ Although it is internationally recognized as violence against women and a violation of women's rights, the World Health Organization estimates that between 100 and 130 million girls and women in

¹ Levitt (1998) was the first paper to define the concept of "social remittances".

² Emigration can affect political institutions via three other channels: i/ emigration provides people with exit options and a safety net in the form of remittance income, which can lower their incentives to voice on the domestic front and eventually delay democratic reform and political change; ii/ emigrants can voice from abroad and support various political groups and views at home; iii/ given that migration is a non-random process, emigration alters various aspects of the home country population's composition (especially education and ethnicity), which can in turn affect democracy at home.

³ These practices include the partial or total removal of the female external genitalia or other injury to the female genital organs.

Africa, Asia and the Middle East have been subjected to FGM (WHO, 2013). It is practiced in 28 African countries.

Mali has a strong FGM culture – with a prevalence rate of 91% among women aged 15 to 49 years old⁴ – and a long-standing history of migration. Malians migrate predominantly to other African countries where female circumcision is uncommon, if not prohibited (e.g. Côte d'Ivoire), or to non-African countries where FGM is totally banned and anti-FGM information campaigns frequently target African migrants. We use an original household-level database coupled with census data to analyze the extent to which girls living in localities with high rates of return migrants are less prone to FGM.

Taking a two-step instrumental variable approach to control for the endogeneity of migration decisions, we show that return migrants have a negative and significant influence on FGM practices. We also show that adults living in localities with return migrants are more informed about the health impacts of FGM and in favor of legislation against FGM. The impact of returnees may be due to compositional effects, to changes in attitudes among return migrants as the result of their migration experiences, and to the capacity of return migrants to convince non-migrants to change their FGM practices. We are not able to fully distinguish between these potential channels in our data, but we examine differences related to where migrants went, the prevalence of FGM there, and the weight of migrants in the locality's population as a whole. We show that the negative impact is primarily driven by the flow of returnees from Côte d'Ivoire.

The paper is structured as follows. Section 2 presents a review of the literature on migration as a vehicle for norms. Section 3 discusses FGM practices in Mali and in the host countries of Malian migrants. Section 4 presents the data and econometric approach used to

⁴ Source: DHS report on Mali, 2012-2013. Prevalence rates among women aged 15 to 49 are also over 90% in Djibouti, Egypt, Guinea, Sierra Leone, Somalia, and North Sudan. They are over 70% in Eritrea, Ethiopia, Burkina Faso, and Mauritania (Yoder and Wang, 2013; WHO, 2013).

identify the impact of return migration on FGM decisions. Results and robustness tests are presented in section 5. Section 6 concludes.

2. Literature review

Spilimbergo (2009) was the first author to provide evidence indicative of social transfers via migration.⁵ Taking a panel of countries, he showed that foreign-educated individuals promote democracy in their origin country only if those migrants attended school in democratic countries. In the same vein, Docquier *et al.* (2011) show that skilled emigration has a positive impact on institutional quality in the home country,⁶ and Beine and Sekkat (2013) find that migration tends to improve political institutions in the sending country depending on the characteristics of the destination country. Lodigiani and Salomone (2015) show that the share of women in home country parliaments is positively correlated with international migration to countries with higher rates of female political empowerment. Although it is hard to understand by which particular means foreign-educated individuals induce democratic change, these cross-country econometric analyses suggest that migration can be a vehicle for changes in norms.

Other papers investigate this research question using micro and meso data. Pérez-Armendáriz and Crow (2010) take a national survey in Mexico to show that return migrants display different political behavior to non-migrants and that migration affects political participation and non-migrants' beliefs through contacts with migrants still abroad and migrant networks (measured by the ratio of migrants in the community's population). Batista and Vicente (2011) conduct a voting experiment in Cape Verde and show that international migration may promote better institutions at home by raising demand for political accountability. In this, they confirm that migration is a vehicle for democratic norms. Pfutze (2012) analyzes Mexican local

⁵ In this paper, we deliberately restrict the literature review to papers using statistical data to identify the extent to which migration is a vehicle for the transfer of norms.

⁶ However, this positive impact is cancelled out for a set of countries when the negative impact of emigration on the stock of human capital is taken into account.

elections and also provides evidence that high levels of international migration help improve the quality of democratic institutions. He finds two causal channels through which migration can have this effect: transfer of democratic norms and an income effect in the form of remittances sent by migrants, which undermine the clientelistic relationship between the government and its constituents. Unfortunately, his data cannot distinguish between these two channels. Chauvet and Mercier (2014) find that the stock of return migrants has a positive impact on participation rates and electoral competitiveness in Mali, which stems mainly from returnees from non-African countries, suggesting a knowledge spillover effect from migrants returning from democratic countries. Using community- and individual-level data, Barsbai, *et al.* (2017) show that emigration in the late 1990s strongly affected political preferences and electoral outcomes in Moldavia and was eventually a factor in bringing down the ruling Communist government. They provide evidence to suggest that the effect works by means of the spread of information and norms from abroad. For instance, they find that the impact of westward migration is stronger in communities where a large share of the population grew up during the Soviet era or has a low level of education. They also investigate individual-level data from opinion polls, which show that individuals in communities with migration flows to Western countries gradually lost confidence in local media and the Communist government over time. Nikolova *et al.* (2017) show that in Bulgaria and Romania having close contacts with relatives and friends abroad is consistently associated with pro-social behavior (donating, volunteering, and helping strangers). Last but not least, Tuccio *et al.* (2019) take a Moroccan household survey and control for double selection into emigration and return migration to suggest that households with migration experience have different social and political demands than non-migrant households. Having returnees from Western European countries increases demand for social and political change whereas having current migrants from non-Western countries reduces the willingness of the left-behind households to change. These results suggest that the political climate of the hosting countries matters to the propensity of migrants

to transfer new norms. This conclusion is in line with Chauvet *et al.* (2016), who use a multi-sited exit-poll survey conducted in Mali, France, and Côte d'Ivoire during the 2013 Malian presidential election to provide evidence that not only do migrants have different perceptions of Malian democratic institutions than their non-migrant counterparts, but that the host country's institutional environment matters to the adoption of political norms. Malians interviewed in France had lower levels of trust in Malian political institutions and were more interested in politics than non-migrants and migrants living in Côte d'Ivoire.

Another strand of the literature looks into the extent to which migrant exposure to their host country's fertility norms changes the fertility behavior of the migrants themselves and those left behind. Whereas many demographic research papers have investigated emigrants' fertility behavior to see the extent to which the receiving countries' fertility norms are assimilated,⁷ Bertoli and Marchetta (2013) take individual-level data to show that Egyptian male return migrants from Arab countries (where fertility norms are higher than in Egypt) have significantly more children than non-migrants. Focusing on Jordan, Tuccio and Wahba (2015) find that households with return migrants from conservative Arab countries have lower female labor force participation, lower female education and higher fertility than non-migrant households. However, Bertoli and Marchetta (2013) and Tuccio and Wahba (2015) are not able to disentangle the income effect induced by remittances from abroad⁸ from the transfer of fertility norms influencing preference for a certain number of children. Beine *et al.* (2013) identify two other main channels. First, migration can affect home country fertility by impacting the parents' incentives to invest in education. Migration can reduce fertility rates as it raises the expected rate of return to education. Investment in education reduces the amount of time available for other activities such as raising children. Second, if the children's income is

⁷ See, for instance, Blau (1992), Khan (1994), Lindstrom and Saucedo (2002), Parrado and Morgan (2008), and Adsera and Ferrer (2013).

⁸ Note that the impact of remittances is ambiguous. Although more income can induce a greater desire to have more children, remittances can reduce the parents' need to have a large number of children to take care of them when they are older.

one of the components of the parents' utility, migration also raises the parents' incentives to invest in their children's education, resulting in a negative impact on fertility rates. Controlling for the three other channels through which migration may affect fertility, Beine *et al.* (2013) show that fertility norms are transferred from host to home countries.^{9,10}

As the above authors often note, one of the main challenges is to correctly disentangle the transfer of migration-driven norms from other migration effects. Another key analytical challenge is the non-random selection of migrants with respect to unobservable characteristics, which can also have an impact on fertility decisions and democratic institutions in home countries. For instance, migrants might have open-minded attitudes that correspond to the social and cultural values of their host countries and that can simultaneously explain their migration. The communities from which emigrants come might prefer local democratic institutions for unobservable reasons, which might explain migration to more democratic countries. In this case, the correlation found between migration and more democratic institutions may capture the impact of this confounded factor rather than a causal relationship between migration and local institutions induced by a transfer of democratic norms. This potentially endogenous issue has been addressed by most of the abovementioned papers by means of an instrumental econometric specification, with an exogenous source of variation in the rate of migration (Pfutze, 2012; Beine and Sekkat, 2013; Beine *et al.*, 2013; Bertoli and Marchetta, 2013; Chauvet and Mercier, 2014, Tuccio and Wahba, 2015 and Tuccio *et al.*, 2019), or a quasi-experimental context that induces an exogenous shock on migration (Barsbai *et al.*, 2017). We detail this identification issue in this paper's methodological section.

⁹ Fargues (2007) focuses on migration from Morocco, Turkey and Egypt. He posits that there is a transfer of fertility norms between the host countries and these countries. However, he does not control for alternative channels.

¹⁰ Norm transmissions have also been studied involving other channels. For instance, Asadullah and Wahhaj (forthcoming) investigate whether female early marriage in Bangladesh is a conduit for the transmission of social norms, specifically norms relating to gender roles and rights within the household.

There are very few research papers on the links between migration and FGM. Those there are focus mainly on the risk of FGM in Europe due to inflows of immigrants from FGM-practicing countries. Farina and Ortensi (2012, 2014) report that FGM prevalence is lower among African immigrant women in Italy than among non-migrant women interviewed in origin countries, as it is among second-generation immigrants compared to the first generation.¹¹ Moreover, immigrant women strongly disagree with the continuation of this practice, suggesting that female migrants have a different attitude toward FGM than non-migrants. Johnsdotter et al. (2009) conduct qualitative interviews with men and women from Ethiopia and Eritrea in Sweden. They find firm rejection of all forms of FGC and absence of a guiding motive. The same is found by Gele et al. (2012) and Gele et al. (2015) among Somali immigrants in Norway as well as by Morison et al. (2014) among Somali immigrants in London. Lastly, Vogt et al. (2017) compare Sudanese immigrant attitudes toward uncut girls with the attitudes of non-migrants in Sudan. First, they show that Sudanese immigrants in Switzerland have significantly more positive attitudes toward uncut girls than Sudanese in Sudan. Second, the age of immigrants and the proportion of a migrant's life spent in Switzerland appear to be positively associated with positive attitudes toward uncut girls, suggesting that the length of time spent in the receiving country could be positively associated with a transfer of norms. However, and as the authors point out, they cannot disentangle the selection effect and the acculturation impact of migration.

To our knowledge, there has to date been no analysis of the impact of migration on home country FGM practices. We believe this issue to be highly relevant to an investigation of the extent to which migrants transfer social norms, in that the other channels that may interfere with this mechanism are less prone to come into play in the case of FGM. The potential impact of migration on education could not interfere with a social norm transfer. Parental preference

¹¹ However, potential ethnic group and level of education differences, which might explain the difference in FGM prevalence between immigrants and non-migrants, are not controlled for.

for FGM should be exogenous to this effect. Indeed, the income effect induced by remittances should have only a small effect on the parents' decision to cut their daughter. FGM should be seen as a social norm, since it has been shown that FGM can potentially serve as an identity marker to define membership of an ethnic group (Coyne and Coyne, 2014). Family and individuals sustain this habit, because they think their community expects them to do so or because they perceive it as a factor of identification with their group, irrespective of their standard of living. However, this practice could also be a way for males to reduce the cost of overseeing female sexual activity. Parents are then inclined to circumcise their daughters as the value of cut young women is higher than uncut women on the marriage market. In Africa, the future husband pays a dowry to the bride's family. The positive income effect of migration could then enable husbands-to-be to afford cut girls with their high value on the marriage market. Migration could then influence the FGM practice if migrants were to express a preference for circumcised girls and if girls' parents were to prefer their daughters to be married to migrants rather than non-migrants. Although it is hard to test such hypotheses, it seems unlikely. Moreover, the income effect generated in this hypothesis, if any, would have a positive rather than a negative impact on FGM. This potential effect could then induce an underestimation of the negative impact of the social norm transfer channel. However, another effect of migration via an income effect could interfere with a transfer of social norms and induce an overestimation of the social norm transfer channel. Higher income among returnee migrants who have daughters could reduce their need for a higher price for the bride paid in the home country. If the income effect is higher for those who return from countries where FGM is uncommon, the two effects could go hand-in-hand. However, although there is ethnographic and anecdotal evidence of this, there is little empirical evidence to show the importance of FGM to marriage and successful marriage (excepting Chesnokova and Vaithianathan, 2010).

3. Female genital mutilation and migration in Mali

FGM in Mali

Mali has one of the highest FGM prevalence rates in the world, standing at 91.1% for women aged 15 to 49 years old in 2013.¹² By way of comparison, prevalence rates are 95.8% in Egypt (2005), 95.6% in Guinea (2005), 74.3% in Ethiopia (2005), 75.5% in Burkina Faso (2010), 38.2% in Côte d'Ivoire (in 2012 as opposed to 41.7% in 2005), and 25.7% in Senegal (in 2010-11 versus 28.2% in 2005).

In Mali, as in most African countries, this practice is more prevalent among certain ethnic groups. As seen in Figure 1, FGM prevalence is much higher among girls in the Soninke, Malinke, Senufo and Fulani ethnic groups (over 90%) than among Bobo and Songhai girls (less than 50%). This diversity of practice across ethnic groups combines with regional prevalence differences. Nearly all the girls living in the Kayes region have been cut, whereas just 52.9% of those from the Mopti region are circumcised (Figure 2). Living in an urban area does not seem to reduce the risk of FGM, as the FGM rate is quite similar in cities and in rural areas (79.7% and 80.0% respectively).

In addition to popular belief about FGM's health and bodily hygiene benefits, causes of female genital mutilation include a mix of cultural and social factors within families and communities. FGM is seen as a way of preparing girls for adulthood and marriage, tying this practice in with premarital virginity (and marital fidelity thereafter) (Bellas Cabane, 2006; Chesnokova and Vaithianathan, 2010). It is also perceived as an identity marker defining community group affiliation (Coyne and Coyne, 2014). People cut their daughters to show that

¹² A slight increase in prevalence in Mali has been observed since 2006, when it stood at 85.2% following a downturn. The rate posted 94.0% in 1995-96 and 91.6% in 2001 (Yoder and Khan, 2008; Yoder and Wang, 2013).

they have adopted their community's social norms, whatever their beliefs about health repercussions or impact on the women's marital status.¹³

[insert Figure 1 and Figure 2 about here]

Even though emblematic Malian feminists have taken sporadic action against FGM since the 1960s, FGM preventive and information campaigns only really started in Mali in the 1980s and grew in the 1990s and 2000s (Jones *et al.*, 1999; Bellas Cabane, 2006; OFPRA, 2008). Yet they have proved powerless in the face of the sheer extent of FGM practices. And despite political will, a lack of specific legislative, human and financial resources to combat FGM holds back any display of individual and collective opposition to female circumcision (OFPRA, 2008).

FGM in the host countries of Malian migrants

To our knowledge, studies on the links between migration and FGM in Mali focus on female circumcision practices among Malian migrants in France where the Malian community reportedly practiced FGM in the 1970s, following a wave of migration in the 1960s and family reunification. Gillette-Faye (1998) gives a rough estimate of 24,000 women and girls circumcised or at risk of FGM in France in late 1982.¹⁴ She reports that immigrant women wanted to keep the Malian traditions. They believed they would not be able to return to their own country if they accepted certain of the rules and practices of host country France, including the ban on circumcision. Keeping the customs was seen as a way of averting a break with the original community and preventing any weakening of ties with the African community living in France. At the time, host countries, out of respect for these customs, were silent on the practice of female circumcision inflicted on girls. When Western doctors became aware of the immediate and long-term consequences of FGM, they felt bound by the Hippocratic Oath and

¹³ Yet FGM as a social coordination norm has been questioned, as some researchers observe enormous heterogeneity in cutting practices within and across communities (Efferson et al. 2015)

¹⁴ A second estimate in late 1989, at the request of GAMS (Women's Group for the Abolition of Sexual Mutilation), set the number at approximately 27,000 women.

fear of alienating an immigrant society that really needed to trust them so that the girls could be treated in the best possible conditions. In the 1980s, a number of socio-anthropological studies commissioned by the government and women's associations against female circumcision sought to identify female circumcision problems in France in order to take action with the families concerned (Porgès, 2000).

The French government's first response was to introduce legislation outlawing FGM, whereas the associations chose primarily preventive information campaigns (Winter 1994 and Guiné and Moreno Fuentes 2007). France was the first European country to prosecute circumcised girls' parents.¹⁵ Parents and people practicing mutilation risk up to 20 years in prison. In addition, under child protection measures in place, professionals are subject to a reporting obligation (Article 223-6 of the Criminal Code). Yet, according to a study conducted by OFPRA (2008) in the region of Kayes (the main source region for Malian migrants to France) and Bamako (the capital city), there is no evidence that return migrants from France are less in favor of FGM practices. Some even say that migrants are in favor of the practice because they want to be seen to obey the traditional practices and scale of social values. This assertion seems to contradict studies of African migrants living in other European countries, listed in the literature review.

In most African host countries of Malian migrants today, FGM is now debated and fought. Civil society and government bodies have emerged to counter these practices. Some African governments have even passed laws banning female circumcision (Burkina Faso, Côte d'Ivoire, Senegal and Togo). Yet FGM rates are very slow to fall, for many reasons. The laws are not coercive or are not enforced (Porgès 2000; Shell-Duncan et al. 2013). Secondly, the repressive legislation may have produced the adverse effect of lowering the age at which girls are circumcised on the basis that it is easier to hide this practice from the authorities when the

¹⁵ FGM is an offence under Article 222 of the Criminal Code on violence. The first case to be prosecuted was in 1979.

child is young (UNICEF 2005; Camilotti 2015). Lastly, awareness campaigns and preventive actions might not have the desired effect due to the pervasiveness of these cultural practices, a lack of resources and the choice of target population and message (Berg and Denison 2012, 2013; Coyne and Coyne 2014).

4. Data and empirical strategy

Data

ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*)

The data used for this study are taken from an individual survey called ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) on a representative sample of girls aged 0 to 14 years old and adults over 15 years old. The ENEM survey was conducted to gain a thorough understanding of the phenomenon of female circumcision in order to guide new strategies to put an end to FGM in Mali. The survey's intent was to measure the prevalence of FGM among girls aged 0-14 years, assess knowledge of the effects of FGM, and understand attitudes toward and perceptions of circumcision. The sample covers 3,858 girls and 4,444 adults sampled from the girls' households spread over the six main Malian regions, excluding the northern regions: Kayes, Koulikoro, Sikasso, Segou, Mopti and Bamako (the capital city). The survey contains questions about the age of the girls when they were circumcised and the method used, in addition to the adults' knowledge of the health repercussions of FGM and their attitudes toward FGM. Unfortunately, the survey does not provide information on international migration by household members. This makes it impossible to know whether the girls belong to a household with return migrants.

These individual data are coupled with the 2009 population census. We compute the socio-demographic characteristics of the interviewees' localities of residence, including the return migrant share. Our main measure of the return migrant share is the number of individuals who

have lived abroad for at least six months or were born abroad divided by the total village population.

To control for potential time discrepancy issues between outcomes and explanatory variables at the household and locality level, we restrict the sample to girls ages 0 to 8 years old. The size of the sample under study totals 1,979 girls from 0 to 8 years old and 3,159 adults spread over 75 localities. Tables 1, 2 and 3 give some descriptive statistics of the girl, adult and locality samples respectively.

[insert tables 1, 2 and 3 about here]

A full 71.4% of the sample's 1,979 girls aged 0 to 8 are circumcised (Table 1). More than half of the interviews (57.8%) report that circumcision occurred during childhood, without stating the precise age. A total of 22.9% of the girls whose age of cutting is known were circumcised in their first year of life, and about 5% each at 1, 2 or 3 years old. None of them were circumcised after six years old. A total of 30.6% of the girls live in the Kayes region, 23.6% in Sikasso, 16.8% in Mopti, 14.1% in Segou, 8.9% in Bamako and 6% in the Koulikoro region. Due to the over-representation of the Kayes region, Soninke is the main ethnic affiliation of the household heads (14.6%), with Senufo, Fulani and Bambara being the other major ethnic affiliations. A full 81.8% of household heads are Muslim, 2.6% are Christian and 3.2% Animist. Only 24.6% of the mothers have been to school, while 42.7% of the girls' carers (mainly their mothers) have been informed about the health issues caused by FGM, but only 29.7% know that it can cause health issues for girls and 17.2% in adulthood.

The adult sample and the household heads of the sample of girls match in terms of FGM knowledge, place of residence, ethnic, and religious affiliations (Table 2). Of the 3,159 adults, 55.8% are female and 27.2% have been to school. Whereas 89.0% usually listen to the radio and 69.9% watch TV, only 11.9% are used to reading newspapers. Some 57.5% think that FGM is an advantage for girls, while 48.3% say they have been informed about FGM. However, only

37.2% know that FGM can cause health issues for girls, with just 22.3% aware of this being the case in adulthood.

Table 3 presents the main characteristics of the sample's localities. On average, there are 10,156 inhabitants per locality: 29.3% of them are literate, 23.6% are farmers and 14.2% of their household heads are female. Note that there is a huge disparity between localities. For instance, more than 12% have fewer than 1,000 inhabitants, and 62% between 1,000 and 10,000 inhabitants. The literacy rates range from 1.1% to 63.2%, while the proportions of people working in the agricultural sector vary from 0% to 71.9%. In terms of migration, an average 3.1% of inhabitants are observed to be returnees. Of these, 71% come from countries where FGM is less practiced than in Mali or even forbidden, including Côte d'Ivoire for half of them, with the remaining 29% having lived in countries where FGM is equally or more practiced than in Mali, i.e. Burkina Faso, Chad, Djibouti, Egypt, Eritrea, Guinea, Equatorial Guinea, Mauritania, Niger and Nigeria. Current migrants are much fewer and farther between than returnees: they represent an average of just 0.6% of the entire population of each locality.

The mean FGM prevalence rate among girls ages 0 to 8 years old per locality is 71.1%; in three localities, none of the girls are circumcised, whereas there are 12 localities where FGM prevalence is 100%. Figure 3 shows the correlation between FGM prevalence and return migration per locality. Graph 1 plots FGM rates and return migrant rates, irrespective of the country in which migrants have lived. We observe a negative correlation between the intensity of migration and FGM. This pattern does not appear when considering only Malian return migrants from African countries where FGM is very common (Graph 2). As can be seen from the two graphs at the bottom of Figure 3, the negative correlation observed between FGM and return migration seems to be driven by returnees from countries where FGM is practiced less than in Mali or even prohibited (Graph 3). This negative pattern is even stronger among returnees from Côte d'Ivoire (Graph 4).

[insert Figure 3 about here]

Empirical strategy

Our exploration of the impacts of migration on FGM practices first estimates a model that takes the following form:

$$E_{i,j,v} = \alpha + \eta Mig_v + \beta Age_{i,j,v} + \gamma X_{j,v} + \phi M_{j,v} + \tau Z_v + \zeta D_r * Age_FGM_v + \varepsilon_{i,j,v} \quad (1)$$

Where $E_{i,j,v}$ is a dummy variable equal to one when a girl i from household j living in locality v ¹⁶ is circumcised and zero if she is not, and where $\varepsilon_{i,j,v}$ is the equation's error term. It is clustered at the enumerator area level so as to account for the potential correlation of error terms in a neighborhood within a locality.

Mig_v measures return migration to locality v . This variable captures the direct impact of migration on FGM among girls in households with returnees together with the impact of returnees among non-migrant households. We start by testing the impact of the percentage of returnees in the locality's population as a whole. The expected sign of this variable is ambiguous. It depends on where returnees come from, whether their opinions of FGM have been influenced by their migration experience and whether they are willing to transfer these new norms to their family and the rest of the locality's population. It could be positive if the majority of returnees come from host countries where FGM is not forbidden and negative if the host countries were against FGM. We therefore run three regressions by decomposing the Mig_v variable into different variables in order to investigate how much difference the destination country makes to the dissemination of norms. Firstly, we make a distinction between returnees from countries where FGM is practiced and the other countries where FGM

¹⁶ This could be either a village (in rural areas) or a neighborhood in a town or city.

is prohibited and/or is practiced less than in Mali.¹⁷ Secondly, for this latter group of countries, we distinguish between African and non-African countries to test whether migrants from non-African countries are likely to be more against FGM. Thirdly, we distinguish between the effect of the percentage of returnees from Côte d'Ivoire since this country is the main destination country for Malian migrants and the effect of returnees from all other countries.

Using simple ordinary least squares (OLS) estimators could bias the estimated correlation between return migration and FGM variables by means of two main endogeneity channels. Unobservable heterogeneity at locality level is the first potential source of bias. Localities with a larger number of return migrants may have specific unobservable characteristics correlated with their inhabitants' FGM behavior, such as information campaigns against FGM. To control as far as possible for this bias, we introduce dichotomous variables at the regional level (D_r) times the average girls' age of cutting in each village. This gives 23 dummy variables. The age of the girl at the time of the survey ($Age_{i,j,v}$) can similarly capture the potential impact of information campaigns in rural areas in the 2000s on differences in FGM prevalence by age and FGM trends. The second potential source of bias is found in individual-level selection into migration (including the destination choice) and into return (including the location choice once back in Mali). Returnees may have specific characteristics that affect their behavior and opinions of FGM independently of the decision to migrate (and return to Mali). The first way to control for this source of bias is to add control variables into the estimation liable to simultaneously explain migration and FGM attitudes. We introduce a vector of variables that characterize the household head, $X_{j,v}$. It includes sex, age, ethnicity, religion, and four dummy variables equal to one if s/he knows that FGM can cause health issues for the girl now or in adulthood, if s/he has had access in the past to any sources of information on FGM, and if s/he

¹⁷ Countries where FGM is practiced as much as in Mali are Burkina Faso, Chad, Djibouti, Egypt, Eritrea, Guinea, Equatorial Guinea, Mauritania, Niger and Nigeria. Countries where FGM is prohibited and/or is practiced less than in Mali are European, American and Asian countries plus African countries with the exception of Burkina Faso, Chad, Djibouti, Egypt, Eritrea, Guinea, Equatorial Guinea, Mauritania, Niger and Nigeria.

is in favor of a law against FGM. The age and level of education of the girl's mother/carer are also controlled for ($M_{j,v}$ vector). We moreover introduce variables computed at locality level (Z_v vector): the percentage of Muslims, Christians and Animists, the ethnic distribution of the population, the percentage of literate adults, the proportion of adults working in the agricultural sector, the percentage of female household heads, and a composite index of wealth per capita.¹⁸ We expect to find a negative correlation between level of education (of the household head and the daughter's mother/carer) and the risk of being circumcised. The sign of the correlations between the age of the household head and the daughter's mother/carer is not evident. Actually, they can depend on the variation in national anti-FGM campaigns over time, which may affect the adults' behavior.¹⁹ Ethnicity and religion are used to control for the cultural and potentially religious origins of FGM.²⁰ These variables measured at locality level capture potential social pressure and social norm transfers.

However, unobservable characteristics can bias the correlation between migration and FGM variables. For this reason, and in line with the empirical literature on migration, we use an instrumental procedure. In the same vein as Chauvet and Mercier (2014), we first instrument returnee variables using two exogenous variables related to the historical background of current migration that are correlated with Malian migration, but not with FGM behavior today. As shown by Gubert (2000), colonization drove up Malian migration from the Kayes region and especially from the Soninke ethnic group to France. It also scaled up migration to the west coast of Africa and Côte d'Ivoire (mainly from southern Malian regions on the border with this country). The French colonial power actually practiced forced migration to the coast to provide a labor force for the cocoa and coffee plantations. It is also well known that the Soninke people

¹⁸ This score is an aggregate of indicators of the material used to build the walls, floor and roof of the housing and the type of toilet it has.

¹⁹ For instance, FGM was condemned by the government during the socialist period (from the 1960s to the end of the 1970s). The FGM debate subsequently waned and the practice was more or less accepted.

²⁰ Even though religion is far from the main correlated factor, we introduce this variable as Muslims appear to practice FGM more widely than Christians or Animists.

have a tradition of migration dating back to the pre-colonial period, and that colonization and potential jobs in the trade and building sectors in coastal towns and jobs in France in the industrialization period (1960s and 1970s) drove up migration flows. To capture this historical origin of Malian migration, we use the distance from each Malian locality in our sample to the traditional Soninke migratory route (in keeping with Chauvet and Mercier, 2014) and the distance to the nearest railroad station. The validity of this strategy is based on the fact that the French colonial power never conducted any actions or information campaigns against female circumcision even though they were aware of the practice (Amselle, 2010).²¹ These two variables are thus correlated with migration flows, but are exogenous to FGM prevalence today. Returnees can also be selected among migrants; this potential selectivity bias arising from the return choice has then to be controlled for (Wahba, 2015). Consequently, we also instrument returnee variables by exogenous shocks in the main destination countries for Malian migrants. We assume that return decisions depend on labor demand and income level in host countries. These labor market conditions can be approximated either by average GDP growth rates or by the political situation in the Malian migrants' main countries of residence. However, as none of the variables proxying for economic conditions in countries other than Côte d'Ivoire proves to be significantly correlated with returnee variables, we end up instrumenting three returnee variables in three distinct regressions – the percentage of returnees in the locality's population as a whole, the percentage of returnees from a country where FGM is banned or practiced less than in Mali, and the percentage of returnees from Côte d'Ivoire²² – with three instruments in each first-stage regression, namely the number of politically violent events in Côte d'Ivoire one

²¹ The British Empire ran campaigns to ban female circumcision, especially in Kenya in the 1920s and 1930s (Hetherington, 1998; Thomas, 2000, and Boddy, 2007).

²² With the share of returnees from other countries as a control variable for the two last regressions.

year before the average year per village of return to Mali,²³ the distance to the traditional Soninke migratory route, and the distance to the nearest railroad station.

To measure the impact of migration on knowledge and social norms relating to FGM, we test a second model in the following form:

$$Y_{j,v} = \alpha + \eta Mig_v + \gamma X_{j,v} + \tau Z_v + D_r * Age_FGM_v + \varepsilon_{j,v} \quad (2)$$

$Y_{j,v}$ is a vector of five variables measuring the FGM opinions and perceptions of adult j living in locality v . Y_1 takes the value of one when adult j living in locality v thinks that FGM gives girls advantages, zero otherwise; Y_2 and Y_3 are respectively equal to one when adult j living in locality v says that s/he knows that FGM causes health issues for girls (in adulthood), zero otherwise;²⁴ Y_4 takes the value of one if the interviewed adult has never been informed of the health issues caused by FGM; lastly, Y_5 is equal to one if s/he is in favor of a law to ban FGM, and zero if s/he is against it.

A number of papers have been recently published examining potential bias in survey responses when sensitive outcomes are measured. They focus on a number of topics such as voter behavior and racial attitudes (Redlawsk and al., 2010), sexual risk behavior (LaBrie and Earleywine 2000), abortion (Moseson et al., 2015), anti-gay sentiment (Coffman et al. 2013) and, in economics, the use of microfinance credit (Karlan and Zinman 2012). De Cao and Lutz (2018) analyze potential bias in survey responses on FGM in Ethiopia. Using the list experiment method,²⁵ they show that direct questions induce a substantial bias in this context, as answers

²³ Sources: Acled database <https://www.acleddata.com/>.

²⁴ In addition to the questions on their knowledge of health consequences for girls and in adulthood, the interviewees were asked to list the type of health issues that came to mind. Concerning health issues for the circumcised girls, hemorrhage is cited first followed by decease and HIV infection. In adulthood, the most cited health issue is delivery problems followed by hemorrhage, decease and HIV infection and other diseases.

²⁵ The list experiment is based on the idea that if a sensitive question is asked indirectly, the truthful response will be given by the respondent. A list of items is proposed and interviewees have to indicate the total number of items with which they agree. Respondents are divided into two groups: a control group that receives a list of non-sensitive items

underestimate support for FGM by about 10 percentage points. They produce evidence to suggest that this bias could be more pronounced among uneducated women and targeted by an NGO intervention against FGM. Given that the five variables measuring FGM opinions and perceptions are computed from a direct questionnaire, they might be potentially biased. However, there are elements to suggest that this bias should be less pronounced in our Malian case than in the Ethiopian case. The questions asked to measure opinions and perceptions are less sensitive than in the case of Cao and Lutz (2018), as the question they asked was, “Should a girl be circumcised?”. As previously stated, FGM is neither criminalized nor prohibited by a specific law in Mali; in Ethiopia, it is. Consequently, Malian respondents are less likely to underreport their support for FGM than Ethiopians. Lastly, potential biases due to information campaigns and NGO interventions are controlled for by regional variables times the average girl’s age of cutting in each village.

Mig_v measures the percentage of returnees and, as with model (1), we run different regressions to test the effects of returnees depending on which country they returned from. We use the same identification strategy as for model (1). We add control variables and instrumental returnee variables. The control variables include $X_{j,v}$, a vector of variables that characterize the respondent. This comprises age, ethnicity, religion, and three dichotomous variables equal to one if s/he regularly listens to the radio, watches TV or reads a newspaper. Vectors Z_v and $D_r * Age_FGM_v$ are the same vectors of variables as in equation 1. We instrument, in three separate regressions, the percentage of returnees irrespective of the country of destination, the percentage of returnees from a country where FGM is banned or practiced less than in Mali, and the percentage of returnees from Côte d’Ivoire using three instrumental variables in each regression: the distance from each Malian locality in our sample

and a treatment group asked to answer the same non-sensitive questions plus a sensitive question. The difference in mean response between the two groups provides the proportion of respondents who agree with the sensitive question.

to the traditional Soninke migratory route, the distance to the nearest railroad station, and the number of politically violent events against civilians in Côte d'Ivoire.

5. Results

We first analyze the effect of the percentage of returnees in the total locality population on the risk of FGM for girls aged 0 to 8 years old. The OLS estimation for Equation 1 is shown in column (1) of Table 4 and the full results for the control variables are presented in Table A.1 in the appendices. This estimation yields a negative but insignificant on the returnees variable. In column (5), the 2SLS estimation coefficient is presented. The first-stage regression is presented in Table 5 (column 1) and the instrumentation tests are at the bottom of Table 4. The two distance variables are correlated significantly with the return migrant variables, whereas the number of politically violent events in Côte d'Ivoire one year before the average per village year of return to Mali is negatively associated with returnees. The instrumentation tests validate the empirical strategy. Whereas the partial R-squared is equal to 0.39, underidentification and weak identification tests do not reject the validity of the instruments. Once the returnee variable is instrumented, its coefficient remains negative but becomes significant. Girls living in localities with return migrants are less likely to be circumcised than others. This result occurs when control variables at both household level and locality level are included in the estimations, more especially ethnicity, religion and education variables. This suggests that, *ceteris paribus*, return migrants reduce the prevalence of circumcised girls and that this effect is not driven by the selection at play during the migration and return process. Moreover, the 2SLS coefficient is twice as large as the OLS coefficient. This means that, when the endogeneity of return migration is not controlled for, its impact (if any) is underestimated.

Second, we investigate whether the destination country makes a difference. We first divide returnees between those who migrated to countries where FGM is prohibited and/or is less practiced than in Mali (countries hereinafter called “non-FGM countries”) and those who went

to African countries where FGM is practiced as much as in Mali (called “FGM countries”). The OLS results are shown in column (2) of Table 4. When we do not control for potential endogenous bias, return migrants from countries practicing FGM are found to raise the prevalence of circumcision in their home village. The inverse result is found for return migrants from countries where FGM is prohibited and/or practiced less than in Mali, with this variable’s coefficient being negative and significant. The difficulty here is to correctly instrument the different returnee variables. As mentioned in the methodology section, we instrument solely the variable that measures returnees from “non-FGM countries”. The 2SLS results are reproduced in column (6) and the first step results in column (2) of Table 5. All the instrumental variables’ coefficients are significant, and the instrumentation tests validate the empirical strategy, as shown by the tests in the second part of Table 4, column (6). Both coefficients remain significant, and the 2SLS coefficient associated with returnees from countries where FGM is banned or not practiced is negative and larger than the OLS coefficient.

Column (3) of Table 4 shows the results of the OLS estimations when return migrants from non-FGM countries are divided into those from non-African countries and those from African countries. The coefficient for the variable measuring the stock of return migrants from non-African countries is negative, but insignificant, although the coefficient for returnees from African non-FGM countries is negative and significant. When the endogeneity of this last variable is controlled for (column (7) Table 4), the negative impact of returnees from African non-FGM countries remains and doubles. It appears from columns (4) and (8) that the negative impact of return migrants from African countries is driven by migrants from Côte d’Ivoire. Conversely, the positive impact of returnees is driven by migrants from either non-African countries or African countries (except Côte d’Ivoire). When the potential bias of returnees from Côte d’Ivoire is controlled for (column (8) of Table 4),²⁶ the negative coefficient for returnees

²⁶ Tests shown in Table 4 and the first-stage regression results (column 4, Table 5) validate the instrumental strategy.

from Côte d'Ivoire increases and remains significant. While Côte d'Ivoire is the main destination country for Malian migrants, its FGM prevalence rate is relatively low (at just 38.2% for 15-to-49-year-old women in 2012) and FGM is prohibited. The fact that returnees from Côte d'Ivoire have a significant negative impact on FGM and seem to drive the negative effect of the other returnee variables may suggest that what matters in the social norm process is not just the repressive action against those who practice FGM in the host country, but also the fact that migrants lived in an African country where FGM is not the customary habit. Consequently, they are well aware that non-circumcised girls do not suffer from social exclusion problems as this risk is often invoked to justify this practice in the African context. Moreover, more than 69% of female return migrants from Côte d'Ivoire are actually born in this country. It can be assumed that most of them are not circumcised and can more readily convince non-migrant women not to cut their daughters. This is all the more plausible since returnees from Côte d'Ivoire are in the majority among return migrants (more than 50% of returnees come from Côte d'Ivoire, see Table 3).

Before analyzing the impact of returnee variables on knowledge and social norms, let's comment on the coefficients for the controlled variables shown in Table A.1 in the appendices. Their size and level of significance do not change when different decompositions of the returnee population are tested or when the OLS or 2SLS estimators are used. Table A.1 shows that, *ceterus paribus*, girls from 2 to 8 years old are circumcised much less than younger girls. Given that the average age of female circumcision is 2 years old, this result may suggest that the FGM practice is decreasing over time. Religion is not significantly associated with the risk of FGM. Few coefficients of the household head's ethnic group²⁷ are significant. The Malinke and Fulani ethnic groups have a positive effect on FGM (the reference group being the Bambara), whereas the Dogon ethnic group has a negative correlation with FGM. Living in the Sikasso,

²⁷ Ethnic group is measured by the household head's mother tongue.

Ségou, Mopti and Bamako regions reduces FGM compared to the Kayes and Koulikoro regions (coefficients not shown). These results on the impact of regional and ethnic variables confirm the fact that FGM has the potential to serve as an identity marker (Coyne and Coyne, 2014). The youngest mothers seem to be less likely to cut their daughter than the oldest mothers. The mother's education has no effect on FGM. The same holds true for the variables capturing the fact that household heads are informed about the health consequences of FGM. None is significantly different from zero.²⁸ These results corroborate the lack of effectiveness of awareness campaigns highlighting the adverse health consequences of the practice (United Nations Children's Fund, 2013). On the other hand, fewer girls are circumcised in households whose head is in favor of a law to ban FGM (although this coefficient is not always significant). Looking at the village-level variables, the population's religious composition does appear to have a significant impact on FGM, since there appears to be less cutting of girls living in villages with more Christians than other religions. The shares of some ethnic groups seem to matter too: mainly Malinke, Fulani, Tamacheq (negatively) and Dogon (positively). Lastly, the proportions of female household heads, literate persons in the locality, farmers and the variable proxying the locality's level of wealth are not significant. All these results are in line with most previous studies on FGM in Mali, which point to the importance of ethnic and regional cultural habits and potentially the impact of the level of education on FGM (Bellas Cabane, 2006, and Ouédraogo, 2009).

[insert Table 4 and Table 5 about here]

Table 6 presents the returnee variable coefficients turned up by the estimation of Equation 2. The full results on the control variables are presented in Table A.2 in the appendices. The potential impact of the stock of return migrants (irrespective of the receiving country) is

²⁸ Similar results are found when these variables are measured for the daughter's mother rather than for the household head.

investigated for five dependent variables describing the interviewees' opinions: Y_1 - Does s/he think that FGM gives girls advantages? (Yes=1)-, Y_2 - Does s/he know that FGM causes health issues for girls? (Yes=1)-, Y_3 - Does s/he know that FGM causes health issues for girls in adulthood? (Yes=1)-, Y_4 - Has s/he ever been informed of the health issues caused by FGM? (Yes=1)- and Y_5 - Is s/he in favor of a law to ban FGM? (Yes=1). Columns (1a) to (5a) present the OLS results and columns (1b) to (5b) show the 2SLS estimations. Table 6 shows that, whereas few of the OLS coefficients are significant (two in five), three of the five 2SLS coefficients are significant and two of them have the expected sign. The instrumentation strategy appears to be valid for all the specifications, even though one of the three instrumental variables does not have a significant coefficient on the return variable (as can be seen from the identification tests in the second panel of Table 6 and the first stage results in column (1) Table A.3 in the appendices). The stock of returnees appears to impact the interviewees' level of information about the health issues caused by FGM (column 4b). Consequently, they are more likely to know about the health consequences of FGM for girls and women. However the 2SLS coefficients are not significant (columns 2b and 3b). Returnees also have a positive and significant impact on the interviewees being in favor of a law against FGM (columns 5a and 5b). This then suggests that people living in localities with returnees are informed about FGM-related issues and are in favor of a ban on FGM, irrespective of their own characteristics (age, education, etc.) and the characteristics of the locality in which they live.²⁹ These results hold when 2SLS estimations are conducted to control for potential bias. Even if interviewees are not informed about FGM, the stock of returnees has a positive impact on their opinions of the positive advantages of FGM (columns (1a) and (1b)). These results are not necessarily inconsistent, in the sense that positive opinions may allude to the perceived social or marital advantages induced by FGM, but not to its health consequences.

²⁹ It is worth noting that the adults who attended school are more informed and in favor of a law to ban FGM. Likewise, variables measuring their access to media are, for the most part, also significantly correlated with all these variables describing the interviewee's opinion (cf. Table A.2 in the appendices).

We then test whether the effect of migrants from Côte d'Ivoire differs from the effect of returnees from other host countries. Table 7 shows the results. It appears that all the OLS coefficients associated with the share of returnees from Côte d'Ivoire are significant and bear the expected sign, with the one exception of a positive effect on the first outcome (Y_1 “does s/he think that FGM gives girls advantages?”, column (1a)). More people living in localities with returnees from Côte d'Ivoire seem to receive information on FGM (Y_4 variable), and such information transfers imply that these people are actually more aware of the health repercussions of FGM (Y_2 and Y_3 variables, columns (2a) and (3a)). An inverse correlation is found for returnees from other countries, but all the coefficients except one are not significantly different from zero. These results are robust when we seek to take into account a potential endogeneity bias of the proportion of returnees from Côte d'Ivoire for all variables except the Y_3 variable, which is no longer significantly different from zero (column 3b).³⁰ Table 6's finding of a positive impact of the stock of returnees on opinions in favor of a law against FGM appears to be driven more by migrants from Côte d'Ivoire than by those from other countries (columns (5a) and (5b), Table 7). The 2SLS “Ivoirians” coefficient remains positive and significant (column (5b), Table 7). This means that returnees from Côte d'Ivoire manage to convince people from their home locality to refrain from circumcising their daughters, and manage to persuade them of the advantages of introducing a law against FGM.

[insert Table 6 and Table 7 about here]

³⁰ First-stage results are reproduced in column (2) of Table A.3 in the appendices and the identification tests at the bottom of Table 7. Two in three instrumental variable coefficients are significant, and two in three instrumentation tests (Sargan and underidentification tests) validate the empirical strategy. As the Stock and Yogo tests do not reject the potential weak instrument hypothesis, the 2SLS results need to be viewed with caution.

Robustness checks

Are the results we find on the impact of return migrants on the risk of female circumcision driven by other characteristics than their host countries? It may well be thought, for instance, that returnee variables are correlated with current migrants and that our results are biased due to not controlling for contemporaneous emigration. Another potential channel could be that female returnees might be more likely than males to be against FGM, as might educated migrants. To check the robustness of our previous findings to these hypotheses, we first estimate the robustness of our results by including a current migrant variable in the regression. Second, we estimate the impact of educated and uneducated returnees,³¹ and the effect of male and female return migrants.³²

We add a variable to model 1 defining the proportion of current migrants in the total population of each locality, together with variables measuring the proportion of return migrants. We suspect that their impact, if any, is smaller. The fact of being a long distance away makes their interrelations with those left behind weaker. In addition, returnees are older than current migrants and therefore hold a higher rank in the social hierarchy, which should make their transfer of norms more effective than those potentially spread by current emigrants. The results are presented in Table 8. Columns (1) to (4) show the OLS estimations of the effect of both return and current migrants on the risk of FGM with the different disaggregations of the migration variables used in Table 4. In columns (5) and (6), the 2SLS results are presented solely for the total stocks of return and current migrants and for returnees and current migrants from Côte d'Ivoire.

We first observe that the inclusion of current migrants does not change the OLS coefficients of the returnee variable. The coefficients for these latter variables are very close to those

³¹ Uneducated returnees are those who never attended school.

³² Educated and uneducated as well as male and female return migrant variables are the percentage of each of these categories in the population of each village as a whole.

presented in Table 4. Second, as hypothesized, current migrants do not appear to have consistent effects on FGM practices. The effect of current migrants as a whole is not significant with either OLS estimation or 2SLS estimation.

When current migrants are disaggregated into different destination countries, only three in eight OLS coefficients are significant. Emigrants who live in countries where FGM is prohibited appear to raise the prevalence of FGM in their home locality (column (2) and (3)). The significance of this result yields only at 10% and seems to be driven by current migrants living in African countries. However, this result does not hold for emigrants in Côte d'Ivoire (column (4)). Interpretation of these results calls for caution as the estimations do not control for potential bias. Unfortunately, we are not able to correctly control for this endogeneity issue because we do not have enough good instruments when there are too many migration variations.

When we try to estimate unbiased coefficients of the current migrant variable irrespective of the country of residence (column (5)) or Côte d'Ivoire (column (6)), none of the coefficients is significant. However, interpretation of these results calls for caution as the instruments are not correlated with the emigration variables (columns (4) and (5) of Table 5), partial R-squared of the first stage regressions are low and some of the instrumental tests do not validate the empirical strategy (bottom panel, Table 8). Moreover, the way the population census measured current migration is too restrictive: only emigrants who left their household of origin just 5 years before 2009 were recorded by the census, and households where all members emigrated were not recorded. We therefore do not place too much importance on these results. Generally speaking, it can be concluded that the introduction of current migrant

variables does not change our baseline results and that current migrants have – if any – much less of a potential impact on FGM than return migrants.^{33,34}

The results of the effects of educated and uneducated return migrants and female and male return migrants are shown in Table 9. Columns (1) and (2) show the OLS coefficients of returnees depending on their level of education and gender composition respectively. Columns (3) and (4) present the 2SLS results. The proportions of educated and uneducated returnees in the locality's population do not have any statistically significant effect on FGM (col. (1)). These results hold when migration variables are instrumented (col. (3)). The coefficients associated with the shares of male and female returnees in the locality's population are not significant either (OLS, col. (2) and 2SLS, col. (4)). All of these results seem to confirm that what matters more with respect to the impact of returnees on the risk of FGM is where migrants come from rather than their socio-demographic characteristics.

A fourth potential concern may be that the impact of the number of returnees from Côte d'Ivoire on FGM prevalence might be linked to the presence in the locality and in the sample of 0-8 year old girls born in Côte d'Ivoire or who lived there and who have not been cut because they lived there. In that case, we do not measure a transfer of a norms-related mechanism, but merely the impact of being born or being a migrant in a country where FGM is less widespread. Unfortunately, the survey contains no information on the girls' place of birth either, nor on their migration experience. However, this information is contained in the census data: only 0.5% of 0-8 year old girls living in the sample localities were born in Côte d'Ivoire and 0.6% of

³³ Given that the current migrant variables can be correlated with the percentage of female household heads in the village, we test the robustness of this result when the latter variable is not included in the specification. It appears that the current migrant variables remain statistically non-significant (results available on request from the authors).

³⁴ The robustness of the baseline results should also be controlled for when internal migration is included in the regressions. Unfortunately, this information is not available from the census data. However, FGM on adult women (15 to 49 years old) in Mali is practiced equally in urban and rural areas (see DHS report, P. 294 <https://dhsprogram.com/pubs/pdf/FR286/FR286.pdf>) and practiced more in cities on young girls as shown by the data used in this analysis: 78.9% in urban areas as opposed to 75.0% in rural areas. This means that the baseline results should not be biased by this potential omitted variable.

them had migrated. This suggests that our results cannot be driven by these girls. Delving further, we run regressions separating the returnees from Côte d'Ivoire into returnees born in Côte d'Ivoire and those born in Mali.³⁵ Results are shown in Table 10. It seems that the results are not driven specifically by either of these two categories. Even when they are included together in the same regression, none is significant in the 2SLS specification (column (4), Table 10), and their respective impacts are negative and significant when they are tested separately in the OLS specification (columns (2) and (3)) and 2SLS (columns (5) and (6)).

6. Concluding remarks

This paper investigates the power of migration as a mechanism in the transmission of social norms, taking Mali and Female Genital Mutilation (FGM) as a case study. We use an original household-level survey coupled with census data to analyze the extent to which girls living in localities with high rates of return migrants are less prone to FGM.

Overall, the empirical evidence presented in this paper suggests that girls living in localities with return migrants are less likely to be circumcised than others. This result appears to be driven mainly by the percentage of returnees from Côte d'Ivoire. These results are robust to the control of endogenous bias and to different tests. They are not canceled out when current migration flows are taken into account, nor are they driven by the proportion of educated people among returnees or by female returnees. This suggests that what matters in the social norm process is not purely punitive action against those who practice FGM in the host country or information campaigns on the health consequences of FGM, but also the fact that migrants have lived in an African country where FGM is not customary. Malian migrants in Côte d'Ivoire can observe customs in an African society that does not pressure for girls to be cut and see that uncircumcised girls do not suffer from social exclusion problems, as this risk is often given to justify the practice in Africa. Consequently, these migrants come to realize that FGM is not

³⁵ And elsewhere, but they are very few.

really important as an individual identity marker. These results also suggest that the relative weight of the transmitters of new social norms in the population of origin is important to the social norm transfer mechanism. Migrants from Côte d'Ivoire make up the main flows of returnees to Mali, and are consequently considered by non-migrants to be more important and influential in the origin community than other return migrants.

The impact of returnees may be explained first by the change in their own attitude toward FGM, which can influence the behavior of stayers, and second by their capacity to convince stayers to change their FGM practices. Unfortunately, the direct effect of migration on returnees' behavior cannot be quantified using the data in this paper. The process of social remittances is complex. First, the migration experience has to provide a real opportunity for migrants to learn and want to adopt new values and social norms. Second, social transfer is effective only if the return migrants appear convincing to non-migrants. This could depend on both the number of "transmitters" of new norms in the population of origin and their social and economic standing. Understanding all these mechanisms is beyond the scope of this paper, but could be the focus of future research.

Compliance with Ethical Standards:

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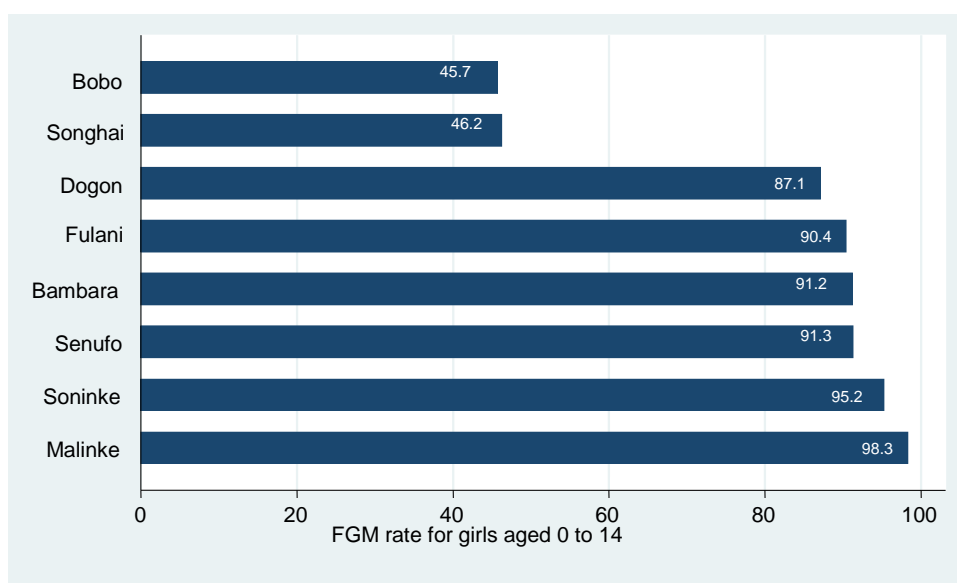
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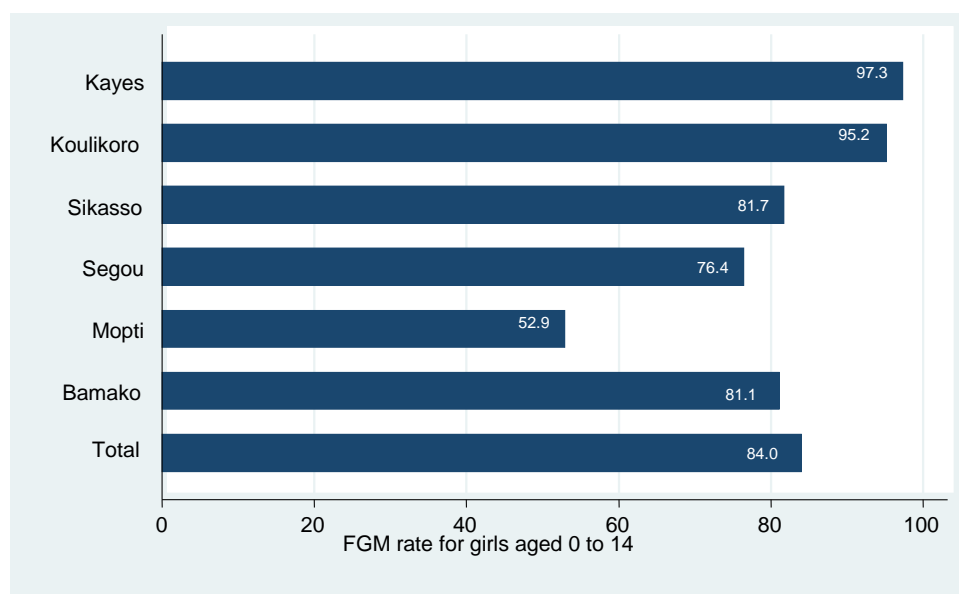
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Figure 1: FGM prevalence (0 to 14 years old) and household head ethnicity



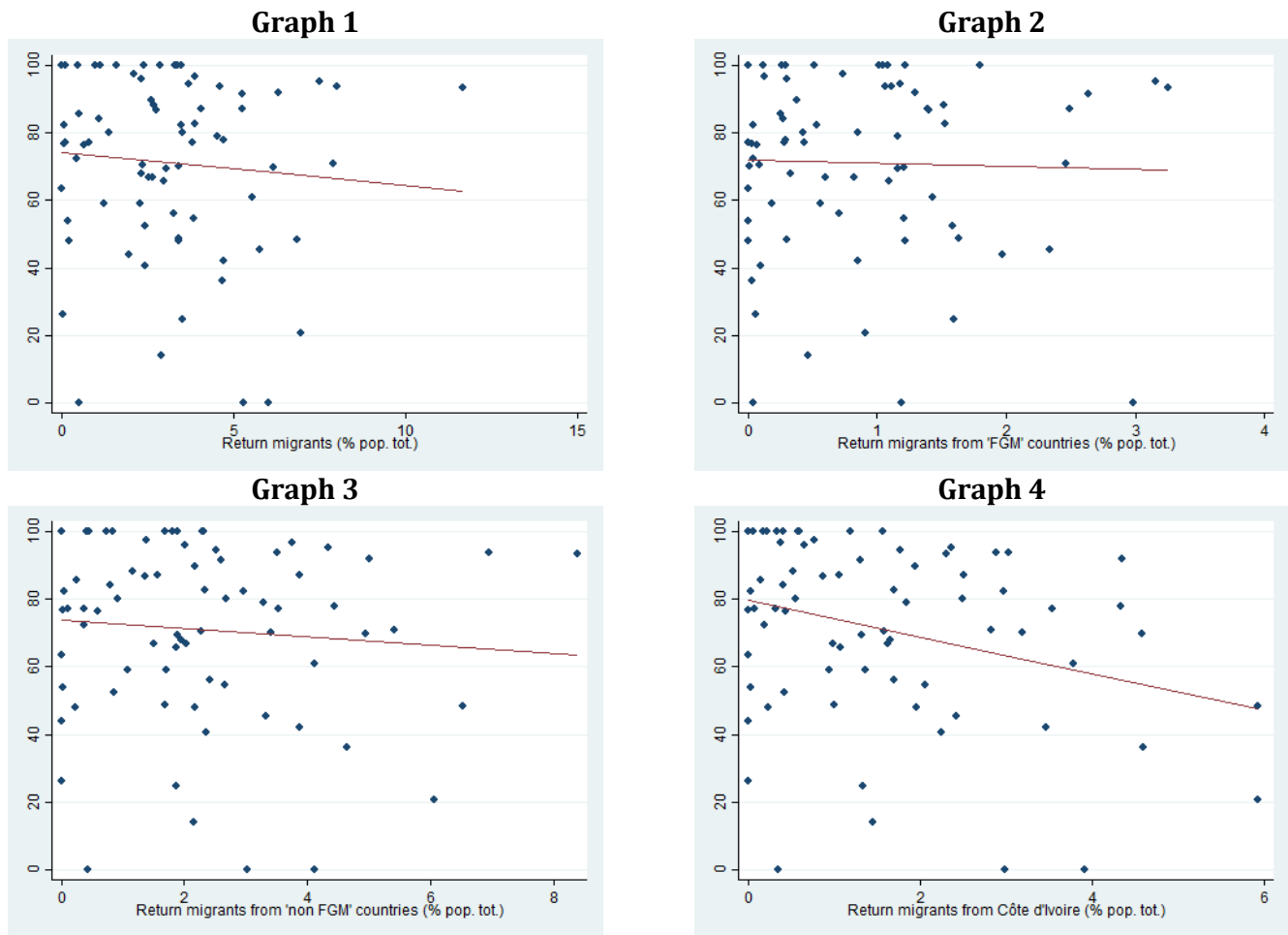
Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Figure 2: FGM prevalence by region (0 to 14 years old)



Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*).

Figure 3: FGM prevalence and return migration



Note: The plots represent the relationship between FGM prevalence among girls from 0 to 8 years old and return migration per locality (%). The horizontal axis represents the percentage of return migrants in each locality's population (Graph 1); the percentage of return migrants from African countries where FGM is practiced as much as in Mali – Burkina Faso, Chad, Djibouti, Egypt, Eritrea, Guinea, Equatorial Guinea, Mauritania, Niger and Nigeria – (Graph 2); the percentage of returnees from countries where FGM is practiced less than in Mali or even prohibited – European, American and Asian countries plus African countries excepting Burkina Faso, Chad, Djibouti, Egypt, Eritrea, Guinea, Equatorial Guinea, Mauritania, Niger and Nigeria – (Graph 3); and the percentage of returnees from Côte d'Ivoire (Graph 4).

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Table 1: Descriptive statistics, girls 0 to 8 years old.

Variable	Obs	Mean	Std. Dev.
Circumcised	1979	0.714	0.452
Girl's age	1979	4.163	2.522
Age of FGM			
0	1415	0.229	0.420
1	1415	0.047	0.212
2	1415	0.051	0.220
3	1415	0.040	0.195
4	1415	0.021	0.144
5	1415	0.033	0.179
During childhood	1415	0.578	0.494
Region of residence			
Kayes	1979	0.306	0.461
Koulikoro	1979	0.060	0.237
Sikasso	1979	0.236	0.425
Ségou	1979	0.141	0.348
Mopti	1979	0.168	0.374
Bamako	1979	0.089	0.285
Age of Household Head			
[25 - 49]	1979	0.418	0.493
[50 - [1979	0.454	0.498
Missing value	1979	0.005	0.071
Religion of HH			
Muslim	1979	0.818	0.386
Christian	1979	0.026	0.160
Animist	1979	0.032	0.176
Ethnic group of HH			
Bambara	1979	0.105	0.306
Bobo	1979	0.052	0.221
Dogon	1979	0.028	0.164
Malinke	1979	0.037	0.189
Fulani	1979	0.135	0.342
Soninke	1979	0.146	0.353
Songhai	1979	0.021	0.144
Senufo	1979	0.137	0.344
Other Ethnic group	1979	0.219	0.414
Ethnic group missing	1979	0.122	0.327
Mother attended school	1979	0.246	0.431
Does adult <i>j</i> know that FGM causes health issues for girls? (Yes=1)	1979	0.297	0.457
Does adult <i>j</i> know that FGM causes health issues in adulthood? (Yes=1)	1979	0.172	0.377
Has adult <i>j</i> ever been informed of the health issues caused by FGM? (Yes=1)	1979	0.427	0.495
Is adult <i>j</i> in favor of a law to ban FGM? (Yes=1)	1979	0.271	0.445

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*).

Table 2: Descriptive statistics, Adult sample.

Variable	Obs	Mean	Std. Dev.
Does adult <i>j</i> think that FGM gives girls advantages?	3159	0.575	0.494
Has adult <i>j</i> ever been informed of the health issues caused by FGM? (Yes=1)	3148	0.483	0.500
Does adult <i>j</i> know that FGM causes health issues for girls? (Yes=1)	3150	0.372	0.483
Does adult <i>j</i> know that FGM causes health issues in adulthood? (Yes=1)	3123	0.223	0.416
Is adult <i>j</i> in favor of a law that will prohibit FGM? (Yes=1)	3144	0.328	0.470
Female	3159	0.558	0.497
Age			
[15 – 24]	3159	0.360	0.480
[25 – 49]	3159	0.317	0.465
[50 –]	3159	0.299	0.458
Region of residence			
Kayes	3159	0.268	0.443
Koulikoro	3159	0.067	0.250
Sikasso	3159	0.254	0.435
Ségou	3159	0.142	0.350
Mopti	3159	0.198	0.398
Bamako	3159	0.071	0.257
Religion			
Muslim	3159	0.921	0.269
Christian	3159	0.030	0.171
Animist	3159	0.045	0.207
Ethnic group			
Bambara	3159	0.141	0.348
Bobo	3159	0.060	0.237
Dogon	3159	0.031	0.174
Malinke	3159	0.044	0.206
Fulani	3159	0.176	0.381
Soninke	3159	0.147	0.354
Songhai	3159	0.027	0.163
Senufo	3159	0.154	0.361
Other Ethnic group	3159	0.218	0.413
Ethnic group missing	3159	0.002	0.040
Adult attended school	3159	0.272	0.445
Listens to radio	3159	0.890	0.312
Watches TV	3159	0.699	0.459
Reads newspaper	3159	0.119	0.323

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*).

Table 3: Descriptive statistics, variables at the village/ district level

Variable	Mean	Std. Dev.	Min	Max
# of inhabitants	10,156	16,137	254	83,314
Region of location				
Kayes	0.253	0.438	0	1
Koulikoro	0.080	0.273	0	1
Sikasso	0.253	0.438	0	1
Ségou	0.147	0.356	0	1
Mopti	0.187	0.392	0	1
Bamako	0.080	0.273	0	1
Religion				
Muslim	0.908	0.212	0.021	1
Christian	0.039	0.121	0	0.906
Animist	0.048	0.148	0	0.785
Ethnic group				
Bambara	0.230	0.284	0	0.809
Bobo	0.011	0.046	0	0.402
Dogon	0.112	0.215	0	0.913
Malinke	0.069	0.190	0	0.799
Fulani	0.028	0.073	0	0.466
Soninke	0.055	0.169	0	0.888
Songhai	0.004	0.009	0	0.052
Senufo	0.106	0.246	0	0.864
Other Ethnic group	0.075	0.223	0	0.910
Literacy	0.293	0.166	0.015	0.6319
Farmers	0.236	0.180	0	0.719
Female Household head	0.142	0.085	0.011	45.753
Index of wealth	7.578	1.455	4.094	10.657
FGM rate (girls 0-8 years old)	0.711	0.263	0	100
Returnees irrespective of the country of migration	0.031	0.023	0	0.116
Returnees from countries where FGM is banned or practiced less than in Mali	0.022	0.018	0	0.084
Returnees from countries where FGM is practiced	0.009	0.008	0	0.033
Returnees from non-African countries	0.002	0.002	0	0.009
Returnees from African countries where FGM is banned or practiced less than in Mali	0.020	0.018	0	0.080
Returnees from Côte d'Ivoire	0.016	0.015	0	0.059
Returnees from other countries than Côte d'Ivoire	0.015	0.015	0	0.093
Current migrants	0.006	0.007	0	0.041
Dist. to the traditional Soninke migratory route (km)	117	125	3	523
Distance to the nearest railroad station (km)	209	148	0	641
Number of politically violent events in Côte d'Ivoire one year before the average per village year of return to Mali	12.927	49.690	0	243

75 observations; returnees variables are the number of individuals who have lived abroad for at least six months or were born abroad divided by the total village population Current migrants variable is the number of individuals who left their household of origin just 5 years before 2009 to live abroad divided by the total village population

Source: Authors' estimation based on RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Table 4: Impact of return migration on the risk of FGM

Returnees from	OLS				2SLS			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All host countries	-0.926 (0.643)				-2.259** (1.054)			
Countries where FGM is banned or practiced less than in Mali		-3.572*** (0.985)				-6.948*** (2.175)		
Countries where FGM is practiced		8.134*** (2.873)	8.218*** (2.922)			12.48 ^{OLS} *** (4.178)	11.84 ^{OLS} *** (3.821)	
Non-African countries where FGM is banned or not practiced			-1.538 (7.071)				-1.088 ^{OLS} (7.132)	
African countries where FGM is banned or practiced less than in Mali			-3.628*** (0.974)				-6.428*** (1.971)	
Côte d'Ivoire				-4.267*** (1.539)				-6.376** (2.823)
All countries except Côte d'Ivoire				2.337* (1.319)				3.173 ^{OLS} * (1.691)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,979	1,979	1,979	1,979	1,979	1,979	1,979	1,979
R-squared	0.526	0.534	0.534	0.532	0.523	0.527	0.529	0.530
Sargan (<i>p</i> -value)					0.5026	0.8260	0.8090	0.7251
Underidentification test (<i>p</i> -value)					0.0113	0.0033	0.0011	0.0077
F stat (Weak identification test critical values, 10% IV bias)					13.496 (9.08)	12.446 (9.08)	15.988 (9.08)	12.797 (9.08)
Partial R-squared for instruments					0.3878	0.2240	0.2893	0.2893

Robust standard errors clustered at the enumerator area level in parentheses. Returnees is return migrants as a share of village total population.

Control variables included: girl's age; sex, age, religion, ethnicity of the household head, mother's age and level of education, dichotomous variables indicating whether the household head knows that FGM can cause health issues for the girl now, or in adulthood, whether s/he has been informed about the issues of FGM and whether s/he is in favor of a law against FGM; shares of each ethnic group in the locality's population, share of farmers among the working locality population over six years old, share of literate over-12s in the population, and a composite index of wealth per capita; dichotomous variables at the regional level times the average girl's age of cutting in each village. Columns (5) to (8) present 2SLS estimations (with partial option), instrumenting returnee variables (column 5), returnees from countries where FGM is banned or practiced less than in Mali (column 6), returnees from African countries where FGM is banned or practiced less than in Mali (column 7) and returnees from Côte d'Ivoire (column 8) by distance to the traditional Soninke migratory route, distance to the nearest railroad station, and the number of politically violent events in Côte d'Ivoire one year before the average per village year of return to Mali.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, OLS: OLS estimator.

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Table 5: First-stage regression, Girl sample

	(1)	(2)	(3)	(4)	(5)	(6)
	Returnees	Returnees from countries where FGM is banned or practiced less than in Mali	Returnees from African countries where FGM is banned or practiced less than in Mali	Returnees from Côte d'Ivoire	Current migrants	Current migrants living in Côte d'Ivoire
VARIABLES						
Distance to the nearest railroad station	0.000405*** (6.53e-05)	0.000313*** (4.76e-05)	0.000329*** (4.65e-05)	0.000237*** (3.42e-05)	-1.29e-05 (1.82e-05)	-2.94e-06 (5.57e-06)
Distance to the traditional Soninke migratory route	-0.000538*** (0.000129)	-0.000370*** (0.000100)	-0.000394*** (9.38e-05)	-0.000273*** (8.17e-05)	5.80e-06 (2.74e-05)	-1.13e-05 (9.02e-06)
# of politically violent events in Côte d'Ivoire one year before the average year per village of return to Mali	2.54e-05 (2.56e-05)	3.95e-05* (2.21e-05)	4.74e-05** (1.98e-05)	5.31e-05*** (1.94e-05)	-1.26e-06 (4.71e-06)	-1.52e-06 (2.18e-06)
Observations	1,979	1,979	1,979	1,979	1,979	1,979
R-squared	0.821	0.774	0.772	0.766	0.713	0.676

Robust standard errors clustered at the enumerator area level in parentheses. Returnees is return migrants as a share of village total population. Current migrants are the number of current emigrants divided by the population of the village. Control variables included: girl's age; sex, age, religion, ethnicity of the household head, mother's age and level of education, dichotomous variables indicating whether the household head knows that FGM can cause health issues for the girl now, or in adulthood, whether s/he has been informed about the issues of FGM and whether s/he is in favor of a law against FGM; shares of each ethnic group in the locality's population, share of farmers among the working locality population over six years old, share of literate over-12s in the population, and a composite index of wealth per capita; dichotomous variables at the regional level times the average girl's age of cutting in each village. Additional control variables are included in regressions (2) to (6). They are returnees from countries where FGM is practiced as much as in Mali (2), returnees from African or non-African countries where FGM is practiced as much as in Mali (3), returnees from other countries than Ivory Coast (4), returnees (5), and current migrants in other countries than Ivory Coast and returnees (6).

* p<0.10, ** p<0.05, *** p<0.01.

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Table 6: Impact of return migration on FGM attitudinal/perception measures

	Y ₁ Does s/he think that FGM gives girls advantages? (Yes=1)		Y ₂ Does s/he know that FGM causes health issues for girls? (Yes=1)		Y ₃ Does s/he know that FGM causes health issues for girls in adulthood? (Yes=1)		Y ₄ Has s/he ever been informed of the health issues caused by FGM? (Yes=1)		Y ₅ Is s/he in favor of a law to ban FGM? (Yes=1)	
	OLS (1a)	2SLS (1b)	OLS (2a)	2SLS (2b)	OLS (3a)	2SLS (3b)	OLS (4a)	2SLS (4b)	OLS (5a)	2SLS (5b)
Migrants from or living in:										
All host countries	2.182*** (0.757)	3.640*** (1.173)	-0.395 (1.236)	0.542 (1.002)	-0.409 (0.988)	0.0303 (0.885)	0.501 (0.788)	2.304* (1.241)	1.898*** (0.555)	3.338*** (1.174)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,159	3,159	3,150	3,164	3,123	3,136	3,148	3,163	-0.146	3,159
R-squared	0.125	0.121	0.207	0.206	0.232	0.231	0.176	0.172	(0.465)	0.190
Sargan (<i>p</i> -value)		0.3568		0.4800		0.3272		0.3424		0.7372
Underidentification test (<i>p</i> -value)		0.0164		0.0160		0.0160		0.0158		0.0160
F stat (Weak identification test, critical values, 10% IV bias)		11.008 (9.08)		11.185 (9.08)		11.296 (9.08)		11.193 (9.08)		11.168 (9.08)
Partial R-squared		0.3032		0.3074		0.3081		0.3066		0.3065

Robust standard errors clustered at the enumerator area level in parentheses. Returnees is return migrants as a share of village total population. Control variables included: gender, age, religion, ethnicity and level of education of the interviewed adult, dichotomous variables indicating whether the adult listens to the radio, watches TV and reads newspapers; shares of each ethnic group in the locality's population, share of farmers among the working locality population over six years old, share of literate over-12s in the population, and a composite index of wealth per capita; dichotomous variables at the regional level times the average girl's age of cutting in each village. Columns (1b), (2b), (3b), (4b) and (5b) present 2SLS estimations (with partial option), instrumenting the returnee variable by distance to the traditional Soninke migratory route, distance to the nearest railroad station, and the number of politically violent events in Côte d'Ivoire one year before the average per village year of return to Mali.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Table 7: Impact of return migration from Côte d'Ivoire and other countries on FGM attitudinal/perception measures

	Y ₁ Does s/he think that FGM gives girls advantages? (Yes=1)		Y ₂ Does s/he know that FGM causes health issues for girls? (Yes=1)		Y ₃ Does s/he know that FGM causes health issues for girls in adulthood? (Yes=1)		Y ₄ Has s/he ever been informed of the health issues caused by FGM? (Yes=1)		Y ₅ Is s/he in favor of a law to ban FGM? (Yes=1)	
	OLS (1a)	2SLS (1b)	OLS (2a)	2SLS (2b)	OLS (3a)	2SLS (3b)	OLS (4a)	2SLS (4b)	OLS (5a)	2SLS (5b)
Return migrants from:										
Côte d'Ivoire	2.743** (1.138)	6.609*** (2.255)	3.483*** (1.046)	4.605 ** (2.098)	1.692* (0.958)	-2.941 (2.092)	2.930** (1.238)	5.389 ** (2.629)	2.871** (1.260)	5.298 ** (2.399)
All countries except Côte d'Ivoire	1.748 (1.200)	0.361 ^{OLS} (1.398)	-4.345** (2.037)	-4.751 ^{OLS} ** (2.228)	-2.547 (1.875)	-2.941 ^{OLS} (2.092)	-1.903 (1.206)	-2.793 ^{OLS} * (1.571)	1.097 (0.810)	0.221 ^{OLS} (1.149)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,159	3,159	3,164	3,164	3,136	3,136	3,163	3,163	3,159	3,159
R-squared	0.125	0.119	0.216	0.214	0.237	0.234	0.179	0.176	0.196	0.190
Sargan (<i>p</i> -value)		0.5371		0.6796		0.4330		0.1503		0.7268
Underidentification test (<i>p</i> -value)		0.0312		0.0303		0.0306		0.0307		0.0310
F stat (Weak identification test critical value, 10% IV bias)		7.548 (9.08)		7.631 (9.08)		0.0306 (9.08)		7.599 (9.08)		7.560 (9.08)
Côte d'Ivoire Partial R-squared		0.2346		0.2378		0.2377		0.2367		0.2363

Robust standard errors clustered at the enumerator area level in parentheses. Returnees is return migrants as a share of village total population. Control variables included: gender, age, religion, ethnicity and level of education of the interviewed adult, dichotomous variables indicating whether the adult listens to the radio, watches TV and reads newspapers; shares of each ethnic group in the locality's population, share of farmers among the working locality population over six years old, share of literate over-12s in the population, and a composite index of wealth per capita; dichotomous variables at the regional level times the average girl's age of cutting in each village. Columns (1b), (2b), (3b), (4b) and (5b) present 2SLS estimations (with partial option), instrumenting the returnee from Côte d'Ivoire variable by distance to the traditional Soninke migratory route, distance to the nearest railroad station, and the number of politically violent events in Côte d'Ivoire one year before the average per village year of return to Mali.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, OLS: OLS estimator.

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Table 8: Impact of return and current migration on the risk of FGM

Migrants from or living in:	OLS								IV			
	(1)	(2)	(3)	(4)	(5)	(6)						
	Return migrants	Current migrants	Return migrants	Current migrants	Return migrants	Current migrants	Return migrants	Current migrants	Return migrants	Current migrants	Return migrants	Current migrants
All host countries	-0.855 (0.622)	-2.746 (2.914)							0.194 (6.900)	90.84 (214.9)		
Countries where FGM is banned or practiced less than in Mali			-4.724*** (1.272)	16.72* (9.072)								
Countries where FGM is practiced			8.997*** (2.972)	-43.25** (21.30)	9.039*** (3.313)	-42.40* (22.55)						
Non-Afr. countries where FGM is banned or not practiced					-3.929 (10.34)	1.893 (15.29)						
African countries where FGM is banned or practiced less than in Mali					-4.606*** (1.134)	15.97* (8.715)						
Côte d'Ivoire							-4.880*** (1.651)	7.347 (12.87)			-7.126*** (2.552)	31.91 (51.80)
All countries except Côte d'Ivoire							2.688** (1.307)	-8.679 (5.698)			3.418 ^{OLS**} (1.477)	-15.26 ^{OLS} (13.59)
Control variables	Yes		Yes		Yes		Yes		Yes		Yes	
Observations	1,979		1,979		1,979		1,979		1,979		1,979	
R-squared	0.527		0.537		0.537		0.533		0.143		0.530	
Sargan (<i>p</i> -value)									0.7905		0.5105	
Underidentification test (<i>p</i> -value)									0.8578		0.2327	
F test (Weak identification test critical value, 10% IV bias)									0.107 (9.08)		1.483 (9.08)	
Partial R-squared for instruments:												
Returnees from Côte d'Ivoire									0.3878		0.2721	
Current migrants from Côte d'Ivoire									0.0115		0.0770	

Robust standard errors clustered at the enumerator area level in parentheses. Returnees is return migrants as a share of village total population. Current migrant variable is the ratio between the number of resident household individuals who left Mali in the five years before 2009 (since 2004) and the total population across all the localities. Control variables included: girl's age; sex, age, religion, ethnicity of the household head, mother's age and level of education, dichotomous variables indicating whether the household head knows that FGM can cause health issues for the girl now, or in adulthood, whether s/he has been informed about the issues of FGM and whether s/he is in favor of a law against FGM; shares of each ethnic group in the locality's population, share of farmers among the working locality population over six years old, share of literate over-12s in the population, a composite index of wealth per capita; dichotomous variables at the regional level times the average girl's age of cutting in each village. Column (6) presents 2SLS estimations (with partial option), instrumenting returnee variable and current migrant variable by distance to the traditional Soninke migratory route, distance to the nearest railroad station, and the number of politically violent events in Côte d'Ivoire one year before the average per village year of return to Mali.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, OLS: OLS estimator.

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Table 9: Robustness check

	OLS		2SLS	
	(1)	(2)	(3)	(4)
Returnees				
Educated returnees	-2.605 (2.842)		-3.871 (51.38)	
Uneducated returnees	-0.725 (1.104)		-2.433 (15.18)	
Male returnees		-2.089 (3.267)		-21.66 (26.00)
Female returnees		0.0799 (2.678)		20.79 (31.45)
Control variables	Yes	Yes	Yes	Yes
Observations	1,979	1,979	1,979	1,979
R-squared	0.527	0.526	0.524	0.485
Sargan (<i>p</i> -value)			0.3065	0.7064
Underidentification test (<i>p</i> -value)			0.8315	0.5994
F stat (Weak identification test critical value, 10% IV bias)			0.201 (13.41)	0.425 (13.43)
Partial R-squared for instruments:				
Educated returnees			0.1470	
Uneducated returnees			0.4163	
Male returnees				0.2670
Female returnees				0.4930

Robust standard errors clustered at the enumerator area level in parentheses. Returnees is return migrants as a share of village total population. Control variables included: girl's age; sex, age, religion, ethnicity of the household head, mother's age and level of education, dichotomous variables indicating whether the household head knows that FGM can cause health issues for the girl now, or in adulthood, whether s/he has been informed about the issues of FGM and whether s/he is in favor of a law against FGM; shares of each ethnic group in the locality's population, share of farmers among the working locality population over six years old, share of literate over-12s in the population, and a composite index of wealth per capita; dichotomous variables at the regional level times the average girl's age of cutting in each village. Columns (3) to (4) present 2SLS estimations (with partial option), instrumenting educated and uneducated returnee variables (column 3), and male and female returnees (column 4) by distance to the traditional Soninke migratory route, distance to the nearest railroad station, and the number of politically violent events in Côte d'Ivoire one year before the average per village year of return to Mali.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Table 10: Robustness check

	OLS			2SLS		
Returnees	(1)	(2)	(3)	(4)	(5)	(6)
Born in Côte d'Ivoire	-2.397 (2.091)	-4.523* (2.397)		6.273 (31.67)	-7.924** (3.653)	
Not born in but returning from Côte d'Ivoire	-6.756*** (2.217)		-7.877*** (2.296)	-53.41 (109.7)		-31.07** (15.51)
All countries except Côte d'Ivoire	2.543** (1.264)	1.457 (1.194)	2.358** (1.169)	11.12 ^{OLS} (18.46)	2.065 ^{OLS} (1.353)	7.394 ^{OLS*} (3.851)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,979	1,979	1,979	1,979	1,979	1,979
R-squared	0.533	0.529	0.532	0.331	0.526	0.475
Sargan (<i>p</i> -value)				0.9560	0.7214	0.9387
Underidentification test (<i>p</i> -value)				0.9023	0.0091	0.2364
F stat (Weak identification test critical value, 10% IV bias)				0.059 (9.08)	20.719 (9.08)	1.778 (9.08)
Partial R-squared for instruments:						
Born in Côte d'Ivoire				0.4146	0.4146	
Not born in but returning from Côte d'Ivoire				0.0460		0.0460

Robust standard errors clustered at the enumerator area level in parentheses. Returnees is return migrants as a share of village total population.

Control variables included: girl's age; sex, age, religion, ethnicity of the household head, mother's age and level of education, dichotomous variables indicating whether the household head knows that FGM can cause health issues for the girl now, or in adulthood, whether s/he has been informed about the issues of FGM and whether s/he is in favor of a law against FGM; shares of each ethnic group in the locality's population, share of farmers among the working locality population over six years old, share of literate over-12s in the population, and a composite index of wealth per capita; dichotomous variables at the regional level times the average girl's age of cutting in each village. Columns (4) to (6) present 2SLS estimations (with partial option), instrumenting being born in Côte d'Ivoire and not born in the country, but returning from Côte d'Ivoire variables by distance to the traditional Soninke migratory route, distance to the nearest railroad station, and the number of politically violent events in Côte d'Ivoire one year before the average per village year of return to Mali.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, OLS: OLS estimator.

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Appendices

Table A.1: Baseline model

	OLS				2SLS			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Girl's age (ref: 1)								
0	-0.0271 (0.0618)	-0.0335 (0.0620)	-0.0328 (0.0624)	-0.0216 (0.0612)	-0.0298 (0.0604)	-0.0409 (0.0607)	-0.0379 (0.0611)	-0.0204 (0.0598)
2	0.109*** (0.0412)	0.106** (0.0407)	0.106** (0.0410)	0.115*** (0.0411)	0.109*** (0.0406)	0.104*** (0.0399)	0.105*** (0.0401)	0.117*** (0.0405)
3	0.114*** (0.0431)	0.109** (0.0424)	0.110** (0.0429)	0.118*** (0.0433)	0.114*** (0.0424)	0.106** (0.0416)	0.107** (0.0424)	0.119*** (0.0427)
4	0.0801 (0.0515)	0.0763 (0.0517)	0.0769 (0.0525)	0.0829 (0.0523)	0.0783 (0.0502)	0.0716 (0.0504)	0.0738 (0.0518)	0.0832 (0.0515)
5	0.138** (0.0528)	0.134** (0.0520)	0.135** (0.0527)	0.144*** (0.0533)	0.136*** (0.0509)	0.129*** (0.0494)	0.131** (0.0510)	0.145*** (0.0524)
6	0.110** (0.0514)	0.105** (0.0512)	0.106** (0.0515)	0.113** (0.0512)	0.108** (0.0498)	0.0988** (0.0495)	0.101** (0.0502)	0.114** (0.0499)
7	0.188*** (0.0548)	0.180*** (0.0537)	0.181*** (0.0539)	0.188*** (0.0546)	0.186*** (0.0531)	0.173*** (0.0519)	0.175*** (0.0525)	0.187*** (0.0530)
8	0.127* (0.0670)	0.126* (0.0669)	0.127* (0.0674)	0.134* (0.0678)	0.127* (0.0651)	0.125* (0.0650)	0.126* (0.0657)	0.136** (0.0669)
Sex of HH (ref.: male)	-0.0163 (0.0206)	-0.00853 (0.0202)	-0.00899 (0.0202)	-0.0156 (0.0203)	-0.0124 (0.0197)	0.00130 (0.0208)	-0.00183 (0.0201)	-0.0136 (0.0197)
Age of HH (ref: 15 to 24 years old)								
25 to 49 years old	-0.123 (0.126)	-0.128 (0.122)	-0.126 (0.122)	-0.122 (0.122)	-0.126 (0.122)	-0.136 (0.116)	-0.129 (0.117)	-0.124 (0.118)
over 50 years old	-0.146 (0.128)	-0.154 (0.124)	-0.152 (0.124)	-0.151 (0.125)	-0.152 (0.124)	-0.166 (0.118)	-0.158 (0.119)	-0.155 (0.120)
missing information	-0.348 (0.236)	-0.363 (0.243)	-0.367 (0.245)	-0.413* (0.239)	-0.332 (0.226)	-0.354 (0.235)	-0.366 (0.241)	-0.435* (0.231)
Religion of HH (ref: Animist)								
Muslim	0.0983 (0.0808)	0.0905 (0.0756)	0.0892 (0.0754)	0.0923 (0.0752)	0.0945 (0.0769)	0.0806 (0.0711)	0.0792 (0.0713)	0.0879 (0.0716)
Christian	0.0556 (0.0940)	0.0570 (0.0933)	0.0586 (0.0929)	0.0569 (0.0916)	0.0573 (0.0911)	0.0602 (0.0917)	0.0635 (0.0905)	0.0583 (0.0888)

Table A.1 continued

	OLS				2SLS			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ethnic group of HH (ref: Bambara)								
Bobo	-0.0289 (0.0766)	-0.0467 (0.0796)	-0.0515 (0.0773)	-0.0523 (0.0735)	-0.0187 (0.0720)	-0.0460 (0.0772)	-0.0584 (0.0744)	-0.0580 (0.0702)
Ethnic group missing	-0.0303 (0.122)	-0.0555 (0.120)	-0.0539 (0.120)	-0.0384 (0.119)	-0.0318 (0.118)	-0.0738 (0.118)	-0.0662 (0.116)	-0.0427 (0.114)
Dogon	-0.233*** (0.0749)	-0.217*** (0.0720)	-0.217*** (0.0719)	-0.211*** (0.0710)	-0.226*** (0.0738)	-0.199*** (0.0734)	-0.203*** (0.0736)	-0.198*** (0.0740)
Malinke	0.122** (0.0571)	0.116** (0.0552)	0.113* (0.0570)	0.108** (0.0538)	0.132** (0.0584)	0.124** (0.0567)	0.116** (0.0560)	0.106** (0.0526)
Fulani	0.106** (0.0427)	0.0950** (0.0436)	0.0950** (0.0435)	0.101** (0.0422)	0.110*** (0.0398)	0.0926** (0.0421)	0.0929** (0.0418)	0.101** (0.0404)
Soninke	0.00493 (0.0371)	-0.0221 (0.0363)	-0.0234 (0.0388)	0.00132 (0.0363)	0.00320 (0.0368)	-0.0420 (0.0393)	-0.0413 (0.0386)	-0.00109 (0.0351)
Songhai	-0.00823 (0.107)	-0.0231 (0.108)	-0.0250 (0.107)	-0.0234 (0.109)	-0.00729 (0.106)	-0.0320 (0.108)	-0.0350 (0.108)	-0.0298 (0.109)
Senufo	0.0241 (0.0529)	0.00520 (0.0467)	0.00525 (0.0466)	0.00891 (0.0476)	0.0214 (0.0504)	-0.0105 (0.0433)	-0.00729 (0.0431)	0.000912 (0.0441)
Other ethnic group	0.0376 (0.0413)	0.0253 (0.0374)	0.0244 (0.0383)	0.0227 (0.0372)	0.0512 (0.0403)	0.0338 (0.0363)	0.0297 (0.0366)	0.0224 (0.0349)
Mother's age (ref: 15 to 24 years)								
25 to 49 years old	0.308*** (0.0850)	0.313*** (0.0853)	0.317*** (0.0860)	0.322*** (0.0955)	0.289*** (0.0760)	0.293*** (0.0743)	0.307*** (0.0804)	0.320*** (0.0943)
Over 50 years old	0.356*** (0.0841)	0.362*** (0.0853)	0.366*** (0.0870)	0.376*** (0.0964)	0.342*** (0.0742)	0.348*** (0.0743)	0.361*** (0.0815)	0.379*** (0.0953)
Missing information	0.380*** (0.0827)	0.388*** (0.0834)	0.392*** (0.0835)	0.400*** (0.0946)	0.363*** (0.0735)	0.373*** (0.0720)	0.387*** (0.0773)	0.401*** (0.0933)
Mother attended school	0.00377 (0.0308)	-0.000565 (0.0314)	-0.000157 (0.0314)	0.0169 (0.0306)	0.00726 (0.0302)	0.000806 (0.0308)	0.00158 (0.0301)	0.0244 (0.0318)
Does adult <i>j</i> know that FGM causes health issues for girls? (Yes=1)	-0.0308 (0.0538)	-0.0202 (0.0538)	-0.0200 (0.0541)	-0.0194 (0.0582)	-0.0317 (0.0515)	-0.0145 (0.0523)	-0.0151 (0.0524)	-0.0148 (0.0590)
Does adult <i>j</i> know that FGM causes health issues in adulthood? (Yes=1)	0.0884 (0.0543)	0.0792 (0.0559)	0.0790 (0.0560)	0.0786 (0.0574)	0.0860 (0.0530)	0.0702 (0.0561)	0.0715 (0.0555)	0.0731 (0.0582)
Has adult <i>j</i> ever been informed about FGM? (Yes=1)	-0.0221 (0.0273)	-0.0199 (0.0276)	-0.0201 (0.0276)	-0.0189 (0.0268)	-0.0207 (0.0269)	-0.0167 (0.0279)	-0.0177 (0.0276)	-0.0168 (0.0262)
Is adult <i>j</i> in favor of a law to ban FGM? (Yes=1)	-0.0509* (0.0279)	-0.0483* (0.0281)	-0.0470 (0.0286)	-0.0390 (0.0282)	-0.0471* (0.0269)	-0.0417 (0.0274)	-0.0397 (0.0279)	-0.0319 (0.0284)

Table A.1 continued

	OLS				2SLS			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables at the locality level								
Religion (ref: Animist)								
Muslim	0.0200 (0.299)	0.167 (0.273)	0.165 (0.273)	0.0449 (0.221)	0.00151 (0.254)	0.242 (0.216)	0.221 (0.224)	0.0474 (0.181)
Christian	-0.288** (0.139)	-0.0863 (0.166)	-0.0975 (0.164)	-0.230** (0.104)	-0.363*** (0.133)	-0.0453 (0.203)	-0.0820 (0.185)	-0.239** (0.104)
Ethnic group (ref: Bambara)								
Malinke	-0.304* (0.172)	-0.394** (0.164)	-0.406*** (0.148)	-0.361** (0.158)	-0.342* (0.175)	-0.501*** (0.166)	-0.510*** (0.169)	-0.405** (0.169)
Fulani	-0.281*** (0.0922)	-0.227*** (0.0823)	-0.230*** (0.0820)	-0.270*** (0.0881)	-0.282*** (0.0911)	-0.192** (0.0905)	-0.207** (0.0847)	-0.265*** (0.0877)
Soninke	0.0531 (0.0680)	0.0780 (0.0718)	0.0687 (0.0807)	-0.0881 (0.0807)	0.107 (0.0956)	0.160 (0.124)	0.120 (0.121)	-0.126 (0.0964)
Songhai	-0.118 (0.246)	-0.105 (0.230)	-0.101 (0.230)	-0.153 (0.258)	-0.199 (0.276)	-0.192 (0.253)	-0.165 (0.243)	-0.205 (0.281)
Dogon	0.522*** (0.157)	0.517*** (0.158)	0.505*** (0.158)	0.580*** (0.167)	0.555*** (0.157)	0.555*** (0.171)	0.517*** (0.161)	0.622*** (0.174)
Tamacheq	-3.751** (1.767)	-5.927*** (1.992)	-5.988*** (1.980)	-3.829** (1.685)	-3.147* (1.784)	-6.620*** (1.985)	-6.640*** (1.980)	-3.582** (1.626)
Senufo	0.0891 (0.105)	0.0379 (0.0889)	0.0389 (0.0879)	-0.0125 (0.108)	0.0298 (0.110)	-0.0683 (0.0964)	-0.0447 (0.0896)	-0.0853 (0.127)
Bobo	-0.0967 (0.264)	-0.119 (0.239)	-0.108 (0.237)	-0.173 (0.217)	-0.0890 (0.235)	-0.124 (0.210)	-0.0955 (0.208)	-0.204 (0.198)
Literacy	-0.00212 (0.00381)	-0.00308 (0.00366)	-0.00317 (0.00377)	-0.00280 (0.00351)	-0.00117 (0.00397)	-0.00256 (0.00381)	-0.00287 (0.00386)	-0.00267 (0.00342)
Farmers	-0.00187 (0.00203)	-0.00102 (0.00190)	-0.00109 (0.00199)	-0.000872 (0.00192)	-0.00131 (0.00211)	0.000217 (0.00212)	-0.000202 (0.00223)	-0.000170 (0.00209)
Female household head	-0.00351 (0.00326)	-0.00221 (0.00273)	-0.00246 (0.00286)	-0.000466 (0.00315)	-0.00418 (0.00321)	-0.00217 (0.00314)	-0.00282 (0.00300)	0.000577 (0.00334)
Wealth index	0.0292 (0.0285)	0.0208 (0.0273)	0.0207 (0.0268)	0.0241 (0.0257)	0.0361 (0.0305)	0.0238 (0.0306)	0.0230 (0.0284)	0.0251 (0.0254)

Table A.1 continued

	OLS				2SLS			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Returnees from countries where FGM is practiced								
All host countries	-0.926 (0.643)				-2.259** (1.054)			
Countries where FGM is banned or not practiced		-3.572*** (0.985)				-6.948*** (2.175)		
Countries where FGM is practiced		8.134*** (2.873)	8.218*** (2.922)			12.48 ^{OLS} *** (4.178)	11.84 ^{OLS} *** (3.821)	
Non-African countries where FGM is banned or not practiced			-1.538 (7.071)				-1.088 (7.132)	
African countries where FGM is banned or practiced less than in Mali			-3.628*** (0.974)				-6.428 ^{OLS} *** (1.971)	
Côte d'Ivoire				-4.267*** (1.539)				-6.376** (2.823)
All countries except Côte d'Ivoire				2.337* (1.319)				3.173 ^{OLS} * (1.691)
Constant	0.553* (0.318)	0.417 (0.305)	0.421 (0.305)	0.493* (0.264)				
Observations	1,979	1,979	1,979	1,979	1,979	1,979	1,979	1,979
R-squared	0.526	0.534	0.534	0.532	0.523	0.527	0.529	0.530

Robust standard errors clustered at the enumerator area level in parentheses. Returnees is return migrants as a share of village total population. Coefficients associated with the dichotomous variables at the regional level times the average girl's age of cutting in each village are included, but not shown. 2SLS estimations with partial option (columns 5 to 7) instrument returnee variables by distance to the traditional Soninke migratory route, distance to the nearest railroad station, and the number of politically violent events in Côte d'Ivoire one year before the average per village year of return to Mali.

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Table A.2: baseline model on FGM attitudinal/perception measures

VARIABLES	OLS					2SLS				
	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Gender (ref: male)	0.0567** (0.0245)	0.0453 (0.0318)	0.0612*** (0.0166)	0.0197 (0.0202)	0.0275 (0.0226)	0.0561** (0.0242)	0.0451 (0.0314)	0.0611*** (0.0163)	0.0193 (0.0202)	0.0273 (0.0222)
Age of HH (ref: 15 to 24 years old)										
25 to 49 years old	0.0824 (0.120)	0.0437 (0.0929)	-0.0372 (0.127)	0.0626 (0.114)	0.0539 (0.0687)	0.0876 (0.118)	0.0473 (0.0929)	-0.0355 (0.126)	0.0688 (0.114)	0.0586 (0.0662)
over 50 years old	0.162 (0.129)	-0.0446 (0.0812)	-0.102 (0.124)	-0.000185 (0.104)	-0.00678 (0.0623)	0.163 (0.128)	-0.0437 (0.0807)	-0.102 (0.122)	0.00129 (0.104)	-0.00566 (0.0601)
Missing information	-0.0322 (0.112)	0.00492 (0.0901)	-0.0751 (0.114)	0.0243 (0.103)	-0.00858 (0.0634)	-0.0285 (0.111)	0.00755 (0.0901)	-0.0739 (0.113)	0.0289 (0.103)	-0.00517 (0.0612)
Religion (ref: Animist)										
Muslim	0.110 (0.0960)	0.0533 (0.0854)	0.0557 (0.0511)	0.0303 (0.0724)	-0.145** (0.0707)	0.115 (0.0943)	0.0561 (0.0847)	0.0570 (0.0503)	0.0353 (0.0718)	-0.141** (0.0702)
Christian	-0.200* (0.120)	0.0370 (0.120)	-0.000992 (0.0813)	0.148 (0.119)	0.121 (0.121)	-0.203* (0.117)	0.0351 (0.118)	-0.00182 (0.0798)	0.144 (0.118)	0.118 (0.121)
Ethnic group (ref: Bambara)										
Bobo	(0.146)	(0.0964)	(0.0844)	(0.176)	(0.0779)	-0.278* (0.143)	0.0418 (0.0962)	0.147* (0.0841)	-0.0362 (0.176)	0.270*** (0.0786)
Ethnic group missing	-0.0476 (0.189)	0.0516 (0.197)	0.106 (0.167)	0.433*** (0.0698)	-0.188** (0.0938)	-0.0568 (0.189)	0.0527 (0.197)	0.106 (0.166)	0.435*** (0.0682)	-0.187** (0.0882)
Dogon	-0.130 (0.107)	-0.00317 (0.115)	0.0628 (0.120)	0.0608 (0.0875)	0.0397 (0.161)	-0.127 (0.103)	-0.00140 (0.115)	0.0636 (0.119)	0.0640 (0.0894)	0.0421 (0.161)
Malinke	-0.0361 (0.0791)	-0.143** (0.0560)	-0.0944** (0.0448)	0.0177 (0.0634)	-0.0547 (0.0584)	-0.0418 (0.0797)	-0.147*** (0.0553)	-0.0962** (0.0429)	0.0109 (0.0664)	-0.0600 (0.0576)
Peulh	-0.0108 (0.0360)	-0.137** (0.0584)	-0.0705 (0.0505)	0.0794 (0.0728)	0.00684 (0.0441)	-0.0141 (0.0360)	-0.139** (0.0569)	-0.0715 (0.0496)	0.0754 (0.0715)	0.00369 (0.0437)
Soninke	-0.129*** (0.0408)	-0.182*** (0.0635)	0.00389 (0.0628)	-0.102 (0.0847)	-0.0217 (0.0550)	-0.129*** (0.0408)	-0.183*** (0.0627)	0.00376 (0.0619)	-0.102 (0.0877)	-0.0219 (0.0556)
Sonrhahi	-0.374*** (0.0711)	0.105 (0.0772)	0.186*** (0.0450)	0.140 (0.107)	0.197*** (0.0686)	-0.370*** (0.0705)	0.108 (0.0770)	0.188*** (0.0450)	0.145 (0.106)	0.201*** (0.0675)

Table A.2 continued

VARIABLES	OLS					2SLS				
	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Senufo	-0.0242 (0.0565)	-0.144** (0.0571)	-0.0770 (0.0544)	0.000333 (0.0526)	-0.0237 (0.0528)	-0.0241 (0.0600)	-0.144*** (0.0554)	-0.0770 (0.0535)	0.000718 (0.0503)	-0.0233 (0.0514)
Other Ethnic group	-0.0406 (0.0659)	-0.131 (0.0833)	-0.0382 (0.0616)	0.0273 (0.0754)	0.0850 (0.0563)	-0.0570 (0.0647)	-0.143* (0.0810)	-0.0435 (0.0605)	0.00721 (0.0722)	0.0697 (0.0553)
Education (ref: no school)										
Attended school	-0.0842* (0.0443)	0.0645* (0.0348)	0.0799*** (0.0290)	0.0923*** (0.0320)	0.126*** (0.0430)	-0.0862** (0.0440)	0.0631* (0.0345)	0.0793*** (0.0288)	0.0900*** (0.0324)	0.124*** (0.0426)
Listens to radio (Yes=1)	0.0661 (0.0427)	0.0478 (0.0339)	0.0354 (0.0255)	0.114*** (0.0367)	0.0197 (0.0453)	0.0668 (0.0419)	0.0485 (0.0338)	0.0356 (0.0253)	0.116*** (0.0365)	0.0204 (0.0452)
Watches TV (Yes=1)	0.0230 (0.0559)	0.0775** (0.0336)	0.0904*** (0.0197)	0.137*** (0.0335)	0.0405 (0.0366)	0.0249 (0.0557)	0.0785** (0.0325)	0.0909*** (0.0191)	0.138*** (0.0327)	0.0419 (0.0353)
Reads newspaper (yes=1)	-0.0271 (0.0568)	0.195*** (0.0395)	0.217*** (0.0330)	0.0879*** (0.0304)	0.0978** (0.0402)	-0.0294 (0.0566)	0.193*** (0.0396)	0.216*** (0.0330)	0.0855*** (0.0305)	0.0959** (0.0396)
Variables at locality level										
Religion (ref: Animist)										
Muslim	0.0689 (0.227)	-0.0864 (0.183)	-0.0964 (0.138)	0.334 (0.247)	-0.00777 (0.381)	0.0929 (0.192)	-0.0705 (0.176)	-0.0887 (0.144)	0.362 (0.267)	0.0143 (0.407)
Christian	0.311 (0.192)	0.0298 (0.197)	0.141 (0.175)	0.0764 (0.174)	0.0679 (0.201)	0.403** (0.180)	0.0918 (0.181)	0.170 (0.157)	0.187 (0.190)	0.153 (0.221)
Ethnic group (ref: Bambara)										
Malinke	0.474** (0.200)	0.228 (0.220)	-0.139 (0.202)	0.253 (0.239)	0.0695 (0.164)	0.501*** (0.194)	0.247 (0.220)	-0.130 (0.198)	0.286 (0.244)	0.0953 (0.167)
Fulani	-0.0810 (0.151)	0.0563 (0.135)	0.127 (0.114)	0.145 (0.133)	0.102 (0.111)	-0.0844 (0.153)	0.0540 (0.133)	0.126 (0.112)	0.141 (0.129)	0.0988 (0.110)
Soninke	-0.0726 (0.104)	0.107 (0.0868)	0.0137 (0.0729)	0.153* (0.0855)	-0.130** (0.0632)	-0.143 (0.119)	0.0589 (0.0795)	-0.00858 (0.0706)	0.0680 (0.0984)	-0.194** (0.0781)
Songhai	0.572 (0.399)	-0.238 (0.338)	-0.525* (0.306)	-0.00855 (0.402)	-0.138 (0.258)	0.636 (0.399)	-0.196 (0.329)	-0.505* (0.295)	0.0663 (0.415)	-0.0806 (0.258)

Table A.2 continued

VARIABLES	OLS					2SLS				
	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dogon	0.105 (0.206)	-0.509*** (0.181)	-0.299* (0.160)	-0.212 (0.212)	0.0174 (0.173)	0.0654 (0.208)	-0.536*** (0.190)	-0.312* (0.171)	-0.260 (0.219)	-0.0194 (0.181)
Tamacheq	1.447 (1.656)	-6.836*** (1.312)	-3.610*** (1.295)	-0.200 (1.752)	-5.176*** (1.541)	0.957 (1.732)	-7.175*** (1.311)	-3.765*** (1.274)	-0.798 (1.927)	-5.634*** (1.575)
Senufo	0.194** (0.0955)	-0.243** (0.0966)	-0.246*** (0.0864)	0.0814 (0.135)	-0.134 (0.141)	0.259*** (0.100)	-0.199** (0.0948)	-0.226** (0.0894)	0.159 (0.141)	-0.0744 (0.139)
Bobo	-0.115 (0.200)	-0.0516 (0.214)	0.0180 (0.164)	0.249 (0.227)	0.0333 (0.300)	-0.135 (0.177)	-0.0650 (0.203)	0.0118 (0.160)	0.226 (0.248)	0.0150 (0.323)
Literacy	-0.00816*** (0.00302)	0.00352 (0.00329)	0.00128 (0.00307)	0.00730** (0.00309)	0.000444 (0.00182)	-0.00917*** (0.00333)	0.00284 (0.00320)	0.000957 (0.00301)	0.00607* (0.00338)	-0.000493 (0.00203)
Farmers	6.64e-05 (0.00185)	0.00192 (0.00237)	-0.00215 (0.00203)	0.00482* (0.00243)	0.00142 (0.00165)	-0.000412 (0.00183)	0.00158 (0.00222)	-0.00231 (0.00196)	0.00421* (0.00236)	0.000959 (0.00151)
Female household head	-0.00181 (0.00365)	-0.00472 (0.00462)	-0.00124 (0.00407)	2.12e-06 (0.00440)	0.00100 (0.00325)	-0.00113 (0.00379)	-0.00426 (0.00450)	-0.00102 (0.00390)	0.000836 (0.00453)	0.00165 (0.00320)
Wealth index	0.0776*** (0.0290)	0.000885 (0.0286)	-0.00414 (0.0267)	-0.0282 (0.0317)	0.0193 (0.0236)	0.0711** (0.0311)	-0.00368 (0.0286)	-0.00628 (0.0265)	-0.0363 (0.0314)	0.0131 (0.0222)
Returnees	2.182*** (0.757)	-0.445 (1.216)	-0.434 (0.982)	0.548 (0.792)	1.991*** (0.577)	3.640*** (1.173)	0.542 (1.002)	0.0303 (0.885)	2.304* (1.241)	3.338*** (1.174)
Constant	0.278 (0.283)	0.282 (0.424)	0.201 (0.239)	0.0194 (0.413)	-0.170 (0.470)					
Observations	3,159	3,164	3,136	3,163	3,159	3,159	3,164	3,136	3,163	3,159
R-squared	0.125	0.209	0.234	0.176	0.196	0.121	0.206	0.231	0.172	0.190

Robust standard errors clustered at the enumerator area level in parentheses. Returnees is return migrants as a share of village total population. Coefficients associated with the dichotomous variables at the regional level that times the average girl's age of cutting in each village are included but not shown. Columns (6) to (10) present 2SLS estimations (with partial option), instrumenting the returnee variable by distance to the traditional Soninke migratory route, distance to the nearest railroad station, and the number of politically violent events in Côte d'Ivoire one year before the average per village year of return to Mali.

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).

Table A.3 First-stage regression, Adult sample

VARIABLES	(1) Returnees	(2) Returnees from Côte d'Ivoire	(3) Current migrants
Distance to the nearest railroad station	0.000384*** (6.79e-05)	0.000203*** (4.87e-05)	-1.17e-05 (2.00e-05)
Distance to the traditional Soninke migratory route	-0.000501*** (0.000140)	-0.000209* (0.000109)	1.76e-06 (2.66e-05)
Number of politically violent events in Côte d'Ivoire one year before the average year per village of return to Mali	2.46e-05 (2.87e-05)	3.86e-05 (3.23e-05)	1.24e-06 (6.95e-06)
Observations	3,159	3,159	3,159
R-squared	0.760	0.713	0.678

Robust standard errors clustered at the enumerator area level in parentheses. Returnees is return migrants as a share of village total population. Current migrant variable is the ratio between the number of resident household individuals who left Mali in the five years before 2009 (since 2004) and the total population across all the localities. Control variables included: gender, age, religion, ethnicity and level of education of the interviewed adult, dichotomous variables indicating whether the adult listens to the radio, watches TV and reads newspapers; shares of each ethnic group in the locality's population, share of farmers among the working locality population over six years old, share of literate over-12s in the population, and a composite index of wealth per capita; dichotomous variables at the regional level times the average girl's age of cutting in each village. When returnees from Côte d'Ivoire are instrumented (column 2), returnees from other countries form an additional control variable.

Source: Authors' estimation based on ENEM-2009 (*Enquête Nationale sur l'Excision au Mali*) and RGPH-2009 (*Recensement Général de la Population et de l'Habitat*).