Unprogrammed Abandonment of Female Genital Mutilation/Cutting

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Abstract

The sparsity of historical data on Female Genital Mutilation/Cutting (FGM/C) poses a challenge for researchers who seek to identify long-term trends in FGM/C participation or evaluate the role of macro-level factors that may predict FGM/C abandonment. This study introduces a means of overcoming this barrier and provides a new cross-national dataset of FGM/C prevalence over time. We compile self-reported FGM/C data from more than 700,000 women born in 23 African countries between 1940 and 2002 who subsequently participated in Demographic and Health Surveys (DHS) or Multiple Indicator Cluster Surveys (MICS). These data allow us to estimate the proportion of women born in each country-year who eventually underwent FGM/C. We then use these estimates to assess country-level trends in FGM/C prevalence and to explore macro-level factors that may contribute to the persistence or decline of the practice, including population density, female education rates, political stability, laws banning the practice, economic development, democratization, and international exposure. Our results and approach should facilitate additional research on the mechanisms through which economic growth, institutional changes, and international engagement can influence the abandonment of FGM/C and other harmful social norms.

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1 Introduction

In 1938 Jomo Kenyatta, leader of the Kenyan anti-colonial movement and later the country's first president, described female genital mutilation/cutting[1] as "an institution which has enormous educational, social, moral and religious implications" for the Kikuyu people, whose "moral code... [is] bound up with this custom" (Kenyatta 1961). Despite Kenyatta's claim, the prevalence of FGM/C in Kenya began to decline in the 1960s and cutting rates among Kikuyu girls aged 0-14 now approach zero (see Figure 1). Kenya's long-term reduction of FGM/C is not unique—other countries, such as Burkina Faso and Nigeria, have observed similar declines in the practice (see Figure 3). Neither, however, are these downward trends universal. In Guinea, Mali, Sudan, and many other countries, FGM/C continues at much the same levels as it has for decades (see Figure 3). Why has a practice that was once considered an essential part of life across many communities diminished in some locations but persisted in others?

Roughly three million young girls are at risk of undergoing FGM/C each year (WHO 2008). Non-governmental organizations (NGOs) and other members of the international community spend tens of millions of dollars in efforts to understand and address the practice. Sizable literatures explore the prevalence of FGM/C (e.g., Adeokun et al. 2006), its deleterious health consequences (e.g., Berg, Underland, and Odgaard-Jensen 2014; Reisel and Creighton 2015), and the covariates associated with its practice at the individual and community level (e.g. Achia 2014; Setegn, Lakew, and Deribe 2016). Despite broad scholarly interest in FGM/C, however, limited research identifies factors that predict sustained participation in the practice across countries over time (see Kandala et al. 2018 for a recent exception). The few studies that analyze cross-national variation in FGM/C prevalence focus on individual- and household-level characteristics without considering macro-level factors that may affect entire countries (Hayford and Trinitapoli 2011; Modrek and Liu 2013).

One reason for the dearth of attention to macro-level characteristics is the sparsity of historical data on FGM/C. Because surveys asking about FGM/C are a relatively recent phenomenon, researchers face significant barriers when they seek to identify long-term trends in FGM/C preva-

[1] Henceforth FGM/C, also sometimes known as female circumcision or cutting.

Figure 1: Estimated FGM/C Prevalence in Kenya

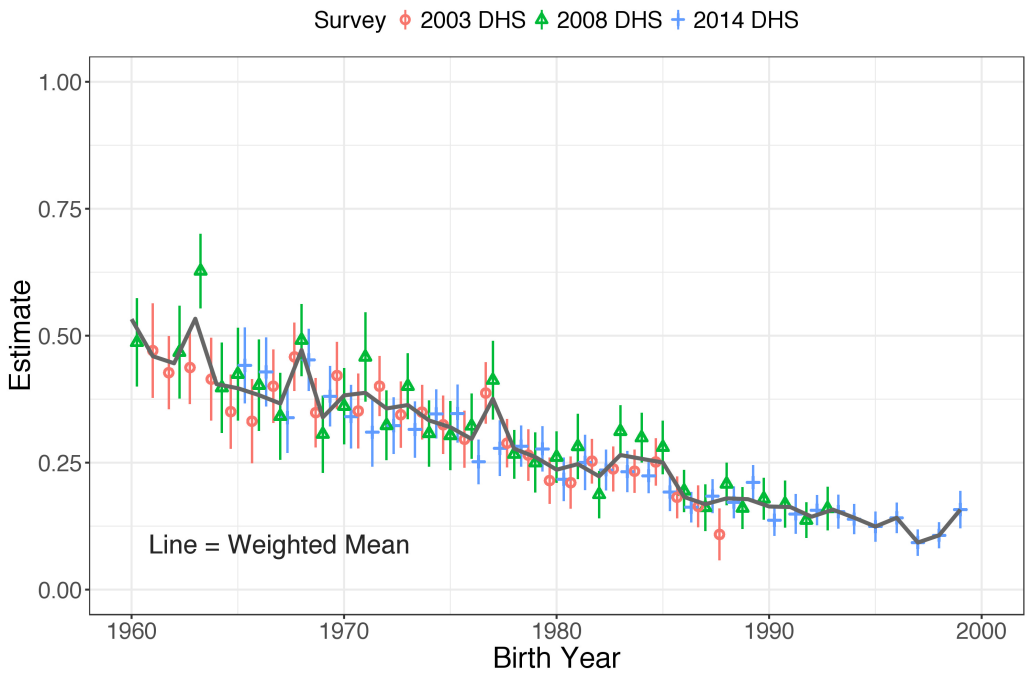


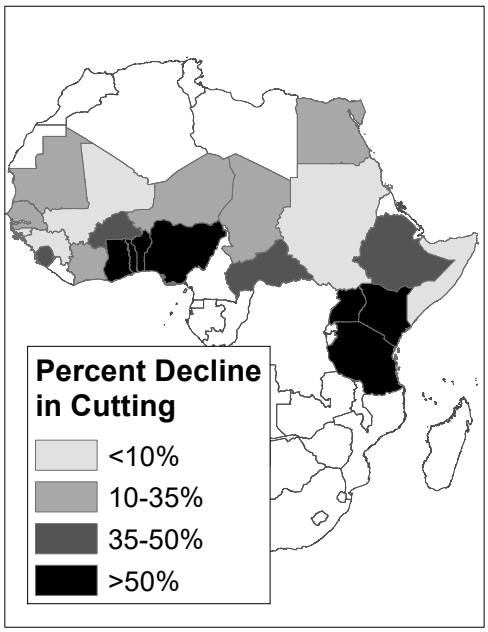
Figure 1 plots estimated FGM/C rates among Kenyan women born between 1960 and 1999 using DHS data gathered in 2003, 2008, and 2014. Confidence intervals extend two standard errors above and below the estimate for each survey-birth-cohort. The dark line plots the weighted mean after combining equivalent birth-cohorts from overlapping surveys. For a full explanation of how we created this figure, see the "Data and Methods" section.

lence or to evaluate the influence of historical and country-level factors on FGM/C participation. This study introduces a means of overcoming this barrier. Although we lack contemporaneous evidence of cutting during earlier time periods, we compile self-reported FGM/C data from more than 700,000 women born between 1940 and 2002 who subsequently participated in Demographic and Health Surveys (DHS) or Multiple Indicator Cluster Surveys (MICS).[2] Because survey responses regarding FGM/C status are highly reliable (Morison et al. 2001; UNICEF 2013), these data allow us to estimate the proportion of women born each year within each surveyed country who were eventually cut. We use these estimates to assess country-level trends in FGM/C prevalence and to explore several macro-level factors that may contribute to the persistence or decline of FGM/C over time.

[2] We use data from 75 distinct DHS and MICS surveys conducted between 1994 and 2017. See Appendix B for a full list of surveys and countries included.

This study makes several contributions. First, by providing more granular measures of historical trends in FGM/C participation, this paper draws attention to the process of *unprogrammed* FGM/C abandonment—that is, declines in FGM/C participation that occurred prior to the widespread introduction of large, programmatic efforts by NGOs, donor states, and the international community. While the process of FGM/C abandonment is complex and often context-specific, our analysis provides evidence that declines at the national level have in many cases occurred prior to sustained intervention by governments, NGOs, and other external actors. This study emphasizes the importance of studying mechanisms that motivate shifts away from long-held traditions even in the absence of significant governmental or external pressure.

Figure 2: Percentage Decline of FGM/C over Time



Found by taking one minus the quotient of prevalence in 1960 and most recent cohorts for each country.

Second, this study should draw attention to and facilitates future research on the question of whether macro-level factors influence FGM/C participation. To this end, we provide an initial, exploratory analysis of whether various country-level conditions contemporaneous to a women's birth predict the rate at which she and other members of her birth-cohort will undergo FGM/C. Although the findings are exploratory and intended primarily to motivate further research, they neverthe-

less provide suggestive evidence that country-level changes in FGM/C are associated with levels of population density, changes in female education, political stability, and laws banning the practice. In contrast, we find little support for popular theories that economic development, democratization, or international pressure and assistance are associated with declines in FGM/C. These results raise important questions about the mechanisms through which economic growth, institutional development, and international engagement may influence social behavior and the abandonment of harmful social norms.

Finally, by demonstrating that researchers can construct reliable measures of historical processes using contemporary survey data, this paper showcases a promising means by which researchers might address important issues related to politics and development in situations where data has thus far proven difficult to obtain. In short, when historical data regarding important indicators is scarce, recent surveys that ask respondents to describe historical experiences can provide valuable opportunities to gather information about long-term conditions and trends. Our estimates of FGM/C prevalence could prove useful to scholars interested in understanding FGM/C, and our wider approach to documenting historical trends may serve as a helpful starting point for future studies.

2 Understanding FGM/C

Distribution and Implications

According to the World Health Organization (2008, p.1), FGM/C, "refers to all procedures involving partial or total removal of the external female genitalia or other injury to the female genital organs for non-medical reasons." While cases of FGM/C are reported throughout the world, they are concentrated in West and East Africa.[3] The specific nature and method of implementation varies little within a community, but significantly across communities.[4] For example, while many girls are cut

[3] FGM/C is also found in Yemen, in scattered groups elsewhere in the Arabic Middle East, in Kurdish populations, in Deobandi South Asia, in Islamic Southeast Asia, and among recent emigrants to the West (UNICEF 2013).

[4] The World Health Organization (2008) breaks FGM/C practices into four different types. The first, type I (clitoridectomy) is partial or total removal of the clitoris. Type II (excision) includes the partial or total removal of the clitoris

before the age of five—and even during infancy—in some communities cutting is performed during rituals associated with puberty or childbirth. Cutting is almost always performed on girls below the age of 18, varying by group from infancy to adolescence. Likewise, although cutting is often conducted by traditional practitioners, but in some countries it is increasingly common for it to be performed by medical professionals (Modrek and Sieverding 2016).[5]

There is considerable research on the serious health risks associated with FGM/C (Berg, Underland, and Odgaard-Jensen 2014, Reisel and Creighton 2015). Immediate consequences include severe pain and bleeding, shock, urinary infections, and damage to surrounding organs. Long-term effects include gynecological, obstetric, psychological, and sexual complications. Beyond the public health consequences, international organizations and NGOs increasingly focus on FGM/C as a violation of human rights or a moral wrong (UNICEF 2013; WHO 2008). The basis for this claim, according to Nussbaum's (1999) capabilities argument, is that FGM/C irreversibly reduces a valued human capacity in the absence of meaningful consent. If the practice were reversible—or if the decision were made by a consenting adult—there would be less cause for moral concern. The argument is not that FGM/C is wrong because women should pursue sexual experiences, but rather because they should retain the freedom to choose as adults whether to do so or not. FGM/C also violates international human rights obligations endorsed by most countries where the procedure is performed.[6] Of the FGM/C-affected countries in Africa and the Middle East, 27 have enacted laws or decrees to prohibit the practice (Shell-Duncan, Naik, and Feldman-Jacobs 2016).

and labia minora. Type III (infibulation) is commonly described as the most severe form of FGM/C, includes creating a seal or cover by cutting the labia minora or majora. Finally, type IV is a residual category including all other practices. Variation within communities is limited.

[5] While implementation by medical professionals may mitigate some health concerns of FGM/C, it may partially legitimize the practice, undermining abandonment efforts (Shell-Duncan 2001).

[6] These include the rights to life, to physical and mental integrity, to be free from violence and gender discrimination, to not be subjected to torture or inhuman or degrading treatment or punishment, to the highest attainable standard or health, and of the child.

FGM/C as a Social Norm

FGM/C is often understood by scholars and policymakers as a social norm (Mackie and LeJeune 2009; UNICEF 2013, p.14-21). In this view, FGM/C is held in place within a given reference group by the typical family's beliefs that others do it, others approve of doing it, and others would disapprove of not doing it (Mackie et al. 2015).[7] Disapproval can also include loss of family respectability within the reference group, denial of adult status to the uncut daughter, peer teasing and insult of girls or cowives for being uncut, and the like.[8] In some groups FGM/C is also considered a religious obligation.

Individual responses to cross-national surveys are largely consistent with the social norm account of FGM/C. The most common response to questions about the benefits of FGM/C among women and men is social acceptance (UNICEF 2013, p.67-78). For instance, Wagner (2015) aggregates women's responses from surveys in 13 West African countries: 40% said social approval was a reason to cut, 16% expressed a religious requirement, 11% sought to promote virginity, and 10% of respondents referenced better marriage prospects. Likewise, in an analysis of Kenya's 2014 DHS survey, Grose et al. (2019) find daughters are less likely to be cut in ethnically diverse communities where an individual is more likely to encounter other groups who do not cut.[9]

Because FGM/C is an interdependent action within a reference group, it is difficult for one or a few families to change behavior on their own. A family contemplating abandonment of FGM/C may anticipate strong social disapproval and be deterred from abandoning the practice even if the family members themselves oppose it. Survey data show that, "many girls who are cut are daugh-

[7] By reference group we refer to all others whose participation in and approval of the action influence one to comply with the social norm. Although we also refer to the term *community* within the text, with this we refer not to a territorial unit but rather the relevant reference group.

[8] Mackie (2000) introduces a model of marriageability coordination as a likely explanation for the persistence of FGM/C and its near universality within intramarrying groups. Mackie and LeJeune (2009) update the model of marriageability convention within a broader social-norm account to better fit observations, such as groups in West Africa among whom marriageability has declined in regulatory importance while the practice is maintained by other strong forms of community approval and disapproval (e.g., Shell-Duncan et al. 2011).

[9] The incidence of FMG/C across its distribution is variably associated with ethnicity, religion, female honor, and adolescent initiation rites, but these factors each are influential in only some groups. More widely, it is associated with higher age, lower education, lower income, and rural residence. Multi-level models (e.g., Hayford 2005, Modrek and Liu 2013) tend to show strong cluster-level effects, consistent with the social-norms hypothesis.

ters of women who oppose the practice" (UNICEF 2013, p.78-79), indicating actions motivated by social norms rather than by personal attitudes. To give up an interdependent action within a group, enough people within it must believe that enough other people are changing. In short, change is social; the community must be brought around. Part of our motivation in this study is to better understand which macro-level forces may predict changes in social behaviors and may therefore facilitate transitions away from FGM/C.

Although scholars devote significant attention to understanding both the consequences of FGM/C as well as factors that predict cutting at the individual and community levels, less work seeks to measure or account for changes in national FGM/C prevalence over time. Recent work has begun to consider these topics but is either limited to specific countries (e.g. Kandala and Shell-Duncan 2019) or temporally circumscribed (Kandala et al. 2018). This study presents a novel measure that provides data for 23 different countries with a median temporal coverage of 48 years per country. The earliest year for which we provide estimates of FGM/C prevalence is 1940, with the latest year being 2002. As a result, our measure enables researchers to analyze trends in FGM/C prevalence that existed prior to the introduction of large-scale programmatic abandonment efforts, providing a potentially powerful tool that should enable scholars and practitioners alike to better understand the decline or persistence of FGM/C even in the absence of outside interventions.

3 Measuring FGM/C Prevalence

To estimate changes in the prevalence of FGM/C over time, we draw from 75 separate DHS and MICS surveys featuring more than 700,000 female respondents in 23 African countries.[10] To assemble our data, we begin by identifying all available DHS and MICS surveys in which women reported their FGM/C status.[11] We exclude surveys that lacked a national sampling frame (e.g. Kenya's 1998

[10] This study provides all code necessary to replicate this process. Appendix B provides a list of surveyed countries and DHS and MICS datasets used.

[11] While some may worry that women may be uncertain of their own FGM/C status—or, alternatively, that social desirability bias may undermine the accuracy of direct questioning regarding FGM/C—studies that pair surveys with clinical examinations find that questions regarding FGM/C status are highly reliable (Morison et al. 2001; UNICEF 2013).

DHS) or that fell outside the geographic scope of this study (e.g., surveys fielded in Iraq and Yemen), as well as surveys in which the data quality is suspect.[12] For the remaining surveys, we assigned respondents to country-birth-cohorts based on their country of residence and year of birth. Roughly three percent of respondents do not answer a direct question regarding birth year. For these, we calculate a birth year using self-reported age and the year the survey was fielded. To account for the possibility that migration across borders could impede us from assigning respondents to appropriate country-birth-cohorts, we remove all respondents who indicate they lived "abroad" during childhood.

Because we seek to estimate the lifetime prevalence of FGM/C within each country-birth-cohort, we next identify the distribution of ages at which women reported experiencing FGM/C and then exclude from subsequent analysis all respondents who were younger than the 95th percentile of this measure at the time they were surveyed.[13] Our motivation for this step is to avoid underestimating lifetime FGM/C prevalence, as could occur if we misclassify relatively young women who had not yet undergone the procedure at the time of interviewing but eventually would.[14] We then calculate the proportion of remaining respondents in each survey-birth-cohort who report experiencing FGM/C when asked. Figure 3 provides a visual depiction of the resulting data, with the estimated lifetime cutting prevalence from each survey-birth-cohort plotted separately for each country. To assess precision across surveys, we identify country-birth-cohorts that appeared in multiple surveys, finding a median absolute difference between overlapping estimates of 2.8%.[15]

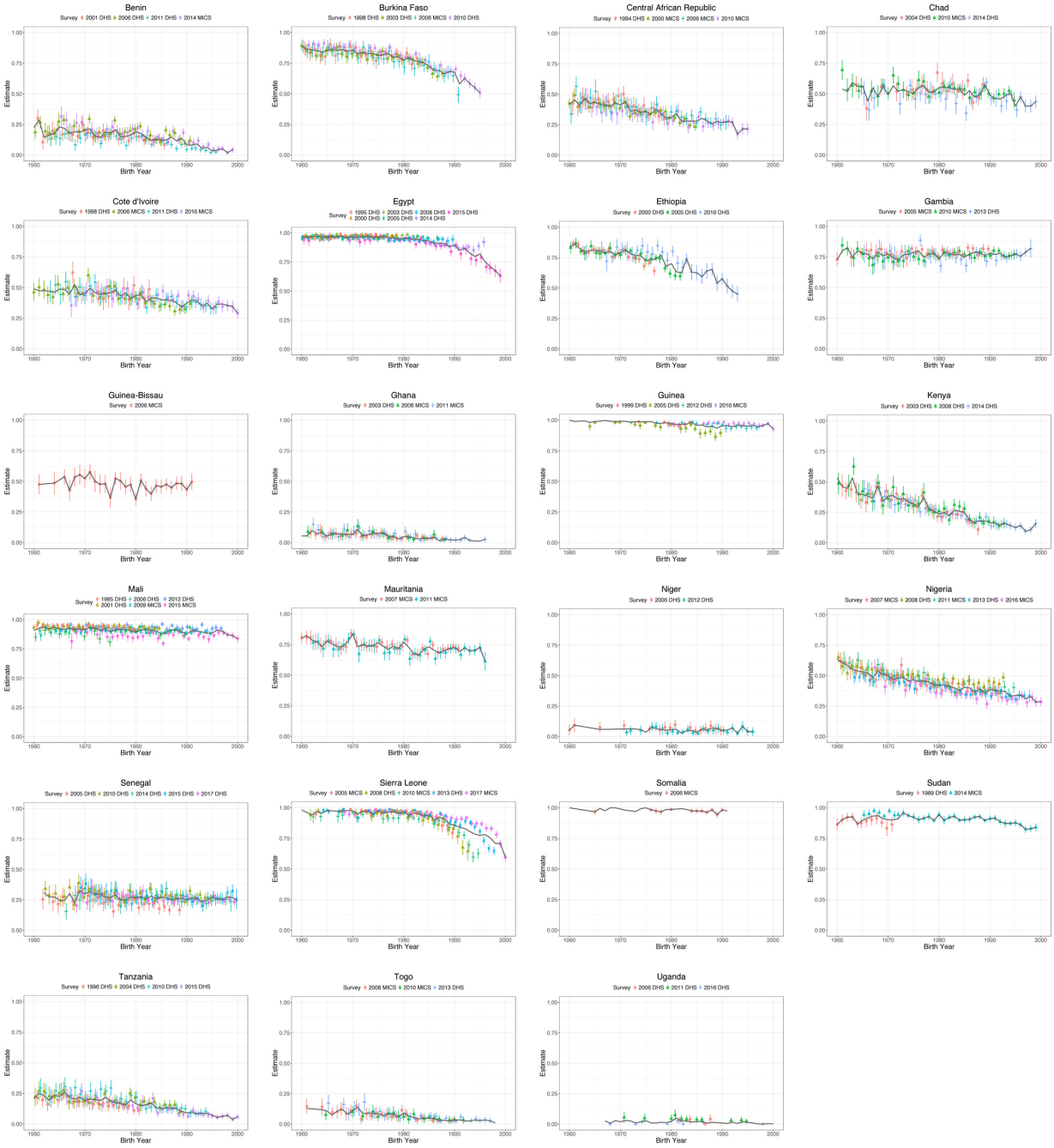
[12] For example, we excluded surveys with insufficient responses for the construction of accurate estimates, as well as surveys in which the proportion of women cut in each birth-cohort differed systematically from several other surveys fielded in the same country, e.g. Nigeria's 2003 DHS.

[13] Thus, if 95% of women who experienced FGM/C in a country did so prior to the age of 17, we discarded respondents in that country who were younger than 17 when they were surveyed.

[14] FGM/C is generally performed before the age of 15, but women in some countries undergo the procedure at later ages.

[15] See Appendix A for more information on differences between surveys. One explanation for this gap may be that women who undergo FGM/C experience higher mortality rates throughout their lives than women who have not undergone the procedure. If this occurs, surveys fielded in earlier years should yield higher cutting estimates for the same birth cohort than surveys that are fielded in later years. To test for this possibility, we regressed the difference between FGM/C birth-cohort-estimates for overlapping surveys on the number of years that elapsed between survey rounds. The relationship was substantively small: a ten-year gap between surveys is associated with, on average, 0.5% lower estimates of FGM/C for overlapping birth cohorts in the more recent survey.

Figure 3: Cross-National FGM/C Prevalence Over Time



The figure displays all survey-birth-cohort estimates with at least 100 individual respondents. We include confidence intervals two standard errors above and below each estimate. The gray line in each plot maps the weighted proportion of FGM/C after combining responses from all overlapping surveys and excluding birth cohorts with fewer than 100 total respondents. To allow for ease of comparison the figure presents a consistent temporal range for all countries beginning in 1960 and ending in 2000, although data coverage extends in some cases as early as 1940 and as late as 2002.

Given the similarity of these estimates, we next pool individual responses for birth cohorts that appear in multiple surveys. When combining survey waves, we follow DHS recommendations for weighting observations across surveys.[16] We used this pooled sample to calculate the overall lifetime prevalence of FGM/C among women from each country-birth-cohort. For example, ignoring weights, if 1000 female survey respondents were born in a particular country in 1965 and 700 of those respondents reported experiencing FGM/C, our calculation of FGM/C prevalence among that country's 1965 female birth-cohort would be 70 percent. Finally, we removed FGM/C prevalence estimates for country-birth-cohorts with fewer than 100 total responses.[17]

4 An Exploration of Macro-Level Predictors

Descriptive Evidence

Our measure of historical FGM/C prevalence reveals several interesting trends in cutting over time. Overall, the country with the largest decrease in cutting is Sierra Leone. Over 94 percent of Sierra Leonean women born in 1962 are cut during their lifetimes, while roughly 53 percent of women born in 2002 experience FGM/C. Similarly large declines are observed in Ethiopia, Kenya, and Burkina Faso. It should not be too surprising that these countries have seen the largest declines—they historically have had some of the highest levels of cutting—but the progress in these cases is nonetheless encouraging. Our measure likewise highlights Uganda and Togo as two countries where cutting was not widespread historically, but where rates are virtually zero among the most recent birth cohorts. In contrast to cases where FGM/C participation has decreased or continues at relatively low levels, our measure also reveals numerous countries that exhibit minimal declines

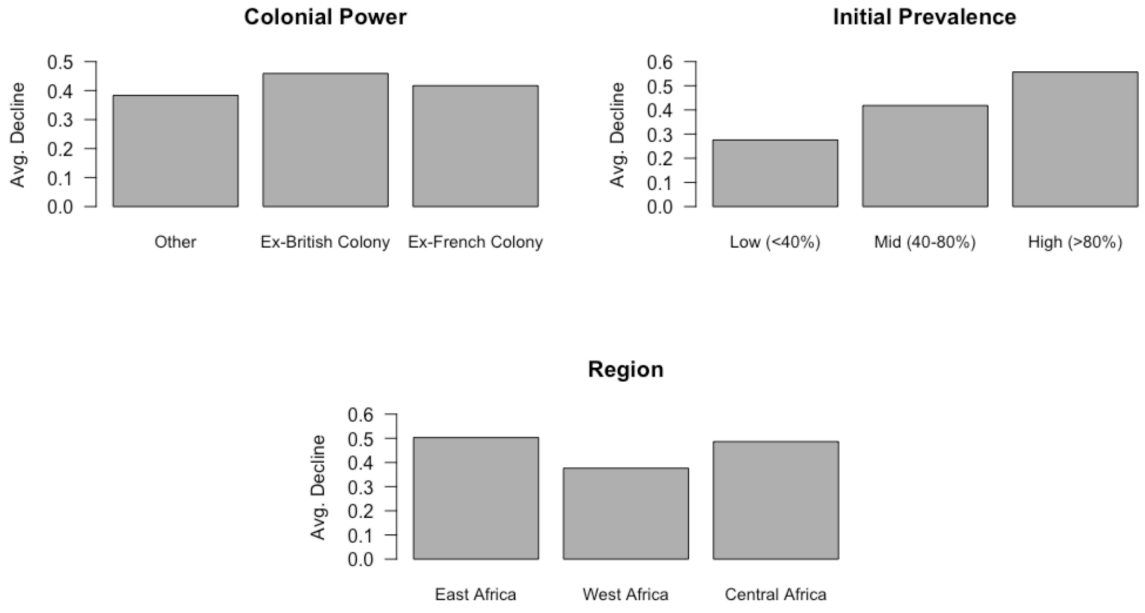
[16] The normalized weights that are included in DHS surveys are not appropriate to use when pooling data from multiple surveys because the population of potential respondents changes across survey waves. We therefore constructed denormalized survey weights that account for each respondent's distinct sampling likelihood, given the population of potential respondents—i.e., the population of women aged 15-49—in the country and year in which each survey wave was conducted. We obtained relevant population size estimates from World Bank data. For further discussion of this procedure, see the explanation by Ruilin Ren (senior technical specialist and sampling expert at ICF International, an organization that implements DHS surveying) in "Note on DHS standard weight de-normalization."

[17] We selected this cutoff because it equates to a maximal standard error of 5% if the observed FGM/C rate among respondents was 50%. Prior to exclusion, the median number of observations in each country-birth-cohort was 1181, and the mean was 1392.

in cutting. For example, we estimate that 99 percent of Guinean women born in 1958—the year of Guinea's independence—underwent FGM/C during their lifetimes, making it the country with the highest rate of cutting. As of 2001, our data suggests that this figure had declined only slightly and still exceeded 95 percent. Similar levels of persistence are apparent in other countries, including Somalia and Guinea-Bissau. Perhaps even more worryingly, our measure shows that the prevalence of cutting in Gambia is, if anything, increasing over time. Collectively, these results highlight the work left to be done in reducing FGM/C.

Figure 4 illustrates the average yearly decline in the percentage of women cut according to several time-invariant criteria. First, it does not appear a country's former colonial power is related to trends in cutting. Second, declines in cutting have been fastest in countries where FGM/C was more widespread historically. Finally, it appears that declines in cutting are slower in West Africa than other regions.

Figure 4: Average Yearly Decline in FGM/C



Found by calculating the average yearly decline for each country, and then combining and averaging different country estimates according to their colonial history, initial prevalence of cutting, and region.

Correlates of Cutting

To highlight the type of analysis that our new measure of FGM/C should facilitate, we offer an exploratory investigation of several theories that predict changes in FGM/C prevalence. Using a series of bivariate linear regressions, we explore several macro-level country characteristics that may be associated with overall FGM/C participation within a country (see Appendix A for variable descriptions and sources). The unit of analysis across all models is the country-birth-cohort, which can more easily interpreted as the country-year.[18] For each model, our outcome variable is the measure of lifetime FGM/C prevalence we developed in the previous section. To facilitate comparisons across models, we restrict the dataset to the set of observations for which we have complete data for all independent variables.[19] We likewise normalize all continuous independent variables to facilitate ease of comparison between coefficients. Finally, to help account for omitted variables and temporal dependencies, all models include country fixed effects as well as a lagged measure of the dependent variable.[20]

The first set of macro-level factors we include relate to economic development and modernization. One commonly-cited argument for socio-political changes contends that countries abandon traditional practices as they become more developed and gain exposure to other communities (Lipset 1959). This theoretical approach therefore suggests measures of economic development and international engagement may predict whether FGM/C persists or declines (e.g., Boyle, McMorris, and Gomez 2002; Modrek and Liu 2013, Keck and Sikkink 1998).

To test for the existence of such a relationship, we include two measures of economic development: *Gross Domestic Product per capita* and *Population Density,* defined as a country's population divided by its size in square kilometers. We also include two measures of international economic engagement: *Official Development Assistance (ODA)* as a percentage of GDP and *Trade* as a percentage of GDP. We obtained annual data for all four of these measures from the World Bank. Table 1

[18] Our dataset contains one observation for each birth-cohort-year in each country.

[19] Reliable historical data is difficult to obtain for many of the countries in our sample on measures such as female empowerment, trade, and ODA. We use multiple imputation methods in Appendix C to show that missing data is not substantively affecting our results.

[20] Due to the country fixed-effects, coefficients can be interpreted as within-country associations.

illustrates the relationship between these variables and rates of cutting.

We next consider feminist theories of gender bargaining and women's empowerment, which highlight structural inequalities between men and women. These hierarchical relationships may predict the persistence or abandonment of FGM/C if the continuation of FGM/C is related to power imbalances within countries placing women at a disadvantage. With greater female empowerment, women may be able to secure more favorable agreements, including reductions in FGM/C.[21] To account for a country's level of female empowerment, we include a measure of *Female Education,* a continuous measure that represents the percentage of primary school students who are female. Parallels between education and FGM/C prevalence have been forwarded by Yount (2002), who argues increases in education may contribute to reductions in the proportion of parents who choose to cut their daughters. We obtained the measure of enrollment parity by gender from the World Bank.[22]

Our next set of variables relate to the political environment and level of political stability within a country. Because autocratic governments are commonly associated with less robust human rights protections than democracies, we include a dichotomous measure of *Autocracy* from the commonly used Polity IV dataset.[23] We also include a measure of *Regime Durability,* measured as the number of years elapsed since the country's most recent change of Polity score, and *Political Instability,* measured as change in Polity score of two or more within the last three years.

Beyond the lack of regime stability, other significant disruptions to a country's social fabric could similarly influence the persistence of FGM/C. Acute forms of instability such as civil wars may

[21] Implicit in this argument is the assumption that men favor FGM/C as a way to cement their dominant position and repress female sexuality (Mpofu et al. 2017). Nevertheless, although general social norms relating to gender are often hypothesized to affect violence towards women (Alesina, Brioschi, and Ferrara 2016), the opinions of men regarding FGM/C are not so straightforward. Although many couples disagree about whether FGM/C should end or continue, men often *favor* abandonment and are often *less* supportive of continuing the practice than women (Varol et al. 2015; UNICEF 2013). In particular, substantially more men than women oppose FGM/C in Chad, Guinea, and Sierra Leone (UNICEF 2013).

[22] In Appendix C we include a number of robustness checks and extensions that include (1) subsetting the data to avoid potential programmatic efforts, (2) changing the lag a three year rolling average, (3) running beta regressions on the cohort estimates to account for the fact our dependent variable is a proportion, and (4) using multiple imputation to address missing data. Our results are generally consistent across all models, but we discuss differences between results both later in this text as well as in the appendix.

[23] In keeping with the literature, we code countries as *autocracies* when their Polity 2 values range between -10 and -6.

directly affect the prevalence of FGM/C by threatening women's safety and making citizens more risk-averse about abandoning social norms. This theory suggests active conflict or instability within a country should predict higher levels of FGM/C than in places without violence. To explore this possibility, we include *Civil Conflict,* which indicates the presence of civil conflict within a country.

Finally, many countries have outlawed FGM/C, an action that may contribute to the practice's decline by deterring participation in the practice and raising the costs to individuals who persist in conducting it (e.g. Kandala and Komba 2015).[24] To reflect these arguments, we include a dichotomous indicator of whether FGM/C is *Outlawed* in a given country-year.[25] Table 2 provides a summary of results relating to our political and legal variables.

Table 1: Bivariate Regressions of FGM/C Prevalence

	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)
GDP Per Capita	-0.41				
	(0.81)				
Population Density		-1.58^{+}			
		(0.89)			
Net ODA			-0.44		
			(0.47)		
Trade				-0.10	
				(0.17)	
Female Education					-1.25^{+}
					(0.70)
R^2	0.67	0.68	0.68	0.67	0.68
Adj. R^2	0.66	0.67	0.66	0.66	0.67
Observations	463	463	463	463	463
Clusters	20	20	20	20	20

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Models use OLS regression with country-year as the unit of analysis, country fixed-effects, normalized independent variables, and country-clustered standard errors in parentheses. All models include a lagged dependent variable and constant, which are not shown.

[24] The question of legal obedience is complex. Our intention is merely to study it in relation to cross-national variance in political conditions.

[25] Outlawing FGM/C is arguably an example of a programmatic response to the practice. We include it as an independent variable because of its potential importance in patterning FGM/C trends, because most laws against FGM/C considered were not the results of international pressure, and because our study's timeframe still largely predates large, international programmatic efforts.

Table 2: Bivariate Regressions of FGM/C Prevalence

	(Model 6)	(Model 7)	(Model 8)	(Model 9)	(Model 10)
Autocracy	0.50				
	(0.36)				
Regime Durability		-0.47**			
		(0.20)			
Political Instability			0.42^{+}		
			(0.24)		
Civil Conflict				-0.29	
				(0.21)	
FGM/C Outlawed					-1.26***
					(0.30)
R^2	0.67	0.68	0.67	0.67	0.67
Adj. R^2	0.66	0.66	0.66	0.66	0.66
Observations	463	463	463	463	463
Clusters	20	20	20	20	20

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Models use OLS regression with country-year as the unit of analysis, country fixed-effects, normalized independent variables, and country-clustered standard errors in parentheses. All models include a lagged dependent variable and constant, which are not shown.

5 Discussion and Interpretation

This exploratory analysis suggests that the predictors of FGM/C are complex and context-specific, with few strong relationships that generalize across countries. Nonetheless, our evidence highlights several patterns that merit further investigation. Table 1 shows the results from our first set of bivariate regressions. Although only marginally significant, these results suggest that higher levels of population density and higher levels of female enrollment are associated with lower levels of FGM/C. On average, a one standard deviation increase in population density—roughly 26 people per kilometer—is associated with a nearly one-and-a-half percent lower rate of cutting. Population density could be proxying for various underlying mechanisms, such development or contact with diverse communities, and we leave it to future researchers to better understand how population density may influence FGM/C. Similarly, a one standard deviation increase in female primary school participation—equivalent to a 15 percent rise in the proportion of students who are female—is asso-

ciated with nearly one-and-a-quarter percent lower cutting rates. This result merits future research, as it suggests that international programs aiming to increase access to education for women may either observe declines of harmful practices as a side effect or may be most effective in locations where FGM/C rates are already low. On the other hand, our models exploring per capita GDP and international exposure—either in terms of official development assistance or international trade—are not associated with changes in the prevalence of FGM/C.

Our second set of models focus on potential political and legal correlates of FGM/C. First, we find little evidence that autocratic regimes are associated with the prevalence of FGM/C. Similarly, we fail to detect a significant relationship between FGM/C prevalence and civil conflict. While civil conflict may introduce social upheaval, it does not seem to be strongly associated with FGM/C prevalence. Our results do suggest a potential relationship between political stability and FGM/C, however. More durable political regimes, whether they are authoritarian or democratic, are associated with lower levels of cutting. Each additional decade of regime durability is associated with a .5 percent decline in FGM/C. Measured differently, episodes of political instability that follow changes in the type of ruling regime are associated with slightly higher rates of cutting. Finally, our results indicate that places where FGM/C is outlawed are associated with lower rates of FGM/C prevalence. Although this is perhaps encouraging news for those who seek to bring about an end to FGM/C, we caution that we cannot say with any certainty why outlawing FGM/C is associated with decline. The results may, for instance, result from increased fear of legal sanctions, the spread of information campaigns regarding the ban of FGM/C, or shifting social expectations around the practice's future. Alternatively, governments may be most likely to pass laws banning the practice in places where FGM/C is already on track to decline. Regardless, the relationship between FGM/C legality and its prevalence warrants greater scholarly attention, and the data we provide should facilitate such research in the future.

Although our results remain correlational and descriptive in nature, they highlight how our approach to estimating historical FGM/C prevalence advances our understanding of long-term trends in cutting while also facilitating research on the various macro-level factors that may predict its de-

cline. Nevertheless, we are careful not to place too much policy emphasis on any of the relationships we highlight in this study, as several potential problems may limit our ability to draw firm conclusions. For example, our estimates of FGM/C prevalence may be biased downwards systematically. In short, the health consequences of FGM/C may result in a process whereby women who have been cut are less likely to survive to adulthood or to participate in DHS and MICS surveys. While this would deflate our estimates of FGM/C prevalence, our estimates of the magnitude of this effect are small, as we discuss in Footnote 15.

Second, although our method of using contemporary surveys to identify historical trends in FGM/C enables us to assess long-term trends in participation rates across countries, missing data remains a persistent problem in both our dependent and independent variables. For many countries, our data on FGM/C prevalence becomes spotty beginning in the 1990s and almost non-existent after the year 2000. This is due to either a lack of available surveys or the existence of young respondents who still face the possibility of being cut in the future at the time they are surveyed. Historical data on our explanatory variables of interest in FGM/C countries dating back to the 1960s, when our measures of prevalence begin, are at times also spotty. Our method of compiling data from DHS and MICS respondents should allow for both straightforward expansions of temporal coverage and improvements in existing annual estimates as additional survey waves become available.

To ease interpretation, we limited our main analysis to observations with complete data across all variables, but in Appendix C we repeat our analysis both with all available cases for any given variable as well as using multiple imputation methods. Across both approaches, the results for population density, female education, and laws against FGM/C are consistent in direction, magnitude, and significance, while the variables measuring political stability are less consistent in statistical significance across specifications.

It is possible that some birth-cohorts included in our analysis—particularly those from more recent years—are influenced by international programmatic efforts against the practice. To account for this possibility, in Appendix C we repeat our analysis limiting our observations to those born before 1985. We find, if anything, a stronger association between population density, female edu-

cation, and political stability and declines in FGM/C. The largest difference between the results we present in Table 2 and those that limit temporal coverage to years prior to 1985 is that civil conflict, which was not strongly associated with FGM/C levels in the main table, is positively and significantly associated with FGM/C prevalence in the pre-1985 data. Future researchers may wish to investigate this discrepancy further. Although speculative, it is possible that post-1985 increases in humanitarian assistance and support for conflict-affected populations has helped to combat the spread of FGM/C in civil conflict zones, thereby reducing the relationship between conflict and FGM/C in recent decades.[26]

Aside from our exploratory results, our approach of using birth-cohort estimates to construct historical measures of FGM/C prevalence opens up a number of potential avenues for future research. Nevertheless, we acknowledge this study suffers from several limitations on our ability to draw definitive interferences. Perhaps most significantly, our study is limited in scope to macro-factors and macro-effects. It is likely individual and community-level variables are also of substantive interest. Unfortunately none of the data sources we consult include potential individual-level covariates from before a woman is cut. We focus on macro-factors associated with changes in FGM/C prevalence, but our approach could similarly be used to consider how different meso-level factors, at the level of ethnic, religious, or subnational community, may be associated with changes in FGM/C prevalence. This dovetails several other works discussing the explanatory power of individual level measures in explaining the persistence of FGM/C (e.g., Kandala, Nwakeze, and Kandala 2009).

6 Future Research

The results of this study highlight the need for more research into trends in FGM/C prevalence, particularly historical trends predating major programmatic efforts to end the practice. Our ini-

[26] Finally, to account for extraneous variation related to measurement error, we include an alternative specification in the Appendix C in which we replace the one-year lag of FGM/C prevalence with a three-year rolling average. Coefficients from these models are directionally consistent with those presented in Tables 1 and 2 but are not significant at conventional levels. We discuss this in greater detail in Appendix C.

tial results provide some evidence that population density, female education, political stability, and laws banning FGM/C are associated with lower levels of cutting, but these results are tentative at best, with different modeling decisions influencing their magnitude and degree of significance. Future scholars should build upon our data and exploratory results to more directly explore specific hypotheses using alternative approaches and additional tests.

For example, using our approach future researchers could evaluate how cultural differences associated with different ethnic groups influence rates of cutting by creating cohort-estimates for each ethnic group within a set of countries. Potential research could, for example, assess how different groups may be more open to change than others, and whether more open groups are more willing to abandon FGM/C. Similarly, research could consider whether matrilineal groups differ from patrilineal groups in their rate of cutting. Differences at the level of cultural group could work either independently or in interaction with different macro or international processes. Efforts to outlaw FGM/C may be more effective among certain groups, for instance.

In addition to ethnic groups, future research should consider subnational variation in FGM/C prevalence. Assuming limited migration, our approach could similarly be used to construct an estimate of FGM/C prevalence for subnational regions. It could then be seen if certain regions are especially likely to abandon the practice, or if subnationally varying factors are associated with changes in FGM/C prevalence either directly or interacting with other variables. Such research could consider if efforts to outlaw FGM/C are more effective closer to national capitals and other centers of political power, or if geographically-focused efforts to promote FGM/C abandonment have succeeded in the communities where they were implemented. Using historical measures, future research could also measure how long-running factors such as a region?s exposure to colonizing powers, missionaries, or the transatlantic slave trade may have catalyzed long-run processes that continue to shape trends in FGM/C prevalence today.

7 Concluding Remarks

Why has the prevalence of FGM/C declined in some countries but remained high in others? Whereas previous researchers have identified variables that explain individual attitudes toward the practice (e.g. Hamilton and Kandala 2016) and individual decisions to participate in FGM/C (e.g. Achia 2014; Setegn, Lakew, and Deribe 2016), this paper is the first to explore national-level mechanisms that predict variation in observed abandonment across countries over time. We develop a novel measure of FGM/C prevalence in 23 African countries for time periods ranging from 1940 to 2002. This new measure, the first of its kind, enables us to better understand long-run trends in FGM/C, including the countries where the practice has seen its sharpest declines and the countries where FGM/C has seen little or no decline in prevalence.

In analyzing the changes in FGM/C prevalence, this study also provides initial evidence that greater population density, equality in access to education, efforts to outlaw the practice, and political stability are all associated with lower levels of cutting. On the other hand, we find that economic development, regime type, and international pressure are less strongly associated with the decline of the practice than researchers sometimes assume.

Although our findings are in many cases consistent with the theoretical mechanisms we outline, we emphasize that the patterns we identify should be subjected to additional study before any conclusive claims or policy decisions are made. Our analysis is exploratory in nature and the relationships we highlight are correlational rather than causal. While our empirical approach—using a combination of fixed effects, a lagged dependent variable, and clustered standard errors—helps bolster inferences by controlling for potential omitted variables and more accurately estimating the uncertainty in our explanatory coefficients, we are limited by the use of observational data and bivariate regression techniques. We hope this study serves as the first of many that use contemporary surveys to identify historic trends in FGM/C, and that future researchers will implement creative strategies that facilitate causal identification.

Finally, although our goal in this project is to understand trends in national-level FGM/C participation, our approach of using recent survey responses to obtain data on historical outcomes

suggests several avenues for future research. More broadly, asking survey respondents to report information about historic conditions and events may be a fruitful means of gathering data about other historical variables when reliable evidence from a time period of interest is difficult to obtain. Just as researchers use interviews with key subjects to construct historical accounts of earlier periods, we may use large survey responses to construct a broader picture of history where none would otherwise exist.

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Appendix A: Data Sources & Descriptions and Summary Statistics

Table A1: Variable Descriptions and Data Sources

Variable	Description	Source
Proportion Cut	Overall proportion of women born in a year eventually cut.	DHS and MICS Surveys
Initial Prevalence	Proportion of women cut born in the earliest year with data	DHS and MICS Surveys
FGMC Lag	One-year lag in the proportion of women cut.	DHS and MICS Surveys
FGMC Lag	Average of the proportion of women cut from the previous three years.	FGMC 3 Yr. Average
GDP Per Capita	Gross domestic product divided by total population	World Bank
Autocracy	Indicator for whether a country's Polity 2 score falls between -6 and -10, inclusive.	Center for Systemic Peace
Regime Durability	Consecutive years without a change in polity score	Fearon and Laitin 2003
Civil Conflict	The existence of a civil conflict in a state	Fearon and Laitin 2003
Net ODA	Official development assistance as a percent of GDP	World Bank
Trade	Trade as a percent of GDP	World Bank
British/French Colony	Colonial power at the time of independence	Englebert 2000
FGM/C Outlawed	Existence of a national law against FGM/C	UNICEF 2013
Female Education	The percentage of primary school students who are female.	World Bank
Political Instability	A greater than two-point change in Polity IV score during the previous three years	Center for Systemic Peace

Table A2: Variable Descriptions and Data Sources

Variable	N	NAs	Min.	Max.	1 Quartile	3 Quartile	Mean	Median	Variance	St. Dev.
Proportion Cut	827	0	0	100	19.26	85.6	51.28	48.19	1149.802	33.909
GDP Per Capita	710	117	-1.42	3.936	-0.68	0.418	0	-0.375	1	1
Population Density	827	0	-1.177	3.93	-0.895	0.53	0	-0.154	1	1
Net ODA	827	0	0	0	0	0	0	0	1	1
Trade	729	98	-2.033	3.883	-0.728	0.4951	0	-0.116	1	1
British Colony	827	0	0	1	0	1	0.411	0	0.242	0.492
French Colony	827	0	0	1	0	1	0.496	1	0.25	0.5
Autocracy	826	1	0	1	0	1	0.697	1	0.211	0.46
Regime Durability	827	0	-1.069	3.657	-0.873	0.605	0	-0.282	1	1
Political Instability	810	17	0	1	0	0	0.179	0	0.147	0.384
Civil Conflict	810	17	0	1	0	0	0.168	0	0.14	0.374
FGM/C Outlawed	827	0	0	1	0	0	0.096	0	0.087	0.294
Female Education	661	266	-2.259	2.244	-0.689	-0.128	0	-0.128	1	1

Appendix B: DHS and MICS Surveys

Table B1: Surveys Included

Country	Surveys	Earliest Calculation of FGM/C Prevalence	Latest Calculation of FGM/C Prevalence
Benin	DHS: 2001, 2006, 2011-12 MICS: 2014	1951	1999
Burkina Faso	DHS: 1998-99, 2003, 2010 MICS: 2006	1948	1995
Central African Republic	DHS: 1994-5 MICS: 2000, 2006, 2010-11	1945	1995
Chad	DHS: 2014-15 MICS: 2000, 2010	1954	2000
Cote d'Ivoire	DHS: 1998-99, 2011-12 MICS: 2006, 2016	1948	2001
Egypt	DHS: 1995, 2000, 2003, 2005, 2008, 2014, 2015	1945	2000
Ethiopia	DHS: 2000, 2005, 2016	1942	1993
Gambia	DHS: 2013 MICS: 2005-06, 2010	1956	1998
Ghana	DHS: 2003 MICS: 2006, 2011	1953	1996
Guinea	DHS: 1995, 2005, 2012 MICS: 2016	1949	2001
Guinea-Bissau	DHS: 2006	1956	1991
Kenya	DHS: 2003, 2008-09, 2014	1948	1999
Mali	DHS: 1995-96, 2001, 2006, 2012-13 MICS: 2009-10, 2015	1946	1997
Mauritania	DHS: 2007, 2011	1957	1996
Niger	DHS: 2006, 2012	1956	1997
Nigeria	DHS: 2008, 2013 MICS: 2007, 2011, 2016	1957	2002
Senegal	DHS: 2005, 2010-11, 2014, 2015, 2017	1955	2002
Sierra Leone	DHS: 2008, 2013 MICS: 2005-06, 2010, 2017	1955	2002
Somalia	MICS: 2006	1956	1991
Sudan	DHS: 1989-90 MICS: 2014	1940	1999
Tanzania	DHS: 1996, 2004-05, 2010, 2015-16	1946	2001
Togo	DHS: 2013-14 MICS: 2006, 2010	1956	1999
Uganda	DHS: 2006, 2011, 2016	1956	2001

Appendix C: Additional Models and Robustness Checks

Although our main results are meant to be exploratory and are designed only to highlight the way our new measure of FGM/C prevalence may be of use to future researchers, this appendix presents several additional models using different specifications to assess their robustness.

First, one potential concern centers on problems of missing data. When conducting research on historical periods, especially in the developing world, data is often missing or non-existent. To that end, we repeat our analysis using both all available cases for a given model (Table C.1) and using multiple imputation to recover missing values for our independent variables (Table C.2). This requires the assumption that this data is missing either not at random, or not completely at random. Differing results across these models are likely due to the non-random missingness in our independent variables.

Next, another potential problem with our cohort-level approach is attempting to model a dependent variable bounded by 0 and 1 using OLS regressions. To that end, we repeat our cohort-level analysis using a beta regression (Tables C.3). These regressions may be better suited for analyzing proportions that can only take values between 0 and 1—such as lifetime FGM/C prevalence within a birth-cohort—as the models assume the dependent variable is drawn from a beta distribution.

We then limit our observations to only women born before the 1985 (Tables C.4). This is done to account for the possibility that programmatic efforts may be affecting more recent years. Differences in magnitude between our main results and these regressions could suggest that increases in population density and female education we more strongly related to FGM/C in the pre-1985 period than the post-1985 period.

Finally, we re-run our cohort-level regression models, but change the lagged measure of FGM/C prevalence into a rolling-average of the proportion of women cut over the previous three years. This is to rule out the possibility that using only one year could have too much measurement error (Table C.5). This set of specifications yielded results least consistent with those in the main model. There are several theoretical and empirical reasons, however, that could contribute to the lack of significant results in these models and may bias our coefficient estimates towards zero. First, in our

yearly estimates of FGM/C prevalence we already take several steps to improve the quality of our estimates (e.g. setting a minimum threshold for the number of respondents, omitting surveys where data quality is questionable, and excluding women who could still potentially be cut). By switching to a rolling average, we are smoothing over real year-on-year variation without a significant improvement in the quality of our estimates. This is particularly problematic when all our independent variables are measured annually. Next, this measure may mechanically obscure increases or decreases changes in prevalence by averaging several years. Finally, this measure may be create bias around critical junctures such as the outlawing of FGM/C, in which families may act strategically prior to the application of such bans by cutting daughters at a younger age.

Our results from these additional models are generally consistent insofar as higher levels of population density, female education, and outlawing FGM/C are associated with lower levels of FGM/C prevalence. Our results also provide suggestive, although inconsistent, evidence that social or political instability (e.g., changes in Regime Durability and the presence of Civil Conflict) may be linked to trends in FGM/C prevalence. These results vary too greatly across models, however, to draw more than tentative conclusions.

Table C1: Main Results, All Cases

	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)
GDP Per Capita	-0.22				
	(0.49)				
Population Density		-1.33*			
		(0.59)			
Net ODA			-0.48+		
			(0.29)		
Trade				-0.05	
				(0.14)	
Female Education					-1.22*
					(0.48)
R^2	0.74	0.77	0.74	0.75	0.73
Adj. R^2	0.73	0.76	0.73	0.74	0.72
Observations	694	804	732	689	561
Clusters	22	23	23	22	22

	(Model 6)	(Model 7)	(Model 8)	(Model 9)	(Model 10)
Autocracy	0.57**				
	(0.22)				
Regime Durability		-0.18			
		(0.15)			
Political Instability			0.26		
			(0.19)		
Civil Conflict				-0.92*	
				(0.42)	
FGM/C Outlawed					-1.00*
					(0.39)
R^2	0.76	0.76	0.74	0.74	0.76
Adj. R^2	0.76	0.76	0.73	0.73	0.76
Observations	803	804	787	787	804
Clusters	23	23	23	23	23

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Models use OLS regression with country-year as the unit of analysis, country fixed-effects, normalized independent variables, and country-clustered standard errors in parentheses. All models include a lagged dependent variable, which is not shown.

Table C2: Multiple Imputation

	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)
GDP Per Capita	0.04				
	(0.47)				
Population Density		-1.33*			
		(0.65)			
Net ODA			-0.44		
			(0.28)		
Trade				-0.03	
				(0.17)	
Female Education					-1.11**
					(0.34)
Observations	827	827	827	827	827
Clusters	23	23	23	23	23

	(Model 6)	(Model 7)	(Model 8)	(Model 9)	(Model 10)
Autocracy	0.56*				
	(0.22)				
Regime Durability		-0.18			
		(0.16)			
Political Instability			0.17		
			(0.21)		
Civil Conflict				-0.89*	
				(0.42)	
FGM/C Outlawed					-1.00*
					(0.42)
Observations	827	827	827	827	827
Clusters	23	23	23	23	23

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Models use OLS regression with country-year as the unit of analysis, country fixed-effects, normalized independent variables, and country-clustered standard errors in parentheses. All models include a lagged dependent variable and constant, which are not shown.

Table C3: Beta Regressions, Complete Cases

	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)
Intercept	-2.73**	2.52**	-2.66**	-2.66**	-2.71**
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Phi	131.24**	132.99**	126.19**	125.68**	129.35**
	(8.65)	(8.77)	(8.32)	(8.29)	(8.53)
GDP Per Capita	-0.12**				
	(0.03)				
Population Density		-0.17**			
		(0.03)			
Net ODA			-0.03		
			(0.02)		
Trade				-0.01	
				(0.02)	
Female Education					-0.11**
					(0.03)
Pseudo R^2	.97	.98	.97	.97	.97
Log Likelihood	995.47	999.27	986.68	985.72	992.50
Observations	462	462	462	462	462
Clusters	20	20	20	20	20

	(Model 6)	(Model 7)	(Model 8)	(Model 9)	(Model 10)
Intercept	-2.69**	-2.66**	-2.67**	-2.66**	-2.66**
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Phi	127.26**	126.98**	125.77**	125.82**	126.11**
	(8.39)	(8.37)	(8.29)	(8.30)	(8.32)
Autocracy	0.07**				
	(0.03)				
Regime Durability		-0.04**			
		(0.02)			
Political Instability			0.02		
			(0.03)		
Civil Conflict				-0.05	
				(0.06)	
FGM/C Outlawed					-0.13
					(0.10)
Pseudo R^2	.97	.97	.97	.97	.97
Log Likelihood	988.60	988.00	985.89	985.98	986.56
Observations	462	462	462	462	462
Clusters	20	20	20	20	20

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Models use beta regressions with country-year as the unit of analysis, normalized independent variables, and standard errors in parentheses. All models include a lagged dependent variable, which is not shown.

Table C4: Pre-1985, Complete Cases

	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)
GDP Per Capita	0.31				
	(0.98)				
Population Density		-6.44**			
		(2.18)			
Net ODA			-1.23		
			(0.88)		
Trade				-0.25	
				(0.34)	
Female Education					-3.54**
					(1.14)
R^2	0.23	0.33	0.26	0.23	0.31
Adj. R^2	0.16	0.28	0.19	0.16	0.25
Observations	241	241	241	241	241
Clusters	18	18	18	18	18

	(Model 6)	(Model 7)	(Model 8)	(Model 9)
Autocracy	-0.68			
	(0.98)			
Regime Durability		-1.84*		
		(0.86)		
Political Instability			0.13	
			(0.78)	
Civil Conflict				3.35**
				(1.03)
R^2	0.23	0.28	0.23	0.23
Adj. R^2	0.16	0.22	0.16	0.16
Observations	241	241	241	241
Clusters	18	18	18	18

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Models use OLS regression with country-year as the unit of analysis, country fixed-effects, normalized independent variables, and country-clustered standard errors in parentheses. All models include a lagged dependent variable and constant, which are not shown.

Table C5: Three Year Rolling Average as Lag, Complete Cases

	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)
GDP Per Capita	-0.89				
	(0.59)				
Population Density		-0.28			
		(0.42)			
Net ODA			-0.03		
			(0.28)		
Trade				-0.01	
				(0.13)	
Female Education					-0.15
					(0.50)
R^2	0.77	0.77	0.77	0.77	0.77
Adj. R^2	0.76	0.76	0.76	0.76	0.76
Observations	457	457	457	457	457
Clusters	20	20	20	20	20

	(Model 6)	(Model 7)	(Model 8)	(Model 9)	(Model 10)
Autocracy	-0.01				
	(0.36)				
Regime Durability		-0.16			
		(0.16)			
Political Instability			0.33		
			(0.20)		
Civil Conflict				-0.08	
				(0.32)	
FGM/C Outlawed					0.08
					(0.42)
R^2	0.77	0.77	0.77	0.77	0.77
Adj. R^2	0.76	0.76	0.76	0.76	0.76
Observations	457	457	457	457	457
Clusters	20	20	20	20	20

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Models use OLS regression with country-year as the unit of analysis, country fixed-effects, normalized independent variables, and country-clustered standard errors in parentheses. All models include a lagged dependent variable, which is not shown.