

Estimating induced abortion rates in the Savanes Region of Togo using the Westoff Regression Approach

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Conflict of Interest

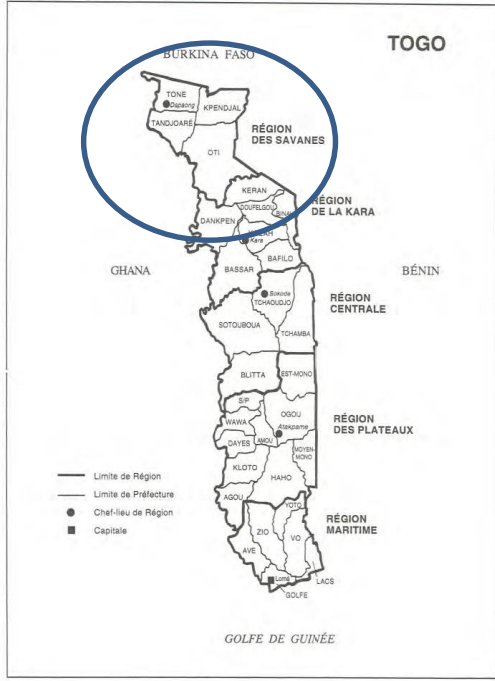
I have no conflict of interest to report.



Togo



Togo



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Background

- All abortions prior to 2007 were illegal in Togo
- Even when illegal induced abortion still takes place
- Records of illegal abortion are not kept frequently except for cases of post abortion care
- There is a need for estimates of rates of induced abortion in countries with restrictive abortion laws to establish the demand for abortion and post abortion care

(Loi n 84-14 du 16 mai, 1984; Rossier, 2003; World Health Organization, 2007)



“So what are the ‘actual’ numbers?”

- Abortion rates are likely the most inaccurate of all demographic data
- Lack of data available on actual numbers of abortions from health records or direct survey methods
- Women often under report abortions due to stigma, fear, shame
- Health care workers do not want to admit to providing these services due to legal and moral implications



(Johnston & Westoff, 2010; Rossier, 2003; Singh, Remez, & Tartaglione, 2010; Westoff, 2008)



Why do we need this information?

- Unsafe abortion contributes to maternal mortality and morbidity
 - Having estimates will help establish how much induced abortion contributes to maternal mortality and morbidity
 - Knowing the magnitude of illegal/unsafe abortion facilitates an informed discussion on improving women's reproductive health

(Ahman & Shah, 2007)



Background of the 1998 Togo Demographic and Health Survey

- A standard DHS survey
 - Usually conducted every 5 years in low resource countries
 - Togo 1998 (Phase 3)
 - Conducted research from February-May 1998
 - 7517 Households
 - 8569 Women aged 15-49
 - 3819 Men aged 15-59
 - *Savanes* region: 1679 women aged 15-49
 - Analyzed the “Women’s Questionnaire”

(Measure DHS, 1998)



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DHS Methodology



- The sample is generally representative:
 - At the national level
 - At the residence level (urban-rural)
 - At the regional level (departments, states)
- The sample is usually based on a stratified two-stage cluster design:
 - First stage: Enumeration Areas (EA) are generally drawn from Census files
 - Second stage: In each EA selected, a sample of households is drawn from an updated list

(Measure DHS, 1998)



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Secondary Data Analysis Purpose

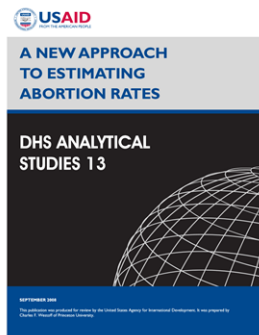
- Question: What are the rates of induced abortion in the Savanes region of Togo represented in the data compiled in the 1998 Togo Demographic and Health Survey?
- Rates were calculated by:
 - Rural/Urban
 - Religion (Animist, Islam, Catholic, Protestant Christian)
 - Ethnicity (Gourma, non-Gourma Togolese, Non-Togolese)
 - Socioeconomic status (Radio in household)
 - Use of prenatal care with first pregnancy
 - Unwanted, mistimed pregnancy status (Last pregnancy wanted, mistimed, unwanted)



Westoff Regression Approach

- Based on knowledge of strong correlation between the contraceptive prevalence rate, education, and the total abortion rate
- Calculated using data from 18 countries
- Use the regression formula (most accurate regression in West African region based on data from Nigeria)

(Westoff, 2008)



Calculating Total Fertility Rates

events	Coef.	Std. Err.	t	P>t	[95% Conf Interval]
Rate_1519	0.152802	0.016441	9.29	0	0.119546 0.186057
Rate_2024	0.316518	0.013209	23.96	0	0.289802 0.343235
Rate_2529	0.322562	0.012888	25.03	0	0.296494 0.34863
Rate_3034	0.280039	0.016074	17.42	0	0.247526 0.312551
Rate_3539	0.23475	0.025994	9.03	0	0.182172 0.287328
Rate_4044	0.130171	0.016694	7.8	0	0.096405 0.163937
Rate_4549	0.076414	0.016371	4.67	0	0.043302 0.109527
TFR	7.566277	0.296051	25.56	0	6.967457 8.165098

```
. tfr2, cluster(v001)
weight variable is v005
Preparing table of events and exposure for 3 year(s) preceding the
survey
Period covered: 3/1995 to 2/1998
Central date is 1996.7287
Number of cases (women): 1674
Number of person-years (weighted): 4765.6338
Number of events (weighted): 1153.0503

ASFRs - TFR
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(Schoumaker, 2013)



DEMOGRAPHIC RESEARCH

VOLUME 28, ARTICLE 38, PAGES 1093-1144
 PUBLISHED 29 MAY 2013
<http://www.demographic-research.org/Volumes/Vol28/38/>
 DOI: 10.4054/DemRes.2013.28.38

Research Material

A Stata module for computing
 fertility rates and TFRs from
 birth histories: tfr2

Bruno Schoumaker

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Regression Equation

Total abortion rate = 2.94 - .033(Modern contraceptive prevalence rate) - .252(Total fertility rate) + .091(Mean years of education)

Modern contraceptive prevalence rate = Ever married women who are using modern contraceptive methods/Ever married women

Total Fertility Rate = The average number of children that would be born to a woman over her reproductive lifetime (summation of age specific fertility rates) 15-49 years

(Westoff, 2008)



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Regression Equation

- Requires less data manipulation
- Regression is based on data using 18 countries
- This particular model is the most accurate in the West African region
- This is a novel approach to calculating induced abortion rates from DHS data

(Westoff, 2008)



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Results



Demographics

		Urban (n=340) n(%)	Rural (n=1339) n (%)	Total (n=1679) n(%)
Ethnicity	Gourma	221 (65.0)	1125 (91.5)	1446 (86.2)
	Non-Gourma Togolese (Adja-ewe, Akposso, Anaife, Kabye, other)	65 (19.1)	55 (4.1)	120 (7.1)
	Not Togolese	54 (15.9)	59 (4.4)	113 (6.7)
Education	No Education	164 (48.2)	1179 (88.1)	1343 (80.0)
	Incomplete Primary	107 (31.5)	139 (10.4)	246 (14.7)
	Complete Primary	5 (1.5)	1 (0.1)	6 (0.4)
	Incomplete Secondary	63 (18.5)	20 (1.5)	83 (4.9)
	Higher	1 (0.3)	0 (0.0)	1 (0.1)
Religion	None	6 (1.8)	121 (9.0)	127 (7.6)
	Animist	47 (13.8)	726 (54.3)	773 (46.1)
	Islamic	185 (54.4)	158 (11.8)	343 (20.4)
	Catholic	88 (25.9)	179 (13.4)	267 (15.9)
	Protestant	14 (4.1)	154 (11.5)	168 (10.0)
Proxy SES	Owens a radio	216 (63.7)	442 (33.1)	658 (39.9)
	Does not own a radio	123 (36.3)	892 (66.9)	1015 (60.7)



Demographics Continued

		Urban (n=340) n(%)	Rural (n=1339) n(%)	Total (n=1679) n(%)
Age	15-19	94 (27.6)	227 (17.0)	321 (19.1)
	20-24	66 (19.4)	185 (13.8)	251 (14.9)
	25-29	47 (13.8)	254 (19.0)	301 (17.9)
	30-34	40 (11.8)	259 (19.3)	299 (17.8)
	35-39	38 (11.2)	167 (12.5)	205 (12.2)
	40-44	26 (7.6)	147 (11.0)	173 (10.3)
	45-49	29 (8.5)	100 (7.5)	129 (7.7)
Marriage	Never married	102 (30.0)	129 (9.6)	231 (13.8)
	Currently married	211 (62.1)	1156 (86.3)	1367 (81.4)
	Formally married	27 (7.9)	54 (4.0)	81 (4.8)
Prenatal care with 1st child	Yes	127 (95.5)	712 (86.0)	839 (87.3)
	No	6 (4.5)	116 (14.0)	122 (12.70)
	Missing/NA			718
Wantedness of last child	Then	97 (72.9)	650 (78.8)	747 (78.0)
	Later	31 (23.3)	153 (18.5)	184 (19.2)
	No more	5 (3.8)	22 (2.7)	27 (2.8)
	Missing/NA			721

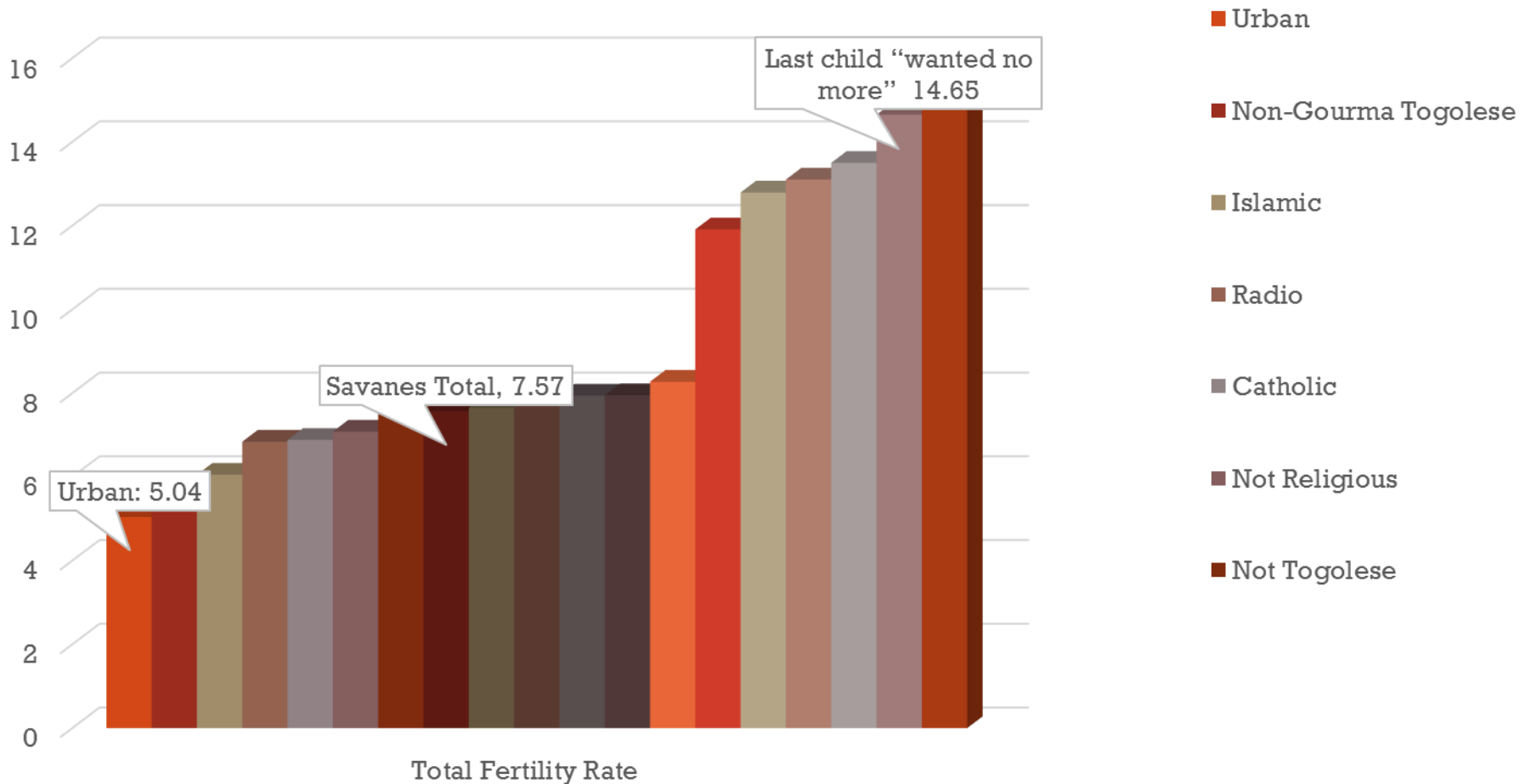


Contraceptive Use/Family Planning

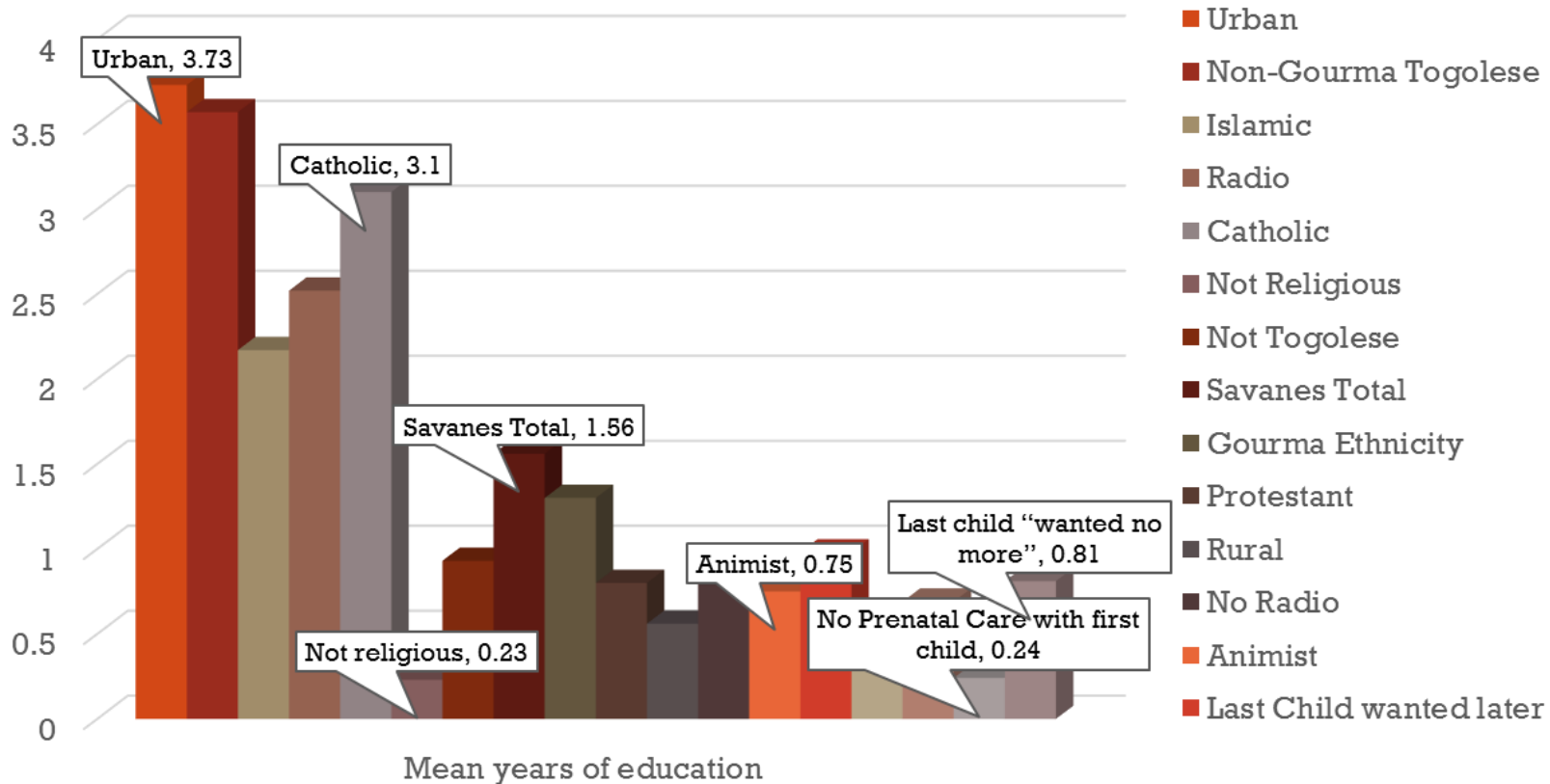
	Urban (n=340) n (%)	Rural (n=1339) n (%)	Total (n=1679) n(%)
Not using	242 (71.2)	1017 (76.0)	1259 (75.0)
Pill	5 (1.5)	5 (0.4)	10 (0.6)
IUD	4 (1.2)	3 (0.2)	7 (0.4)
Injections	13 (3.8)	28 (2.1)	41 (2.4)
Diaphragm/foam/jelly	1 (0.3)	1 (0.1)	2 (0.2)
Condom	4 (1.2)	10 (0.7)	14 (0.8)
Norplant	2 (0.6)	2 (0.1)	4 (0.2)
Female sterilization	1 (0.3)	1 (0.1)	2 (0.2)
Periodic abstinence	36 (10.6)	39 (2.9)	75 (4.5)
Withdrawal	1 (0.3)	0 (0.0)	1 (0.1)
Other	0 (0.0)	2 (0.1)	2 (0.1)
Abstinence	31 (9.1)	231 (17.3)	262 (15.6)



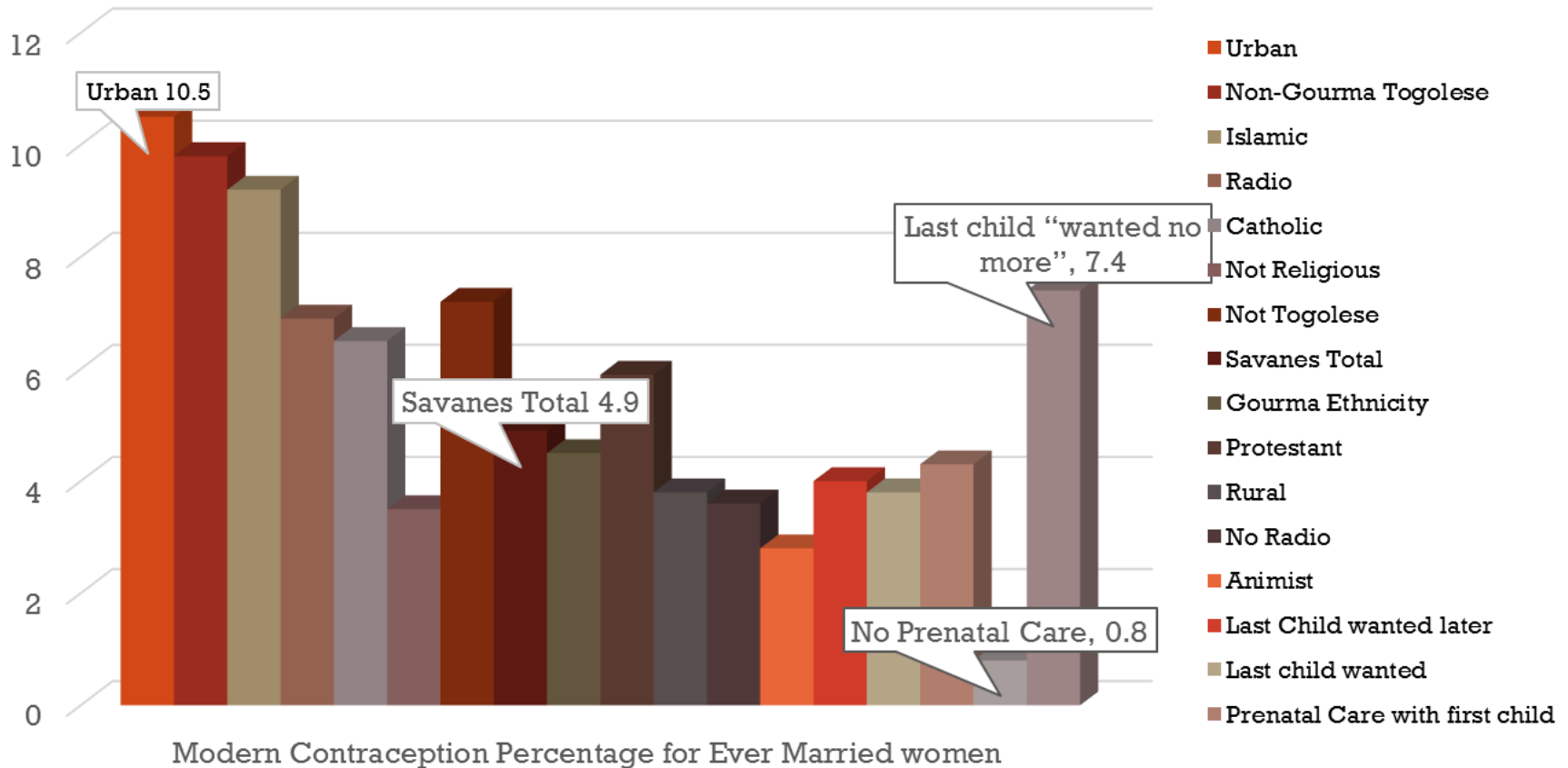
Total Fertility Rates Women 15-49



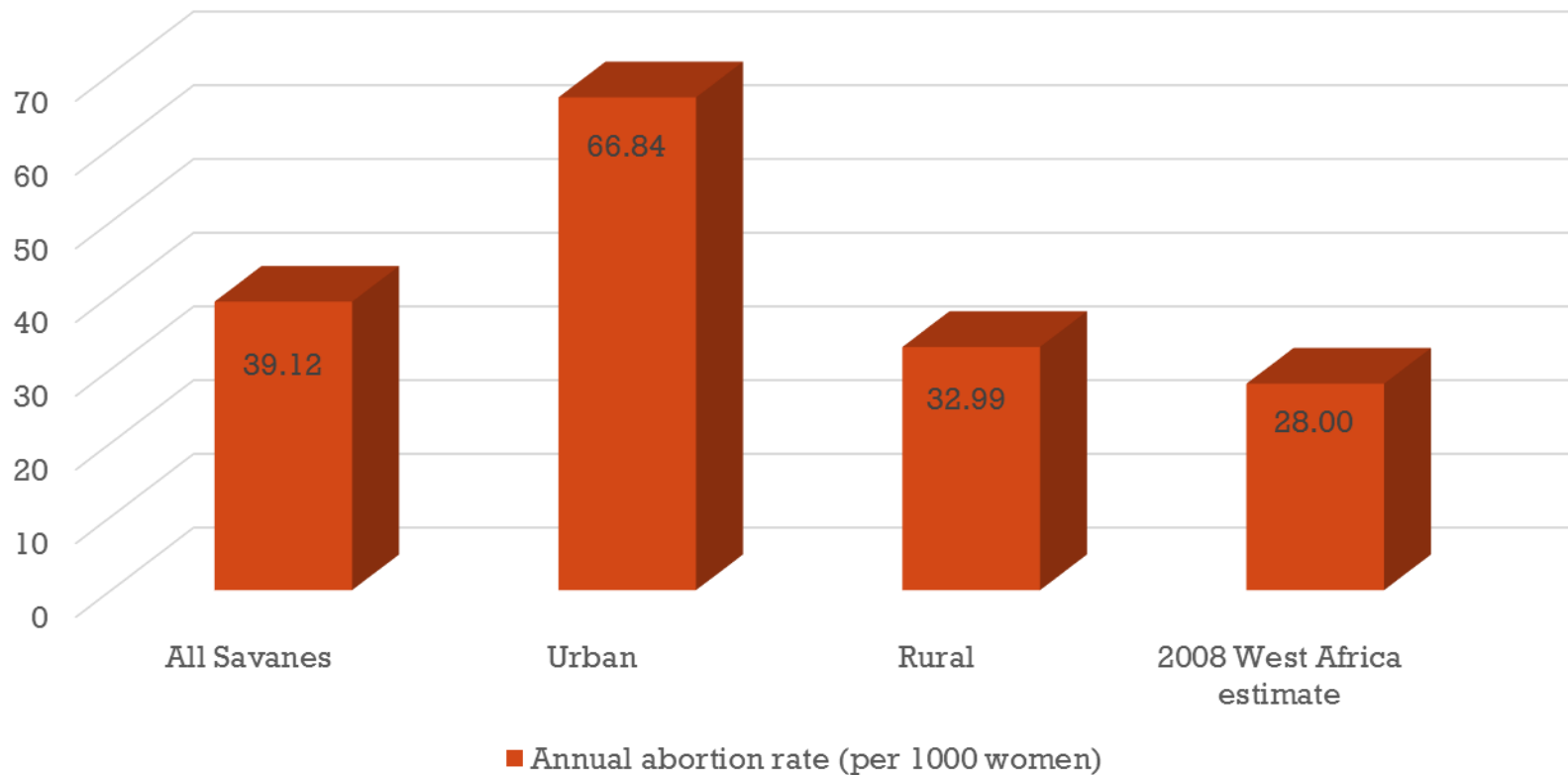
Mean Years of Education Women 15-49



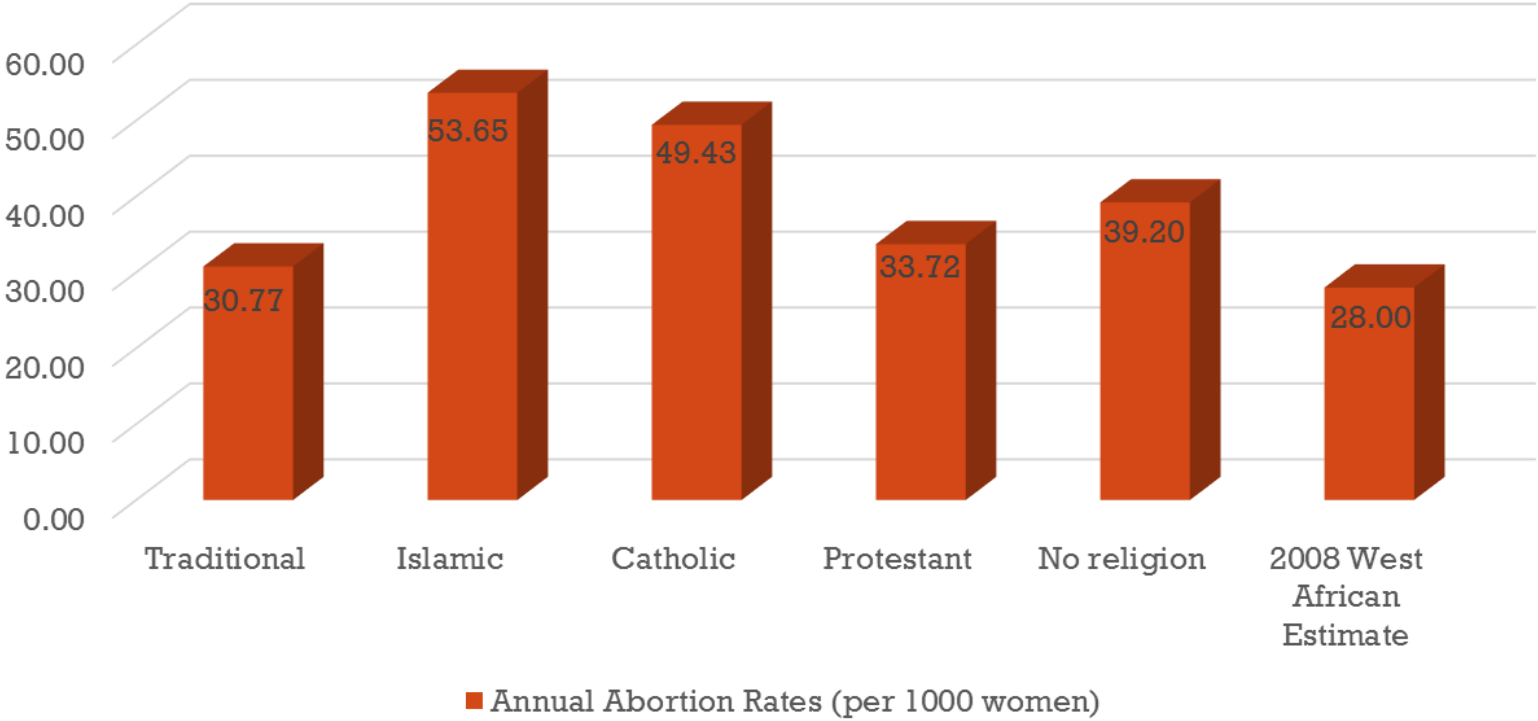
Percentage of Modern Contraception



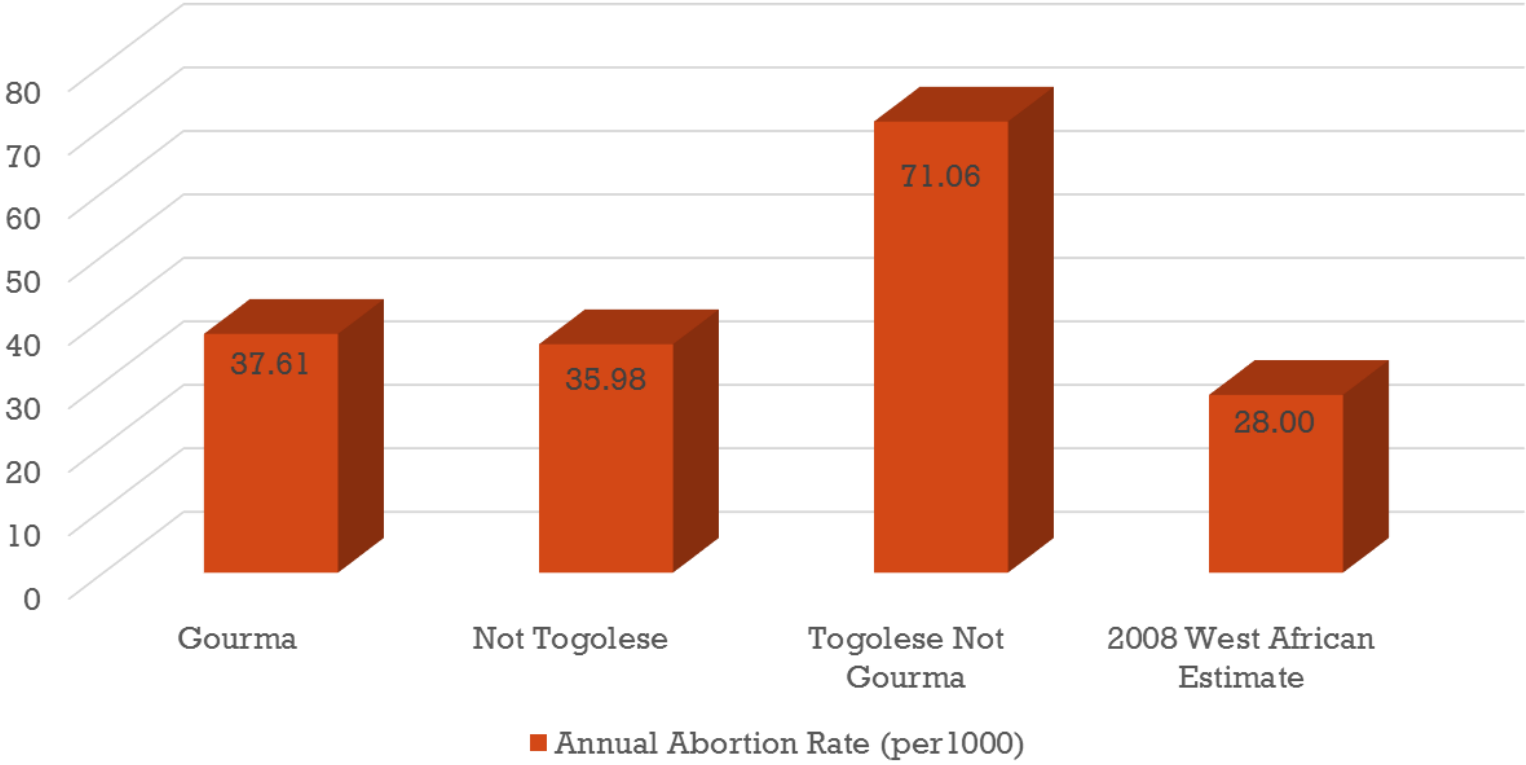
Estimated Annual Abortion Rate by Location



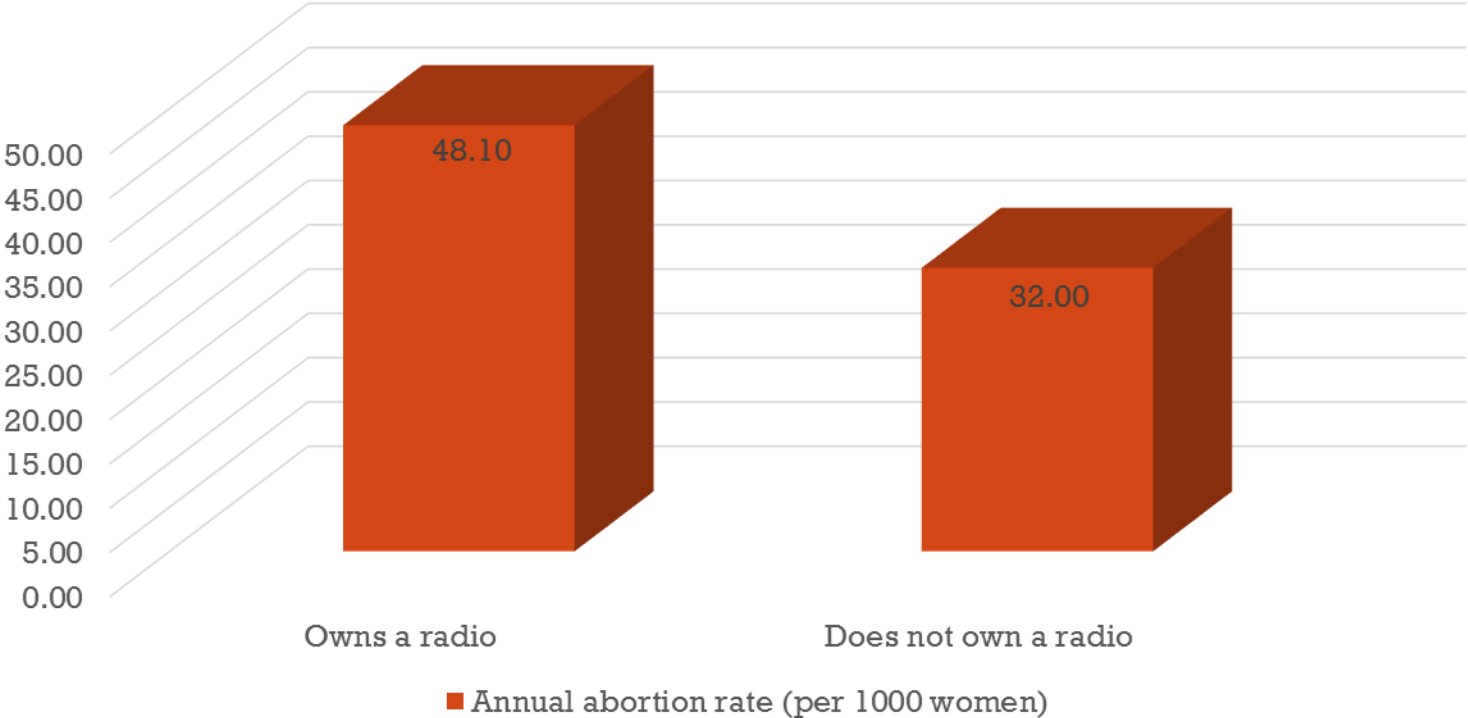
Estimated Annual Abortion Rate by Religion



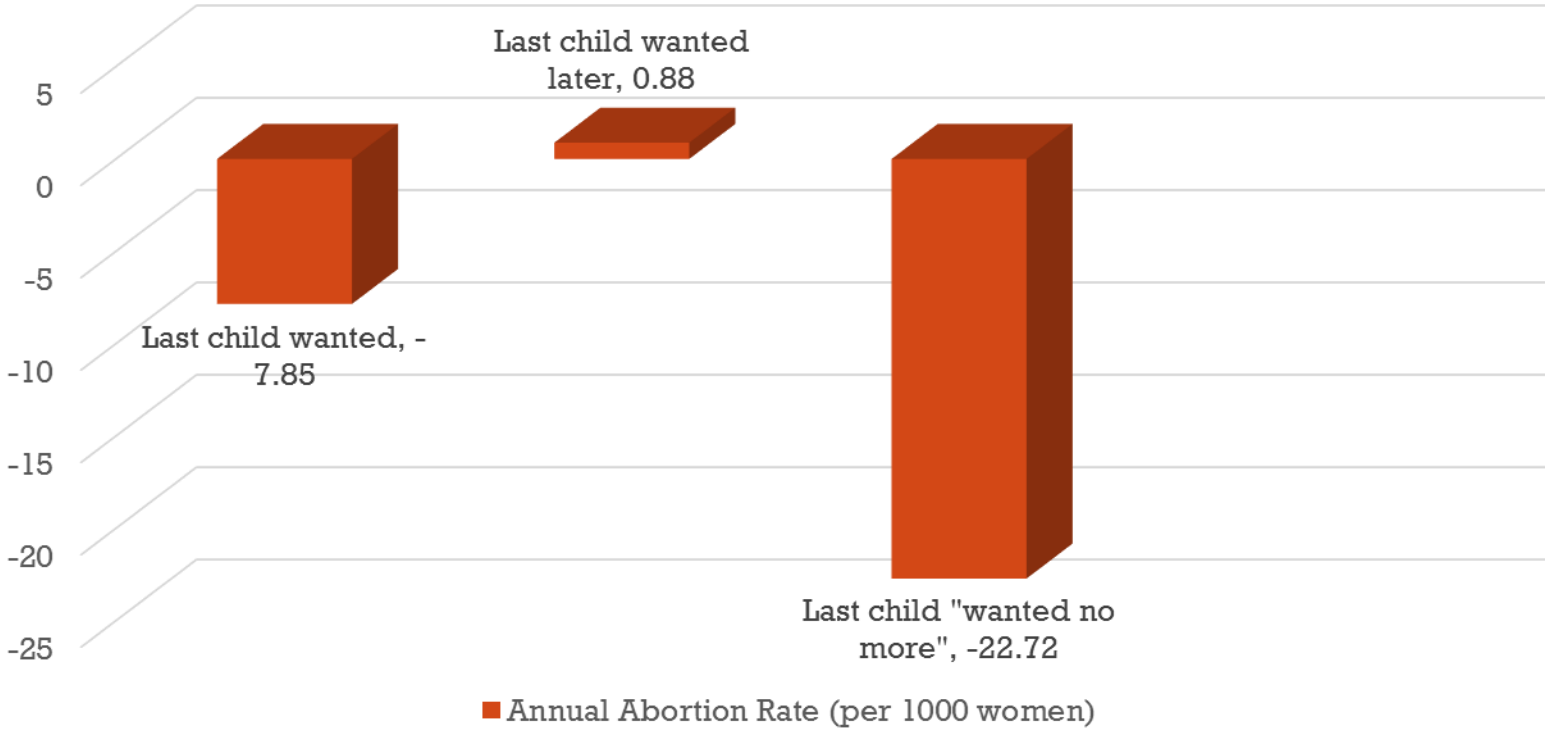
Estimated Annual Abortion Rate by Ethnicity



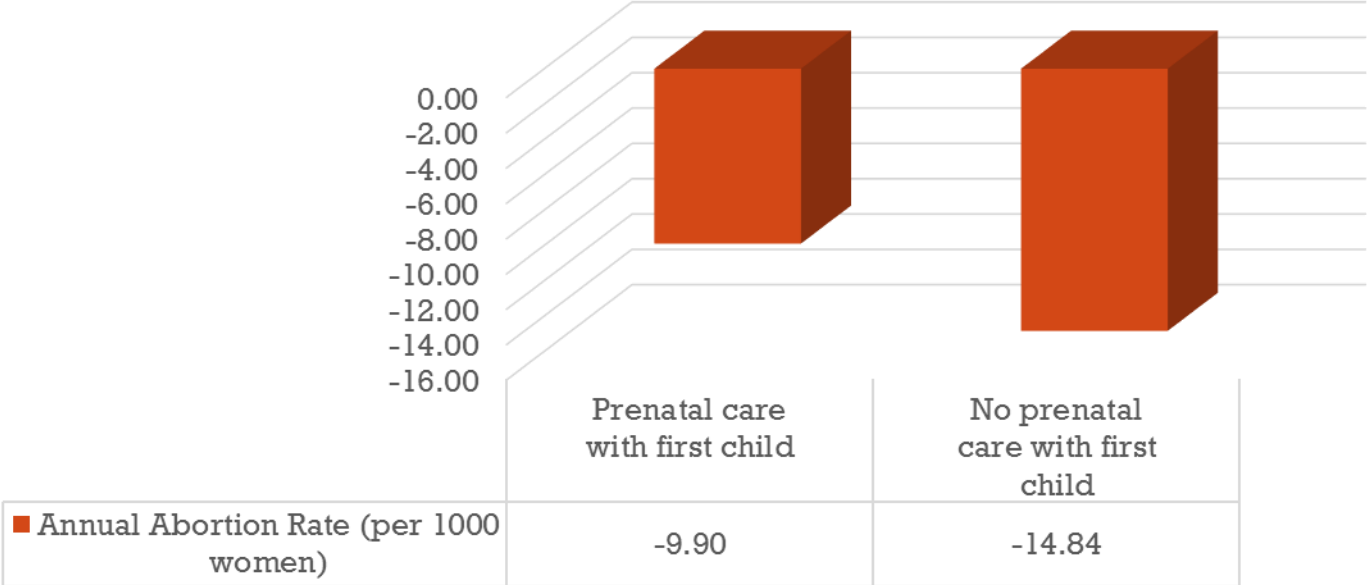
Estimated Annual Abortion Rate by Radio Ownership



Estimate Annual Abortion Rate by Wantedness of Last Child (Where the model Fails)



Estimated Annual Abortion Rate by Prenatal Care



For Comparison

NUMBERS AND RATES

Global and regional estimates of induced abortion, 1995, 2003 and 2008

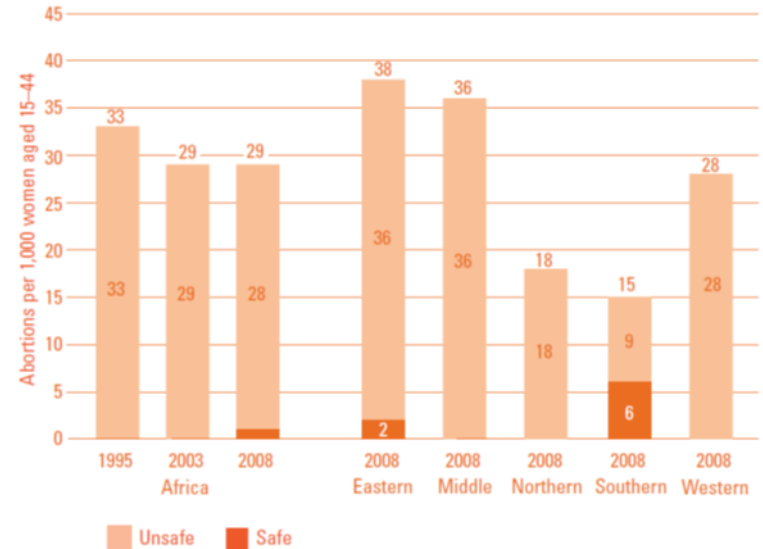
Region	No. of abortions (millions)			Abortion rate*		
	1995	2003	2008	1995	2003	2008
World	45.6	41.6	43.8	35	29	28
Developed countries	10.0	6.6	6.0	39	25	24
Excluding Eastern Europe	3.8	3.5	3.2	20	19	17
Developing countries	35.5	35.0	37.8	34	29	29
Excluding China	24.9	26.4	28.6	33	30	29
Africa	5.0	5.6	6.4	33	29	29
Asia	26.8	25.9	27.3	33	29	28
Europe	7.7	4.3	4.2	48	28	27
Latin America	4.2	4.1	4.4	37	31	32
Northern America	1.5	1.5	1.4	22	21	19
Oceania	0.1	0.1	0.1	21	18	17

*Abortions per 1,000 women aged 15–44.

Source: Sedgh G et al., induced abortion: incidence and trends worldwide from 1995 to 2008, *Lancet*, 2012, (forthcoming).

Abortion Rates in Africa

Estimated abortion rates in 2008 were highest in Eastern Africa.



Notes: Subregions are defined according to the United Nations classification system.

(Sedgh et al., 2012; WHO, 2011)

Conclusions

- The model showed higher rates of abortion for urban women, Muslim women
- Lower rates of abortion for Protestant women than Catholic women
- Higher rates of abortion for non-Gourma Togolese women
- Higher rates of abortion for women who owned a radio (socioeconomic status proxy)
- Inconclusive information about abortion rates for women by access to prenatal care and “wantedness” of last child
- The women in the Savanes region have low levels of education



Implications

- Useful to have rough estimates of abortion rates in countries such as Togo because actual rates do not exist
- If the same methods are used in serial DHS surveys it may be possible to assess abortion rates over time
- Improvements in data collection and access to safe abortion services should decrease the need for these types of estimation methods



Limitations

- The survey was conducted 16 years ago which makes the information not as immediately relevant
- There is no “gold standard” to evaluate estimates
- Could not look at parity, educational attainment, age, or contraception use, because these variables were in the model



How does this contribute to policy?

- The estimates can be used by advocacy groups to focus attention to the problem of illegal/unsafe abortion
- Health and government officials need these estimates to make informed decisions about policy changes and interventions
- Changes in these estimates over time can be used to evaluate policy modifications and interventions

(Ahman & Shah, 2007; Rossier, 2003; Singh, 2010; World Health Organization, 2012)



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