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Developmental Idealism and Declines in Support for Female Genital Cutting in  
Egypt from 2005 to 2014

Hilary Barker

A thesis submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of  
Master of Science

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## ABSTRACT

### Developmental Idealism and Declines in Support for Female Genital Cutting in Egypt from 2005 to 2014

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In Egypt, female genital cutting (FGC) is illegal and declining in prevalence; however, the majority of women continue to support the practice. Using data from the 2005 and 2014 Egypt Demographic and Health Surveys, I examine changes in attitude toward FGC to explain social change through the framework of developmental idealism (Thornton 2015). Models are estimated using logistic regression to test if support for discontinuation of FGC is greater among women who have adopted progressive values or among women who are more traditional. Findings indicate that women who were Christian, rural, married younger, and that underwent FGC became supportive of discontinuation at greater rates than women who were Muslim, urban, married older, and did not undergo FGC. Women at various levels of education, wealth, and other indicators of development changed support at equal rates. Findings indicate that women in all social strata are receptive to messages against FGC.

Keywords: female genital cutting, developmental idealism, Egypt

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## Developmental Idealism and Declines in Support for Female Genital Cutting in Egypt from 2005 to 2014

Female genital cutting (FGC), also known as female genital mutilation or female circumcision, has been practiced on more than 125 million women and girls worldwide, and is primarily concentrated in Africa and the Middle East (World Health Organization 2014). FGC is a non-medical procedure that involves partially or completely removing external female genitalia and is performed on girls generally anytime between birth and age 15. There are several types of FGC with varying degrees of severity, but all forms are internationally recognized as human rights violations and are illegal in many countries.

The practice originated in Africa and is now a tradition followed in many societies throughout the continent. Reasons for practicing FGC vary from community to community and family to family, but there are several primary motivations. One reason is identity--women have come to represent cultural authenticity and bear responsibility for transferring traditional identity (Yount 2004). Although FGC did not originate in Islam and most Muslims worldwide do not participate in the procedure, many Muslims in Africa believe the Quran supports FGC and that their religion requires them to circumcise their daughters (Caldwell, Orubuloye, and Caldwell 2000). Also, in many communities, an uncircumcised woman would not be able to marry as FGC is a sign of virginity and therefore marriageability. The practice is also perpetuated by false information claiming that FGC promotes health and cleanliness (Caldwell et al. 2000).

With only a few exceptions, prevalence rates of FGC are decreasing and countries in which FGC was formerly ubiquitous are now experiencing a shift away from the practice. It is now illegal in 19 countries in Africa and support for the practice is gradually waning (WHO 2014). However, in some countries, such as Egypt, the majority of women continue to support

FGC's continuation and choose to have their daughters circumcised. Because the practice of FGC can be placed within a broader framework as an indicator and outcome of social change, this analysis aims to determine which demographic groups respond more to broader developmental changes based on data from the Egypt Demographic and Health Surveys.

## BACKGROUND

### *Theoretical Background*

In this study, I examine changes in attitudes towards FGC through the framework of developmental idealism (DI), a concept introduced by Thornton (2001) to explain global social change. DI is a cultural model of development that encompasses a set of values and beliefs that dictates human behavior and social change. Thornton, Dorius, and Swindle (2015) claim that the beliefs of DI have influenced changes in family life, such as gender roles and marriage, as well as changes in government, education, human rights, social conventions, and religion. DI proposes that individuals have the right to be free and equal and that relationships should be based on consent. According to this framework, a society that fully embraces DI values would not support or practice female genital cutting, a practice that can be physically and emotionally damaging to women, treats women and girls as commodities in the marriage market, and takes away freedom of choice in regards to their own bodies and their choice of spouse.

Most elements of modern society are not one-directional but rather have "reciprocal cause-and-effect relationships" (Thornton et al. 2015:77). For example, ending the practice of FGC can be both a cause and effect of modern society once values change regarding treatment of women and requirements for marriage. Elements of modern society such as modern family structure, secularism, human rights, and scientific-rational decision-making would make FGC

irrelevant and obsolete. Abandoning FGC would also modernize marriage markets and family structure, and perpetuate ideas of gender equality and human rights. Due to the reciprocal nature between the practice of FGC and other elements and values of modern society, establishing a causal relationship is not only difficult but also erroneous.

Most of the previous literature on female genital cutting employs modernization theory, feminist theory, convention theory, or a combination of the three to explain its decline. However, these theories fail to sufficiently account for broad social change. Modernization theory argues that economic development leads to a gradual decline in the practice. A shift in the economic structure leads directly to a shift in the social structure, and thereby weakens the relevance of female genital cutting (Yount 2002). When a society transitions from an agricultural economy to an industrial or service economy, declines in the importance of land or labor lead to a reduction in family control over individual behavior and an increase in individual rights. When financial ties to family or community are loosened, the incentives of FGC decline. However, modernization theory has mixed empirical support (Mackie 1996; Caldwell, Orubuloye, and Caldwell 1997; Yount 2002).

Modernization theory is based on economic growth, but when the conditions of a society are such that the economic growth is not accompanied by changes in politics or culture, social change is less likely to occur. A number of prominent development economists question whether desirable social change is an inevitable consequence of national economic growth (Hicks and Streeten 1979; Streeten 1994). They claim that economic progress can occur without leading to “greater levels of democracy, personal freedoms, human rights, educational achievement, and improved health” (Thornton et al. 2015:80), which are needed to facilitate changes in individual

beliefs and behavior to end the practice of FGC. DI is a better model to account for social change because it directly addresses changes in values that sometimes, but not always, accompany economic growth. In addition, DI explains that social changes can be both consequences and causes of development.

Developmental idealism, which values gender equality, encompasses the feminist approach, which argues that the heightened status of women leads to a decline in FGC. When women, through education and employment, become less dependent on their husbands and on the institution of marriage for their security, FGC as a prerequisite for marriage is less necessary. Additionally, when women have higher status, they also have more power to make decisions for themselves and their daughters independent of the expectations of the community (Hayford 2005). Focusing on women's empowerment is a part of the diffusion of DI values and can be an indirect yet effective way to transform harmful traditional practices.

Gruenbaum (2005) explains that by addressing "the most urgent improvements people desire in their lives, a sense of empowerment can grow which then leads to women's local initiatives to end female genital cutting. While this empowerment model may not yield immediate change, the change that results will be transformative and lasting" (431). Levin (2006), while analyzing an individual case of FGC in Sudan, explains that experiencing FGC symbolically silenced the woman and made her a victim of trauma: "a muted, timid, introspective person replaced the earlier vivacious spirit" (173). External forces cannot exclusively change a practice that so affects the internal world of women. Feminist scholars argue that there must be internal change to gradually undue years of suppression and submissiveness for real and lasting external change to occur. When a society and individuals

internalize values of personal freedom and gender equality, their behavior will align. However, feminist theory alone cannot account entirely for social changes, such as the decline of FGC. DI is a more useful model in that it includes ideas of gender equality along with other factors, such as wealth, technological innovation, and urbanization.

Convention theory is a third possible explanation for declines in female genital cutting, but one that has been less closely examined. According to convention theory, FGC declines rapidly when parents see that other parents in their community have abandoned the practice. This means that parents will be willing to forgo FGC for their daughters if the other women competing in the marriage market will also be uncircumcised, or if potential husbands for their daughters want a wife who is uncircumcised. Hayford (2005) tested convention theory in Kenya by looking at the correlation of FGC behavior within marriage markets and concluded that women behave in ways similar to that of other women who live near them. However, a community will only desire to abandon FGC once they have embraced DI values of equality, freedom, and health. Additionally, convention theory fails to address family dynamics and value-based constraints, such as ideas about gender and women's status.

Declines in the support and practice of FGC are most likely due to the spread of DI values and beliefs. However, various regions, communities, and groups are at different stages of advancement and have not equally embraced the DI framework. In Egypt, FGC is illegal and yet the country continues to have one of the highest prevalence rates on the continent (United Nations Children's Fund 2013). This shows that at least some DI values have been adopted at the national level but have not yet entirely disseminated to individual citizens. However, the rates of support and prevalence of FGC in Egypt have been gradually declining. The aim of this paper

more specifically, is to determine which groups are more likely to embrace developmental idealism and abandon FGC.

### *Female Genital Cutting in Egypt*

Female genital cutting began in Egypt possibly during the Pharaonic period and continues into the twenty-first century (Egypt DHS 2005). Egyptian activists began lobbying against FGC in the 1920s, and efforts to abandon the practice gained momentum starting in the 1970s and 1980s due to international awareness and pressure. The Convention on the Elimination of all Forms of Discrimination against Women (CEDAW), which Egypt ratified in 1981, required Egypt to file reports on gender equity. In 1991, the Egyptian representative to the convention misleadingly claimed that the practice was dying out and that it was a private matter outside of state regulation (Boyle 2001).

The history of female genital cutting in Egypt demonstrates the idea that developmental idealism can be a force behind cultural clashes within and between societies (Thornton et al. 2015). In 1994, while the United Nations International Conference on Population and Development was taking place in Cairo, CNN broadcasted the circumcision of a 14-year old Egyptian girl, leading to increased international pressure on Egypt (Seif El Dawla 1999). Government leaders spoke out against FGC, but they failed to take official legal action. In 1995, a prominent Egyptian Islamic cleric issued a decree stating that FGC was a religious ritual and encouraged families to circumcise their daughters. Five years later, a health ministry decree banned FGC in government hospitals, and then in 2006 Egypt's Grand Mufti of Al-Azhar, the most prominent Sunni Islamic authority, officially denounced the practice and said it was unnecessary according to Islam (Yount 2004). Finally, in 2008 the government officially

criminalized the practice. Many parents, however, continue to have their daughters circumcised and officials are only notified if the girl dies from the procedure. Nevertheless, very few parents or doctors have been given FGC-related charges and the practice persists (Darwish 2014).

In Egypt, the prevalence rates of FGC have slowly declined since the Egypt Demographic and Health Survey were collected in 1995. In that year, the prevalence of FGC among ever-married women ages 15-49 was 97% and remained constant over the next 5 years (Egypt DHS 1995; Egypt DHS 2000). In 2005, 3 years before criminalization, 96% of ever-married women ages 15-49 had been circumcised, and by 2014, 6 years after criminalization, the prevalence rate had declined to 92%. The decline appears small, but most of the women surveyed were old enough to have been circumcised before criminalization in 2008. Prevalence rates do not necessarily capture social shifts as well as changes in attitudes. In 1995, 82% of women surveyed wanted FGC to continue, while in 2000, support had decreased to 75%. In 2005, 68% believed it should continue, and by 2014, support dropped to 58% (Egypt DHS 1995; Egypt DHS 2000; Egypt DHS 2005; Egypt DHS 2014). The majority of women in Egypt continue to support FGC despite its criminalization, but the rates of support and prevalence of the practice have dropped steadily since 1995.

That over half of Egyptian women continue to support FGC even after it has been outlawed shows that this is a deeply embedded cultural practice. The persistence of FGC is partially due to its connection to Islam. Despite the Grand Mufti's denouncement in 2006, 51.7% of women in 2014 continued to believe that religious precepts require circumcision (Egypt DHS 2014), indicating that the official views of religious leaders do not necessarily change the long held views of the lay people. A 2003 report in Egypt found that the main motivation for the

practice was to maintain tradition, to prevent illicit sexual behavior in women, and to meet the preference of husbands (El-Zanaty and Way 2004). Additionally, a 2010 study found that women's main reason for supporting the practice was to reduce and regulate girls' and women's sexual desires and sexual drive. Women did not directly state that circumcision is a prerequisite to marriage, but they did say that FGC helps to ensure premarital virginity and marital fidelity, which are both highly valued in Egypt (Fahmy, El-Mouelhy, and Ragab 2010). Government policies and religious statements have not drastically changed women's attitudes towards FGC because many women view it as a nonnegotiable tradition that holds up social values that are important to them and the functioning of their families.

Although the majority of women continue to support FGC, many groups in Egypt are actively working to end the practice. The Coalition against FGM/Cutting is an alliance of over one hundred Egyptian non-governmental organizations focused on women's rights that combined in 2003 to eradicate FGC in Egypt. The coalition has taken a developmental approach. Instead of directly telling families to abandon FGC, they provide elementary students, especially girls, funds and support to continue their education (Darwish 2014). The NGOs give educational lectures that address the issue of FGC along with other topics related to health and wellbeing. NGOs in other countries have succeeded at reducing the prevalence rates of FGC in the communities in which they work. A notable example is Tostan, an NGO that started in Senegal and has now spread to other countries in Africa. Tostan has been successful by empowering women through education and helping them gain skills to work outside the home and become leaders in their communities (Molloy 2013). NGOs throughout Egypt and other parts of Africa recognize that in order to see a decline in FGC, changes in national policy must be accompanied



by efforts to promote elements of DI, such as mass education for girls and boys, human rights, health, and gender equality.

### *Policy Change vs. Social Change*

Although Western governments and international organizations pressured Egypt and other African countries to criminalize FGC, there is some debate over the effectiveness of policy change to bring about social change. Some evidence indicates that criminalization can trigger backlash and lead to increased rates of FGC. For example, a 1946 law criminalizing FGC in Sudan led to public uprisings and increased prevalence rates (Shell-Duncan and Hernlund 2000). Similarly, in 1956 when a district in Kenya banned FGC, adolescent girls rebelled against the restriction and performed FGC on each other (Thomas 2000). In these examples, the communities felt that foreign forces threatened their traditions and identity; they resisted by strengthening their traditional customs and continuing to practice FGC with even greater conviction. In the 1990s, some Egyptians also resisted both external and internal pressure to abandon FGC with the intent of preserving their traditional Egyptian and Muslim identities. Theorists argue that governments cannot successfully outlaw cultural practices because they are too integral to society, instead people must decide to stop on their own (Shell-Duncan and Hernlund 2000). This idea supports the DI model, which argues that a broader cultural change must take place. Even if a government embraces DI values and changes its policies, individual citizens must also embrace those values in order for social change to occur.

The 2008 criminalization of FGC in Egypt and the declines in prevalence and support of FGC indicate that social change is occurring, though gradually. To further understanding of these issues, I pursue two aims. The first is to examine the relationship between the diffusion of

developmental idealism and the end of female genital cutting. Thornton et al. (2015) identifies several attributes associated with modernity and valued by developmental idealism, including wealth, technological sophistication, urban society, education, higher ages at marriage, planned and low fertility, and a high degree of personal autonomy. I look at factors reflective of these attributes to determine how these factors impact the likelihood that an individual will support the discontinuation of FGC. The second aim is to explore how DI values diffuse by identifying the characteristics of individuals who are most likely to change their support from favoring FGC's continuation to discontinuation. I hypothesize that individuals who have already embraced some aspects of DI are more likely to support ending harmful traditional practices such as FGC. I begin by examining potential indicators of DI values.

### *Wealth and Technology*

The wealth of individuals is a significant indicator of DI values. Research has shown that higher levels of wealth are negatively associated with support for FGC (Blaydes and Izama 2015). A wealthier nation is more likely to be economically developed with more industry and technology, and therefore have more modern ideational exposure. Wealthier individuals more likely have resources to view the world globally and be exposed to DI values. Similarly, wealthier nations and individuals are more likely to have access to greater technological sophistication and resources (Thornton et al. 2015).

On the individual level, those who reside in a household that owns and frequently uses a television and computer are more likely to have a modern perspective and hold DI values and beliefs. Countries with high rates of FGC, such as Egypt, use media campaigns to try to end FGC and some women claim that mass media discouraging FGC has affected their views of the

practice (Adeokun et al. 2006). Women who have access to TV, radio, newspapers, and the internet, are likely more aware of customs and perspectives outside of their own community and may have more exposure to information that condemns the practice of FGC. I hypothesize that wealth and media exposure are negatively associated with support for FGC and the decision to have a daughter circumcised. I also predict that changes in support of FGC from 2005 to 2014 are greater among those in wealthier positions and with greater access to technology.

### *Urban Society*

Urbanization is a marker of developmental idealism potentially associated with declines in female genital cutting. In a study in Minia, Egypt, mothers in urban areas were 70% less likely to have their daughters circumcised than mothers in rural areas (Yount 2002). However, a study in Nigeria showed no difference in rates of FGC in urban and rural areas once education and parents' age were accounted for (Caldwell et al. 1997). The mixed results regarding the correlation between urbanization and FGC indicate that whether a woman lives in a rural or urban area may be country specific and dependent on the opportunities available in cities and the community structure of urban environments.

Urbanization is often associated with modernization and abandonment of traditional practices. However, in some instances, urban residents may hold on more strongly to tradition. For example, in some urban areas in Sudan, those in lower socioeconomic classes adopted the practice of FGC to make their daughters more marriageable (Mackie 1996). However, when other families leave behind their traditional villages for city life, they also leave behind the community that holds them accountable to uphold certain traditions. If FGC no longer serves its social purpose, then families would be less likely to continue the practice. Also, women in urban

environments may have more access to education, employment, media, and general exposure to other ways of life, and therefore be less likely to support FGC. Urbanization does not always correlate with lower rates of FGC, but there is enough evidence to consider it a potential explanatory factor in Egypt. I predict that women in urban areas are less likely to support FGC than women in rural areas and that change in attitude regarding FGC are greater in urban areas than in rural.

### *Education*

The developmental idealism model provides possible explanations for the effects of educational attainment on attitudes toward FGC. A woman with higher education is less likely to be part of traditional culture that perpetuates the practice of FGC and is more likely to be a member of modern society. She is more likely to be economically and intellectually independent and distant from traditional communities that set FGC as a prerequisite for marriage. An educated woman is likely to have greater autonomy and more modern attitudes that could lead her to abandon FGC.

In the majority of cases, a girl's mother decides whether or not the daughter will be circumcised rather than the girl herself, therefore most studies look at the education level of the mother and how that influences her decision to circumcise her daughter or her attitude towards FGC. A study examining FGC in Minia, Egypt found that maternal education was negatively associated with the intent and decision to circumcise a daughter (Yount 2002). Over 88% of mothers with no education intended to circumcise their daughters, while 14% of mothers with a university education reported similar intentions, and the difference remained significant when adjusting for other household characteristics (Yount 2002).

Several other national and community-based studies in Egypt show similar findings – better-educated women less often support the continuation of female genital cutting and less often decide to circumcise their daughters (El-Zanaty et al. 1996; Sayed, Abd El-Aty, and Fadel 1996; El-Gibaly et al. 2002). Similarly, nearly all uncircumcised girls in southwest Nigeria had parents with at least some secondary education, and the association was strongest among more educated mothers (Orubuloye, Caldwell, and Caldwell 2000). A study in Ethiopia also showed that education was strongly correlated with a stance against FGC. Some 55% of illiterate women were against FGC while 96% of women who had completed secondary school were against the practice (Rahlenbeck and Mekonnen 2010).

Women with more education are less likely to support FGC for a variety of reasons that originate with exposure to DI values. For example, women with more education have a broader definition of the role of women and believe that women can secure their own stability through education rather than solely through marriage (Yount 2002). Additionally, an educated woman is more likely to be aware of the potential health risks associated with FGC. Such women may also be exposed more to discussions that oppose the practice and be introduced to Western ideas of marriage and sexual satisfaction (Yount 2002). I hypothesize that education is negatively associated with support and practice of FGC and that changes to supporting discontinuation are greater among those with more education.

### *Modern Marriage*

Age at marriage is also an important indicator of developmental idealism as it relates to women's status. The DI framework is associated with increased age at marriage. A woman who marries at an older age is more likely to have higher status within her marriage and be less

traditional. Additionally, women who are closer in age to their husbands may be more likely to have an egalitarian marriage and be less traditional regarding FGC. Little research has been done studying the correlation between age at first marriage and support for FGC, but studies do show that in developing countries, the older a woman is at first marriage, the more likely she is to be autonomous from male control and have social status (Mason 1987; Garenne 2004). I predict that those in delayed marriages are less likely to support FGC and to decide to circumcise their daughters, and that changes in attitude regarding FGC from 2005 to 2014 are greater among women in delayed marriages.

#### *Planned and Low Fertility*

Low and controlled marital fertility is a key attribute of the modern family in the DI framework. Research indicates that citizens of Egypt perceive a strong link between fertility and development, with a large majority of respondents believing that fertility is negatively associated with development (Thornton et al. 2012). Studies also link declines in fertility with declines in FGC. Blaydes and Izama (2015) found that for Muslims in Egypt, the total number of children is positively associated with support for FGC. DI values of gender egalitarianism link fertility and FGC. Studies show that women in more egalitarian marriages are likely to have fewer children, possibly because the woman has more control of her body and is able to make family planning decisions free of male domination (Feyisetan and Togunde 1988). I hypothesize that women who use contraceptives and have fewer children are less likely to support FGC, and that change in attitudes and behavior regarding FGC is greater among women with planned and low fertility.

### *Personal Autonomy*

A high degree of personal autonomy for women is an attribute valued by developmental idealism. Two ways to determine a woman's personal autonomy is her employment status and her involvement in personal and household decision-making. Women who work for pay outside the home may be more likely to hold DI values and support FGC because of exposure to foreign cultures and perspectives that condemn FGC, or because economic independence make both marriage and FGC less necessary. Additionally, economic independence may provide women greater bargaining power in their household or community to decide against circumcision. Women working outside the home changes not only the economic, but also the social and cultural structure that supports traditional practices. One of the central values of DI is modern family behavior (Thornton et al. 2015). The traditional family structure of the woman working solely within the domestic sphere is replaced by a modern family structure in which a woman can also be involved in public life and the husband and wife share domestic duties.

Additionally, feminist theory explains that women who work outside the home may feel more empowered and be more highly valued by themselves and others. In a study looking at data from Egypt, Mali, Sudan, Kenya, and Niger, women who worked outside the home were less likely to favor the continuation of FGC and less likely to circumcise their daughters (Boyle, McMorris, and Gomez 2002). However, other studies, after adjusting for factors such as age, education, religion, marital status, and employment, found no significant relationship between FGC and employment status (Jackson et al. 2003). Therefore, it is important to consider other cultural and ideological changes along with employment status.

The extent to which a woman is involved in decision-making regarding contraceptive use, the spending of earnings, healthcare, and visits to family is also an indicator of the level of her personal autonomy. When a woman has the freedom to make choices regarding herself and her family, she is more likely to reflect DI values in other aspects of her life and less likely to support FGC. A woman's decision-making power is often indicative of her status. Hayford (2005) claims that "increased status for women also means that women are better able to make and follow through on decisions about their own bodies and their daughters' bodies" (122). I hypothesize that women with greater personal autonomy are less likely to support FGC, and that changes in attitudes regarding FGC are greater among women with more personal autonomy.

#### *Other Factors*

In addition to the attributes associated with DI, other demographic variables also need to be considered. Although one religion is not more or less "developed" than another religion, Thornton and colleagues (2015) explain that "Christianity has played a significant role in the diffusion of DI" (78). Christian missionaries globally "evangelized many cultural features of Western society, such as individualism (personal salvation through grace and works), personal freedom (ability to choose right and wrong), and universality (all people are children of God and should accept Christianity)" (Thornton et al. 2015:79). Consequently, Christians in Egypt are more likely to adhere to these values than Egyptians of other faiths. Studies show that in most communities, Muslims are more likely to practice FGC than Christians. One Egyptian scholar theorized that resisting the abandonment of FGC in Egypt was a way for some Muslims to resist Western oppression and domination (Seif El Dawla 1999). Therefore, religion is an important control variable to determine if the practice of FGC in Egypt is related more to Egyptian or



Muslim identity. In addition, controls for woman's age and whether or not the respondent experienced FGC herself are also important (Caldwell et al. 2000; El-Gibaly et al. 2002; Yount 2002; Hayford 2005; Rahlenbeck and Mekonnen 2010).

The gradual decline in FGC and shift of support for the practice in Egypt, as well as throughout Africa, is likely due to a variety of factors. However, the majority of women in Egypt continue to support the continuation of FGC, therefore it is important to determine which factors contribute to its persistence even after criminalization. I aim to examine to what extent attitudes towards female genital cutting have changed in Egypt from 2005 to 2014 utilizing data from the Demographic and Health Surveys in Egypt. In particular, I consider the contribution of wealth, technology, urbanization, education, age at marriage, fertility, and personal autonomy to changing attitudes towards FGC. Additionally, religion, age, and whether the woman experienced FGC herself are included in the model as control variables.

## DATA AND METHODS

### *Data*

Data for this analysis come from the Demographic and Health Surveys (DHS), which are nationally representative household surveys of women of childbearing age. The surveys provide data in the areas of health, population, and nutrition. Data for this study come from surveys conducted in Egypt in 2005 and 2014. Since Egypt criminalized FGC in 2008, I compare one survey before the change in law to one survey after the change. Both surveys are of ever-married women aged 15 to 49. The 2005 survey has a sample of 19,474 women, and the 2014 survey has a sample of 21,762 women. I eliminated women ages 15-19 since they are below the average age at marriage in Egypt and therefore could bias the sample. To include birth cohorts that are

represented in both survey years, I limited the sample to women born between 1966 and 1985 for a total sample size of  $n = 26,597$ . These respondents are likely mothers or future mothers, and are therefore involved in decision-making regarding FGC.

### *Measures*

#### *Dependent variable*

The outcome variable measures attitudes towards female genital cutting. The Egypt DHS refers to FGC as “female circumcision” or “circumcision.” The survey question regarding attitudes towards FGC used in both 2005 and 2014 is “Do you think that the practice of circumcision should continue or be stopped?” The possible responses are “continued,” “discontinued,” and “don’t know”. Initial analyses indicated that the respondents who answered “don’t know” are similar to the respondents who answered “discontinued,” therefore the respondents who answered “don’t know” are dropped to create a dichotomous variable coded 1 for ‘discontinue’ and 0 for “continue”; the sample size reduces to 24,216.

#### *Indicators of developmental idealism*

The independent variables are wealth, technology, urbanization, education, modern marriage, planned and low fertility, and personal autonomy. Wealth is measured by an index that places households on a standardized scale of relative wealth (measured in quintiles). Technology is measured by the respondent’s frequency of media exposure. If she rarely or never listens to the radio, watches TV, or reads newspapers or magazines, the response is coded 0; if she does one out of three at least once a week, the response is coded 1; if she does two out of three at least once a week, the response is coded 2; if she does all three at least once a week, the response is coded 3. Urbanization is measured by the type of place of residence—“rural” (0) or “urban” (1).

The DHS classifies large cities, small cities, and towns as urban areas, while rural areas are countryside (Demographic and Health Surveys 2008).

Educational attainment is categorical and measured as “no education” (0), “incomplete primary” (1), “complete primary” (2), “incomplete secondary” (3), “complete secondary” (4), and “higher” (5). Age at marriage measures the woman’s age at the time of her first marriage in years. Fertility is measured by the number of children born to the respondent, and her modern contraceptive use and intention is measured as “does not intend to use” (0) and “using or intends to use” (1).

Personal autonomy is indicated by employment, decision-making, and justification of wife beating. Employment measures whether or not the respondent has worked outside the home in the last 12 months, coded 0 for “no” and 1 for “yes.” Decision-making is measured by whether she decides about her health care, about large household purchases, and about visits to family or relatives. If she has no say in any of those decisions, the response is coded 0, if she has a say in one out of three, the response is coded 1, if she has a say in two out of three, the response is coded 2, and if she has a say in all three, the response is coded 3. Also included in empowerment is whether the respondent thinks wife beating is justified under five different circumstances--if she goes out without telling her husband, if she neglects the children, if she argues with her husband, if she refuses to have sex with him, and if she burns the food. If she justifies wife beating in at least one circumstance, the response is coded 0; if she never justifies wife beating, the response is coded 1.

### *Control variables*

The control variables include religion (“Muslim”=0, “Christian”=1), and whether or not the respondent experienced FGC herself (“yes”=0, “no”=1). The variable for age is coded according to birth year, starting from year 1966 coded as 0 to year 1985 coded as 19. To track the changes from before to after the change in law, year of survey is included and coded 0 for 2005, and 1 for 2014.

### *Analysis*

Because the outcome variable is dichotomous, models are estimated using logistic regression with odds ratios as coefficients. In each model, I include the year of interview as a covariate to measure change and see the trend in the outcome. I also consider interactions with survey year. If the odds ratio for year is closer to 1.0 when an interaction is included in the model, then the variable interacting with year accounts for some of the increased support for discontinuing FGC. In initial analyses, I ran 13 separate models in which each variable was paired in an interaction with year of interview to determine which variables had significant effects in the shift from favoring continuation to discontinuation between 2005 and 2014. Included in my results are a model with no interactions (model 1) and the four models that had significant interactions. Model 2 includes the interaction between place of residence and year of interview, model 3 the interaction between age at first marriage and year of interview, model 4 the interaction between religion and year of interview, and model 5 the interaction between whether the woman experienced FGC and year of interview.

In Table 1 I first describe the sample of women included in the analyses and in table 2 show the percentage of women who support the discontinuation of FGC according to individual

characteristics. Next, I present the influence of the four interactions on the change in attitudes toward FGC in four separate models (Table 3), and last I present graphically the changes over time by place of residence, age at marriage, religion, and experiencing FGC (Figures 1-4).

## RESULTS

### *Descriptive Statistics*

The average respondent was 29 years old during the 2005 survey and 38 years old during the 2014 survey. Less than 5% of respondents are Christian while the remaining are Muslim, and about 95% of respondents have undergone FGC. The mean wealth index score is about 2 (0 minimum, 4 maximum). On average respondents consume between 1 and 2 types of media each week. Almost 43% of women reside in urban areas and the mean educational attainment is between complete primary and incomplete secondary. The average age at marriage is nearly 20 years old and the average number of children is nearly 3. 78% of respondents use or intend to use contraception. About 19% of women work outside the home, 57% never justify wife beating, and on average women have a say in about 2 out of 3 household decisions.

(Table 1 about here)

The statistics presented in Table 2 show that the percentage of women supporting the abandonment of FGC increased for each sub-group of the sample from 2005 to 2014 and in both years, the individual variables follow a similar pattern that are consistent with previous literature. Women who are wealthier, who have more media exposure, who live in urban areas, and who have more education are more likely to favor FGC's discontinuation. The higher the age at first marriage, the higher the likelihood a woman is to support abandoning FGC. Also women more likely to want FGC to discontinue use contraception and have worked outside the home in the

last 12 months. Women who justify wife beating and women who have little say in household decision-making are more likely to want FGC to continue. Muslim women and women who have experienced FGC are significantly more likely to support FGC's continuation. Year of birth gives no clear indication of views regarding FGC. These descriptive results support the theory that women with more exposure to the values of developmental idealism are more likely to support social change.

(Table 2 about here)

### *Multivariate Analysis*

#### *Wealth and technology*

The odds ratios for the indicators of wealth and technology are similar across the 5 models. Favoring discontinuation increases by 25-26% in each successive quintile of the wealth distribution and increases about 17% for each additional source of media. These results support the hypothesis that women who reflect the DI characteristics of wealth and media exposure are more likely to favor the discontinuation of female genital cutting. However, in initial analyses I discovered that neither the interaction between wealth and year of interview nor the interaction between media exposure and year of interview are statistically significant. Women at various levels of wealth and media exposure changed their support to discontinuation in 2014 at approximately equal rates. This fails to support my prediction that changes in support of FGC from 2005 to 2014 are greater among women who are wealthier and who have more access to media.

### *Urban society*

In model 1, urban residents are about 33% more likely to support discontinuation than rural residents in 2005, and in model 2, urban residents are about 45% more likely, which supports the hypothesis that women who reflect the DI characteristics of urbanization are more likely to favor the discontinuation of female genital cutting. The statistically significant interaction between year of interview and place of residence included in model 2 indicates that urban and rural residents had different rates of change from favoring continuation to discontinuation from 2005 to 2014. Although urban residents are more likely to support discontinuation than rural residents are, urban residents are 15.5% less likely to shift to favoring discontinuation in 2014. These results are contrary to my hypothesis that women who already characterize some aspects of DI, such as living in an urban area, are more likely to shift to supporting discontinuation in 2014. Urban women are more likely to favor FGC's abandonment, but the increased support for discontinuation from 2005 to 2014 is due more to the rate of change among rural women.

(Figure 1 about here)

### *Education*

In model 1, supporting discontinuation increases about 17% for each additional level of educational attainment. These results support the hypothesis that women who reflect the DI characteristics of education are more likely to favor the discontinuation of female genital cutting. However, an initial analysis in which I ran a model including the interaction between educational attainment and year of interview indicated that there is no difference across the education levels in the change of support for FGC.

### *Modern marriage*

In model 1, each one-year increase in age at first marriage is associated with a 2% increase in the odds of supporting discontinuation. The effect is small though statistically significant and supports the hypothesis that women who reflect the DI characteristics of delayed marriage are more likely to favor the discontinuation of female genital cutting than women who marry at younger ages.

Model 3 includes the interaction between year of interview and age at first marriage and all other variables. The variable for age at marriage was centered so that the value 0 corresponds to the mean of 19.8 years of age. Each one-year increase from the mean in age at first marriage is associated with a 2.9% higher likelihood of supporting discontinuation in 2005. However, women who marry at older ages are slightly less likely to shift from favoring FGC's continuation in 2005 to favoring FGC's discontinuation in 2014. Women who embody the DI characteristic of delayed marriage are more likely to favor FGC's discontinuation, but these women are not changing their support at faster rates than women who marry younger. However, this is consistent with my previous findings that rural women, though less likely to support FGC's abandonment, are changing their support at higher rates than urban women, who are already more likely to support abandonment. Contradictory to my hypothesis, women who do not have DI characteristics are changing their attitude toward FGC at faster rates than the women who are already more likely to support discontinuation.

(Figure 2 about here)



### *Planned and low fertility*

In model 1, the number of children ever born has a negative correlation with supporting discontinuation and contraceptive use and intention has no significant correlation. Each additional child born to a woman is associated with a 7.5% decrease in the odds of supporting discontinuation. The results do not support the hypothesis that women who use or intend to use contraception are more likely to favor the discontinuation of female genital cutting, but they do support the claim that women with low fertility are more likely to favor discontinuation. Models that include the interactions between year of interview and each of the fertility indicators fail to support the second part of the hypothesis. Although women with less children are more likely to support discontinuation, the number of children is not a predictor for change in support from 2005 to 2014.

### *Personal autonomy*

In model 1, the odds ratio for employment is not significant, and therefore whether a woman has worked in the past year is not a predictor of her views on the continuation of FGC. The other indicators for personal autonomy--whether she never justifies wife beating and the extent of her household decision-making are positively correlated with favoring discontinuation. Women who never justify wife beating are about 46% more likely to favor discontinuation than women who justify wife beating. Each one-unit increase in the number of household decisions in which a woman has a say is associated with a 12% increase in the odds of favoring FGC abandonment. These results support the hypothesis that women who reflect the DI characteristic of personal autonomy are more likely to favor the discontinuation of female genital cutting. However, initial analyses failed to find support for the second portion of the hypothesis.

Interactions between the year of interview and each of the indicators for personal autonomy do not have significant odds ratios and therefore are not significant predictors of change.

#### *Other controls*

In model 1, religion, experiencing FGC, and year of interview have a positive association with supporting discontinuation while birth year has a negative correlation. The largest predictors of support for discontinuing FGC are religion and whether the respondent herself experienced FGC. Women who have not experienced FGC are almost 23 times more likely to favor discontinuation than women who have. Christian women are nearly 6 times more likely to favor discontinuation than Muslim women are. Birth year has a slight effect in that each one-year increase in age is associated with a 0.06% increase in the odds of supporting discontinuation.

Model 4 includes the interaction between year of interview and religion and all other variables. Out of the 4 models, model 4 has the lowest odds ratio for year, so we can conclude that religion accounts for more of the increased support for abandoning FGC. In this model, Christian women are 4.6 times more likely to favor discontinuation than Muslim women are. Christian women are also 63% more likely to change to supporting discontinuation in 2014. Although Christianity itself is not a DI characteristic, these results are consistent with other studies that show Muslims are more likely to support the continuation of traditions such as FGC. However, the results of this model show a different pattern than in the other 3 models. Christian women are more likely to support discontinuation in both years than Muslim women are, and they are changing their support to discontinuation at a faster rate than Muslim women are. These results perhaps indicate that FGC in Egypt is a Muslim practice more than a rural practice or a practice of women who marry at younger ages.

(Figure 3 about here)

Model 5 includes the interaction between year of interview and whether the respondent experienced FGC. Women who have not experienced FGC are nearly 35 times more likely to favor discontinuation than women who have experienced FGC. However, women who have experienced FGC are almost 50% less likely to change their views from supporting continuation to supporting discontinuation from 2005 to 2014. The pattern of these results are consistent with those of the first 2 models. Women who have not experienced FGC have a drastically higher likelihood of supporting discontinuation than women who have not experienced FGC, but women who have experienced FGC are shifting to support abandonment at a higher rate.

(Figure 4 about here)

(Table 3 about here)

## CONCLUSION

Female genital cutting is a critical issue in the areas of human rights, development, and gender equality. FGC is practiced by millions of people and has potentially serious health effects for women and girls. Although the Egyptian government criminalized the practice, and campaigns and educational efforts against FGC led both by governments and non-governmental organizations are becoming more prevalent, many families continue to circumcise their daughters. In order for interventions to be effective, we need more research to better understand the issue and how change occurs. FGC is particularly complex since it is a deeply ingrained traditional practice with ties to religion, culture, and community. In order to better understand the process of social change in the context of eradicating FGC in Egypt, I examined the influence of indicators of developmental idealism on whether a woman supports the discontinuation of FGC

as well as which attributes predict changing support from continuation to discontinuation from 2005 to 2014.

All variables excluding contraceptive use and employment predict support for discontinuation. The greatest predictors are religion, whether the respondent has undergone FGC, and the year of interview. The variables that predict changing support for discontinuation from 2005 to 2014 are place of residence, age at first marriage, religion, and experiencing FGC. While urban residents, respondents who married at older ages, and women who did not experience FGC are more likely to support discontinuation, they changed their support to discontinuation at lower rates than rural residents, respondents who married at younger ages, and women who experienced FGC. Christian women are more likely to support discontinuation and shifted from continuation to discontinuation at steeper rates than Muslim women.

A possible explanation for why urban respondents are more likely to support discontinuing FGC but are less likely than rural residents to shift their support is that urban residents were already exposed in 2005 to DI values, such as the harmfulness of FGC. Since 2005, rural residents have become more exposed to values and ideas that urban residents had already been exposed to. Rural women were more exposed to knowledge of FGC in 2014 than in 2005, so they are now catching up to urban women. However, in 2005, an urban woman likely had already heard of the potential harm from FGC and so if she continued to support FGC despite this knowledge, she likely had other reasons, perhaps religious or cultural, that made her more resistant to change. In order to confirm this explanation and better understand the difference between rural and urban residents shifting support, further research that explores

levels of exposure to information on FGC between 2005 and 2014 in rural and urban areas is needed.

To promote further change, I suggest NGOs and governmental programs focus on rural areas. Urban residents have the advantage of living in a city and being exposed daily to more global ideas, therefore extra resources should be placed in rural areas. Nearly 60% of Egypt's population resides in rural areas (CAPMAS 2015). This analysis shows that rural residents are open to change and with increased awareness can become as likely to support eradication as urban residents.

The lower rates of change among women who marry at older ages and women who have not undergone FGC likely have a similar explanation. By 2005, women who married older already embraced DI values and therefore supported FGC's discontinuation. Also, women who had not undergone FGC were already convinced that it should be discontinued, so less were shifting from continuation to discontinuation. These results show that change is occurring faster among women who are more traditional. Women who married at younger ages and came from traditional families that chose FGC are beginning to turn away from FGC and adopt DI values of health and gender equality.

Religion follows a different pattern. Christian women support discontinuation at higher rates, and as a group shifted from supporting continuation to discontinuation at higher rates. These results show that even though FGC is not an official Islamic practice Islam and FGC are closely tied in Egypt and many supporters of FGC view the practice as part of their Muslim tradition and are therefore more resistant to change. To increase the rates of supporting discontinuation among Muslims, I recommend that media campaigns and outreach programs

aimed to end FGC focus on Muslims and make clear that FGC is not an Islamic practice. Anti-FGC efforts could raise awareness of the Grand Mufti's official condemnation of FGC and the statement from the Azhar Supreme Council for Islamic Research explaining that FGC has no basis in Islamic law (UNFPA Egypt 2016).

Variables that are high predictors of supporting discontinuation, such as wealth and education, are not predictors for change between 2005 and 2014 since women regardless of wealth or education level are shifting their support at equal rates. FGC is not on the decline because more individual women are becoming more educated or more wealthy, since the rates of change are the same for all education and wealth levels. Although increasing formal education and improving the economic standing of women is important for many reasons, a woman does not need to be highly educated and wealthy in order to learn the risks that come with FGC and support its eradication. Opinions towards FGC are likely declining because of a broader shift in what is socially acceptable. The 2008 criminalization is likely both a cause and consequence of this social shift. Real social change occurs when it influences not just government officials or the wealthy and educated elite, but rather when it affects the values and opinions of individuals at all levels of society and in every region.

Also, since 2005, there have been an increasing number of programs and campaigns aimed to end FGC that target the population as a whole rather than only the upper strata. The United Nations Population Fund and National Population Council in Egypt have made videos educating Egyptians on the issues surrounding FGC and encouraging them to end the practice. They have also developed programs for law enforcement agents, medical professionals, and health outreach workers (UNFPA Egypt 2016).

Favoring discontinuation of FGC, although the outcome variable in this study, is also itself an indicator of developmental idealism. Increasingly, women in Egypt who still have little formal education are turning away from FGC because there is greater awareness regarding its risks. More organizations and campaigns are in place to educate women on FGC and other health topics, human rights, and gender equality. Educational programs and media campaigns increased after the 2008 criminalization. Legal change shows that developmental values were embraced at the top, but not by individual citizens. However, that change at the top led to more support and funding for efforts to eradicate FGC.

This analysis is limited in that the survey sample includes only ever-married women; if FGC makes a woman marriageable, then there will be more women who have not undergone FGC in the never-married population of women and therefore more people who are likely to support its discontinuation. Another limitation is that the DHS is cross-sectional rather than longitudinal, and therefore I cannot track changes over time among individuals, only within groups.

This study adds to existing literature by further exploring the correlations between attitudes regarding FGC and social factors. Other studies have looked at conditions of decline, but no one has yet placed it in the framework of developmental idealism, a model of development that explains how global social change occurs when individuals and communities change their values and beliefs. Adding to the research on FGC is essential in order to discern how the practice is changing and how social dynamics can both perpetuate FGC and contribute to its decline. Further research is needed to evaluate the policies and programs aimed to end FGC in order to maximize the effectiveness of their design and implementation.

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## TABLES

Table 1. Descriptive statistics for factors predictive of favoring discontinuation of FGC

| Variables                        | Minimum | Maximum | Mean   | S.D.  |
|----------------------------------|---------|---------|--------|-------|
| <i>Wealth and technology</i>     |         |         |        |       |
| Wealth index                     | 0       | 4       | 2.048  | 1.440 |
| Media exposure                   | 0       | 3       | 1.460  | 0.687 |
| <i>Urbanization</i>              |         |         |        |       |
| Urban                            | 0       | 1       | 0.426  | 0.494 |
| <i>Education</i>                 |         |         |        |       |
| Educational attainment           | 0       | 5       | 2.522  | 1.887 |
| <i>Modern marriage</i>           |         |         |        |       |
| Age at first marriage            | 9       | 49      | 19.767 | 4.187 |
| <i>Low and planned fertility</i> |         |         |        |       |
| Number of children               | 0       | 19      | 2.961  | 2.031 |
| Contraceptive use and intention  | 0       | 1       | 0.782  | 0.413 |
| <i>Personal autonomy</i>         |         |         |        |       |
| Employment                       | 0       | 1       | 0.193  | 0.395 |
| Never justify wife beating       | 0       | 1       | 0.57   | 0.495 |
| Decision-making                  | 0       | 3       | 2.209  | 1.031 |
| <i>Controls</i>                  |         |         |        |       |
| Birth year                       | 1966    | 1985    | 1976   | 5.658 |
| Christian (0 = Muslim)           | 0       | 1       | 0.047  | 0.211 |
| Not experienced FGC              | 0       | 1       | 0.076  | 0.266 |
| Year of interview                | 0       | 1       | 0.533  | 0.500 |

Source: Demographic and Health Surveys

Table 2. Percentage of women who think FGC should be discontinued

|                               | 2005<br>%<br>(N=11,304) | 2014<br>%<br>(N=12,912) |
|-------------------------------|-------------------------|-------------------------|
| <i>Wealth index</i>           |                         |                         |
| Poorest                       | 12.76                   | 18.60                   |
| Poorer                        | 13.52                   | 24.10                   |
| Middle                        | 19.36                   | 31.77                   |
| Richer                        | 31.19                   | 44.03                   |
| Richest                       | 51.02                   | 61.52                   |
| <i>Media exposure</i>         |                         |                         |
| Never/rarely                  | 21.85                   | 34.23                   |
| 1 source weekly               | 18.78                   | 35.25                   |
| 2 sources weekly              | 23.10                   | 44.91                   |
| 3 sources weekly              | 49.40                   | 59.55                   |
| <i>Place of residence</i>     |                         |                         |
| Rural                         | 15.81                   | 26.34                   |
| Urban                         | 39.20                   | 51.75                   |
| <i>Educational attainment</i> |                         |                         |
| No education                  | 12.66                   | 19.81                   |

|  |        |       |
|--|--------|-------|
| Incomplete primary                       | 15.79  | 22.98 |
| Complete primary                         | 19.76  | 34.30 |
| Incomplete secondary                     | 25.88  | 30.97 |
| Complete secondary                       | 35.92  | 42.46 |
| Higher                                   | 57.36  | 63.19 |
| <i>Age at marriage</i>                   |        |       |
| 9-15                                     | 11.80  | 22.16 |
| 16-22                                    | 24.18  | 35.18 |
| 23-29                                    | 41.60  | 49.01 |
| 30-36                                    | 43.13  | 49.30 |
| 36-42                                    | 32.00  | 40.63 |
| 42-49                                    | 100.00 | 50.00 |
| <i>Contraceptive use &amp; intention</i> |        |       |
| Does not use or intend to use            | 23.44  | 35.89 |
| Uses or intends to use                   | 26.33  | 37.58 |
| <i>Employment</i>                        |        |       |
| Worked in last 12 months                 | 24.03  | 35.93 |
| Didn't work in last 12 months            | 31.56  | 43.59 |
| <i>Justify wife beating</i>              |        |       |
| Justified                                | 17.27  | 22.46 |
| Never justified                          | 34.69  | 45.33 |
| <i>Decision-making</i>                   |        |       |
| Never has say                            | 18.33  | 24.38 |
| Has say for one situation                | 20.16  | 28.64 |
| Has say for two situations               | 24.40  | 32.02 |
| Has say for three situations             | 29.76  | 42.50 |
| <i>Birth year</i>                        |        |       |
| 1966-1970                                | 25.70  | 38.00 |
| 1971-1975                                | 24.15  | 37.47 |
| 1976-1980                                | 25.33  | 39.07 |
| 1981-1985                                | 25.46  | 36.91 |
| <i>Religion</i>                          |        |       |
| Muslim                                   | 23.93  | 35.33 |
| Christian                                | 59.10  | 78.74 |
| <i>Experienced FGC</i>                   |        |       |
| Yes                                      | 22.62  | 31.05 |
| No                                       | 89.69  | 91.01 |
| <i>Total</i>                             | 25.73  | 37.20 |

Source: Demographic and Health Surveys

Table 3. Logistic regression predicting support for discontinuing FGC (N=24,216)

|                                    | Model 1    |       | Model 2    |       | Model 3    |       | Model 4    |       | Model 5    |       |
|------------------------------------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
|                                    | Odds ratio | s.e.  | Odds ratio | s.e.  | Odds ratio | s.e.  | Odds ratio | s.e.  | Odds ratio | s.e.  |
| <i>Wealth and technology</i>       |            |       |            |       |            |       |            |       |            |       |
| Wealth index                       | 1.252**    | 0.022 | 1.261**    | 0.022 | 1.253**    | 0.022 | 1.253**    | 0.022 | 1.256**    | 0.022 |
| Media exposure                     | 1.176**    | 0.034 | 1.167**    | 0.033 | 1.171**    | 0.033 | 1.170**    | 0.033 | 1.184**    | 0.034 |
| <i>Urbanization</i>                |            |       |            |       |            |       |            |       |            |       |
| Urban                              | 1.330**    | 0.056 | 1.452**    | 0.080 | 1.327**    | 0.056 | 1.329**    | 0.056 | 1.322**    | 0.056 |
| <i>Education</i>                   |            |       |            |       |            |       |            |       |            |       |
| Educational attainment             | 1.167**    | 0.013 | 1.164**    | 0.013 | 1.166**    | 0.013 | 1.168**    | 0.013 | 1.166**    | 0.013 |
| <i>Modern marriage</i>             |            |       |            |       |            |       |            |       |            |       |
| Age at first marriage              | 1.020**    | 0.004 | 1.020**    | 0.004 | 1.029**    | 0.007 | 1.012**    | 0.004 | 1.020**    | 0.004 |
| <i>Planned and low fertility</i>   |            |       |            |       |            |       |            |       |            |       |
| Number of children                 | 0.925**    | 0.009 | 0.925**    | 0.009 | 0.926**    | 0.009 | 0.925**    | 0.009 | 0.924**    | 0.009 |
| Contraceptive use                  | 1.034      | 0.042 | 1.034      | 0.042 | 1.033      | 0.042 | 1.035      | 0.042 | 1.034      | 0.042 |
| <i>Personal autonomy</i>           |            |       |            |       |            |       |            |       |            |       |
| Employment                         | 1.024      | 0.042 | 1.025      | 0.043 | 1.022      | 0.043 | 1.024      | 0.043 | 1.023      | 0.043 |
| Never justify wife beating         | 1.462**    | 0.053 | 1.464**    | 0.053 | 1.462**    | 0.053 | 1.465**    | 0.053 | 1.467**    | 0.054 |
| Decision-making                    | 1.123**    | 0.019 | 1.122**    | 0.019 | 1.123**    | 0.019 | 1.124**    | 0.019 | 1.125**    | 0.019 |
| <i>Controls</i>                    |            |       |            |       |            |       |            |       |            |       |
| Birth year                         | 0.994*     | 0.003 | 0.994*     | 0.003 | 0.994*     | 0.003 | 0.994*     | 0.003 | 0.994*     | 0.003 |
| Christian (0 = Muslim)             | 5.761**    | 0.445 | 5.761**    | 0.446 | 5.766**    | 0.446 | 4.638**    | 0.480 | 5.794**    | 0.445 |
| Not experienced FGC                | 22.673**   | 2.003 | 22.699**   | 2.006 | 22.626**   | 1.999 | 22.680**   | 2.002 | 34.946**   | 5.624 |
| Year of interview                  | 1.514**    | 0.060 | 1.645**    | 0.085 | 1.524**    | 0.341 | 1.474**    | 0.060 | 1.553**    | 0.063 |
| <i>Interactions with year and:</i> |            |       |            |       |            |       |            |       |            |       |
| Place of residence                 |            |       | 0.845*     | 0.056 |            |       |            |       |            |       |
| Age at first marriage              |            |       |            |       | 0.984*     | 0.008 |            |       |            |       |
| Religion                           |            |       |            |       |            |       | 1.632*     | 0.257 |            |       |
| Experienced FGC                    |            |       |            |       |            |       |            |       | 0.526*     | 0.100 |

Source: Demographic and Health Surveys

\*\*p<0.001; \*p<0.05

## FIGURES

Figure 1. Support for FGC Discontinuation by Year of Interview and Place of Residence

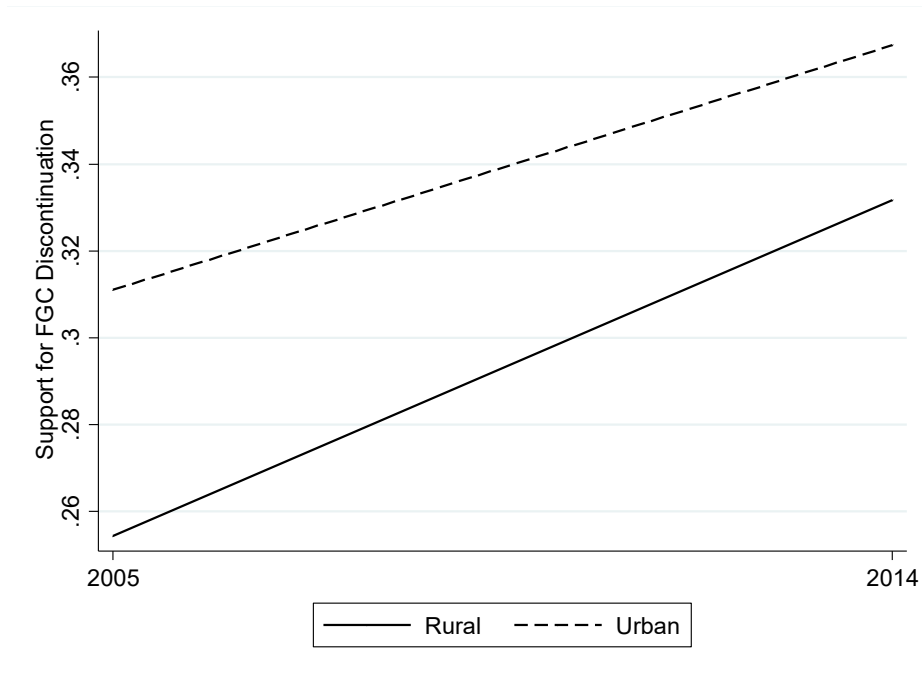


Figure 2. Support for FGC Discontinuation by Year of Interview and Age at First Marriage

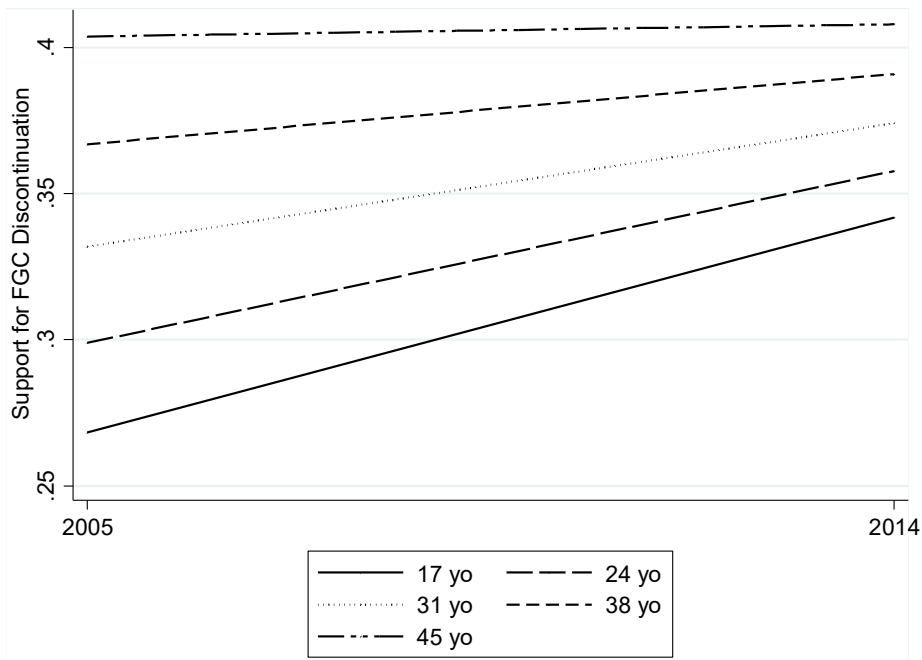




Figure 3. Support for FGC Discontinuation by Year of Interview and Religion

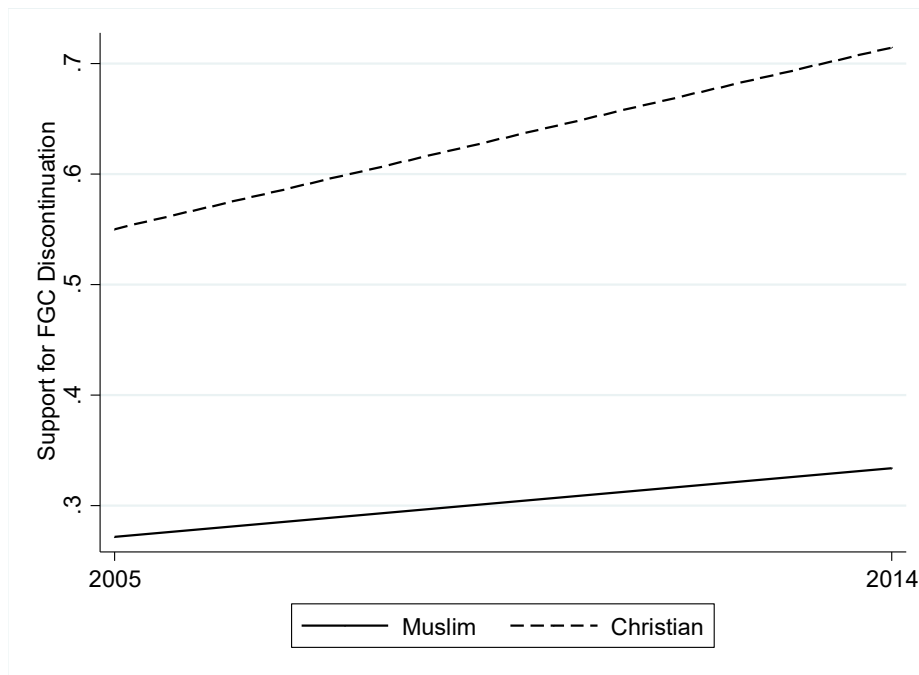


Figure 4. Support for FGC Discontinuation by Year of Interview and Experiencing FGC

