

Findings from the Amhara and Oromia Demographic Surveys: Fertility and Contraceptive Use in the Amhara and Oromia Regions*

Abstract

Studies of fertility in Ethiopia consistently find important ethnic and religious differences in fertility levels. These differences are due to any one or a combination of differences in socioeconomic background characteristics, access to contraceptive methods and family planning services, and cultural norms regarding desired family size and the acceptance of family planning. This report examines ethno-religious differences in fertility and contraceptive use in the Amhara and Oromia Regions of Ethiopia using data from two recent demographic surveys. Descriptive information on fertility and contraceptive use in the two regions was presented in an earlier Background Report (2001). Results from multivariate regression models presented in the current report show that significant ethno-religious differences in fertility behavior remain after controlling for socioeconomic and demographic background characteristics, and that these differences operate primarily through desired fertility.

Data and Analysis

This report uses data on women age 15-49 collected in two baseline demographic surveys in 2000, one conducted by Birhan Research and Development Consultancy in the Amhara Region, and a second conducted by the Oromia Office of Population in the Oromia Region. The results presented are for women from the Debub Wello, Oromia and Semen Shewa zones of the Amhara Region, and the Jimma, Mirab Shewa and Misrak Wellega zones of the Oromia Region. The pooled data from the two surveys provide information on 7,550 women. Close to 24 percent of the women in the pooled sample are Amhara Orthodox Christians, 27 percent are Amhara Muslims, 12 percent are Oromo Orthodox Christians, 19 percent are Oromo Muslims, and the remaining 18 percent are from other ethno-religious groups.

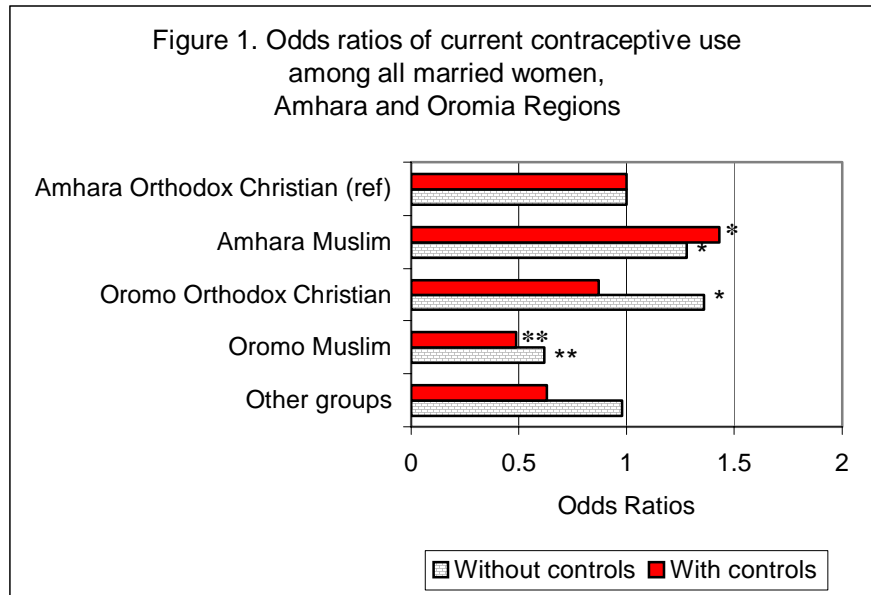
The report first examines current contraceptive use among married women, and then looks at recent births, the desire to stop childbearing, and contraceptive use among women with four or more children. The analyses use logistic regression models to estimate to the effects of ethno-religious background on the likelihood of the different outcomes net of other factors. The estimated effects of ethnicity and religion are presented as odds ratios in the text of the report. Estimated odds ratios for all the variables included in the models are presented in tables at the end of the report.

Current Use of Contraception Among Married Women

Contraceptive use in the Amhara and Oromia Regions is low, even by African standards, and especially low in rural areas. Approximately nine percent of the currently married women in the three zones in Oromia examined in this report use contraception, as do around 12 percent of married women in the three Amhara zones (*Back Ground Report, Issue 1, 2001*). Figure 1 presents odds ratios for contraceptive use by ethno-religious group estimated from the logistic regressions. We define five ethno-religious groups: Amhara Orthodox Christian, Amhara Muslim, Oromo Orthodox Christian, Oromo Muslim, and others. Amhara Orthodox Christians are treated as the reference group. The odds ratios indicate relative inter-group differences in the likelihood of contraceptive use, with Amhara Orthodox women serving as the comparison or reference group. For example, an odds ratio of one indicates that women from the selected group are equally as likely to use contraception as Amhara Orthodox Christian women (no difference); an odds ratio of two indicates they are twice as likely, and an odds ratio of 0.5 indicates they are half as likely. Figure 1 presents odds ratios estimated without controlling for other factors, and odds ratios estimated after controlling for zone of residence, type of community, age, parity, age at marriage, and education.

Main findings include:

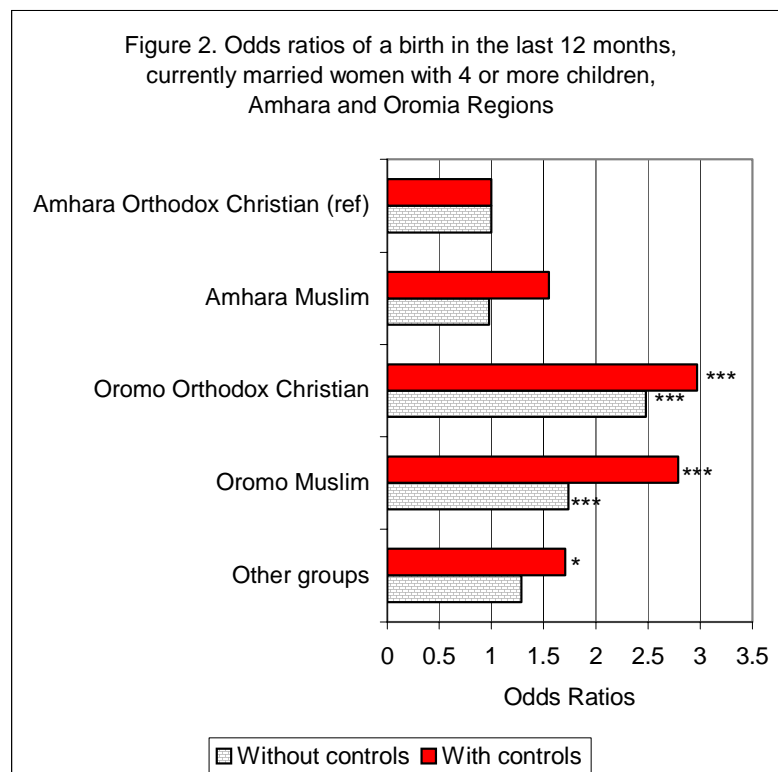
- Amhara Muslim and Oromo Orthodox Christian women are both roughly 1.3 times as likely to use contraception as Amhara Orthodox Christian women. On the other hand, Oromo Muslim women are roughly half as likely to use contraception.
- Ethno-religious differences in current use of contraception remain after controlling for background characteristics, with the important exception of Oromo Orthodox Christians. Once we take into account other factors that affect contraceptive use, Oromo Orthodox Christians are not significantly different from Amhara Orthodox Christians in their likelihood of using contraception.
- Place of residence (zone, rural/urban) is a significant determinant of current contraceptive use. Among the six zones covered by the two surveys, the likelihood of current contraceptive use is highest in Jimma, after controlling for other factors (see Table 1 in the appendix). The likelihood of contraceptive use is lowest in Misrak Wellega and Semen Shewa, and intermediate in Mirab Sewa, Debub Wello and Oromia. Women who live in rural areas are one-third as likely to use contraception as women in urban areas, even after controlling for individual background characteristics. The presence of significant zonal differences after controlling for ethno-religion and other individual characteristics suggests that the local development context is also an important factor in understanding geographic variation in contraceptive use.
- Both women's and husband's education are positively associated with contraceptive use. Married women with a primary education are roughly twice as likely to use contraception as married women with no schooling, and married women with a secondary education are three times as likely.



(ref) = Reference group
 * p<0.05; ** p<0.01; *** p<0.001

**Current Fertility
 Among High-Parity Women**

In countries with high fertility, contraceptive use is often concentrated at high parities and is used to stop childbearing, rather than to space births. The Ethiopian government recently set a target of a maximum of four children per woman. In the remainder of this report we focus on women who have four or more children, and thus are in the fertility limitation target group officially defined by the Ethiopian government. Figure 2 presents the odds ratios for a birth in the last 12 months by ethno-religious group (see Table 2 in the appendix).

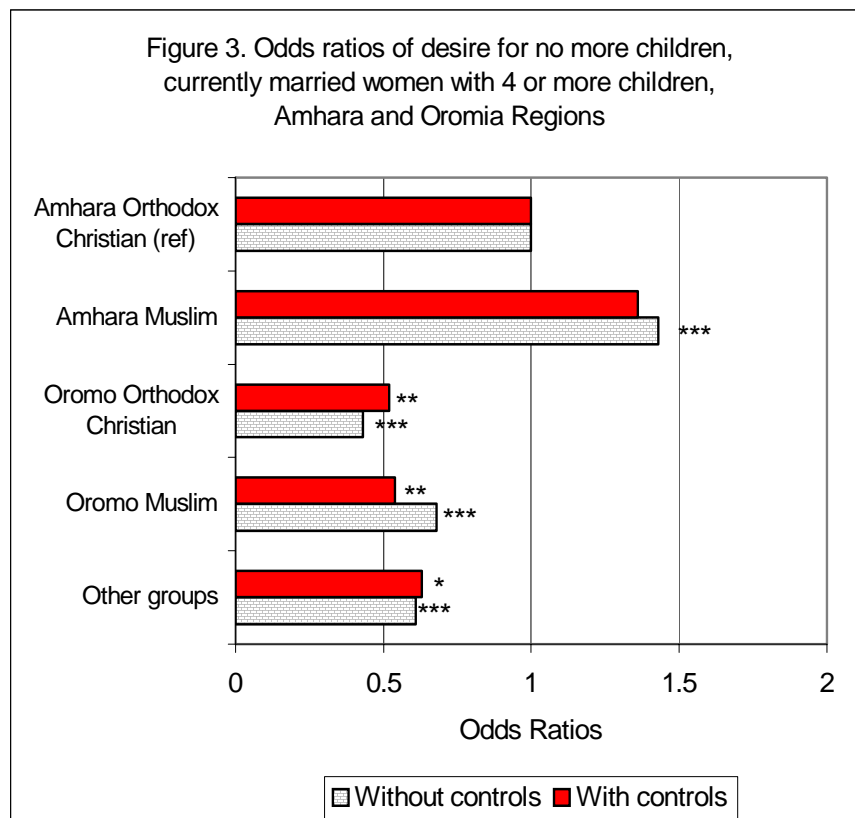


Main findings include:

- Oromo Orthodox Christians and Oromo Muslims are significantly more likely to have had a birth in the last 12 months than Amhara Orthodox Christians. These differences remain significant after controlling for other factors, and in fact the odds ratio for both groups increase and approach three. The odds ratio for Amhara Muslim women after controlling for other factors is close to 1.5, but is not statistically significant. The general pattern of results suggest that ethnicity is more important than religion in distinguishing recent fertility.
- With regard to zone of residence and place of residence, women living in Jimma and Mirab Shewa have the lowest chances of having a birth in the last twelve months, whereas the chances of a birth are not significantly different from one another in the other six zones. Women in rural areas are 1.4 times more likely to have had a birth in the last 12 months than women in urban areas, controlling for other factors (see Table 2 in the appendix).
- Among high parity women, education is not an important factor in explaining the likelihood of a recent birth. None of the coefficients for a woman’s or a husband’s education are significant (see Table 2 in the appendix). This result likely reflects the fact that many couples with higher levels of education stop childbearing at lower levels of parity than couples with little or no education, and thus there is less variation in education levels at high parities.

***Demand for Children
Among High-Parity Women***

One indicator of the demand for family planning services is the desire to stop childbearing among high parity women. Figure 3 presents the odds ratios of those women who want no more children by ethno-religious group.

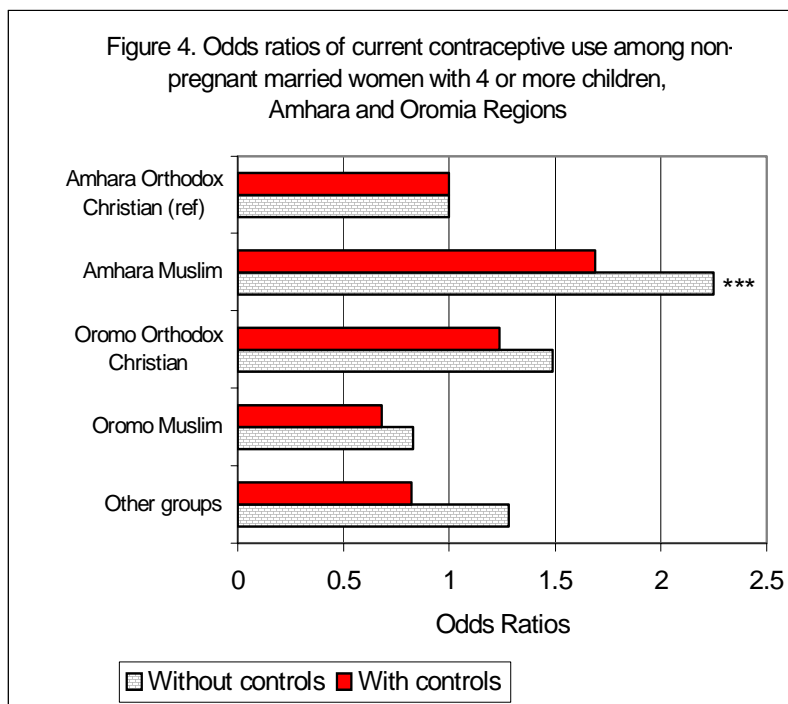


Main findings include:

- Oromo Orthodox Christian and Oromo Muslim married women with at least four children are roughly half as likely to want no more children as Amhara Orthodox Christian women. This weaker desire to stop childbearing suggests that the comparatively higher risk of a recent birth among women from the former two groups is not due to lower access to family planning services, but rather reflects differences in desired fertility. In contrast, Amhara Muslim women are more likely to want to stop childbearing after four births than Amhara Orthodox Christian women, although the difference is not significant once other factors are controlled. Once again the general pattern of ethno-religious differences suggests that ethnicity is more important than religion in distinguishing fertility behavior.
- Zone of residence is a very strong predictor of the desire to stop childbearing among married women with four or more children. Women living in Jimma, Mirab Shew, Dehub Wello, and Semen Shewa are more likely to want no more children than women in Misrak Wellega. The odds ratio is greatest in Jimma, where married women are over three times as likely to want no more children as women in Misrak Wellega (see Table 3 in the appendix).
- Consistent with other research findings, women with secondary education, or those married to men with a secondary education, are significantly more likely to want no additional children (see Table 3 in the appendix).

Current Contraceptive Use Among High-Parity Women

In this last section we examine the likelihood of current contraceptive use among high parity married women. Figure 4 presents the odds ratios of current contraceptive use by ethno-religious group. As in the other analyses, the odds ratios were estimated without other variables in the model, and then with control variables. In the case of current contraceptive use the desire for additional children (“wants more children”) was also included in the model.



Main findings include:

- Amhara Muslim married women with four or more children are more likely to be using contraception than Amhara Orthodox Christian women. This finding is consistent with Amhara Muslim women's greater desire to stop child bearing after four or more births.
- Once we control for other factors, including the desire for more children, ethno-religious differences in current contraceptive use are no longer significant among high parity women. When we control for various background characteristics, we find very little ethno-religious differences in current use of contraception among high parity women. Only women belonging to the Amhara Muslim ethno-religious group are significantly more likely to be currently using contraception when compared to Amhara Orthodox Christian women, but this difference is only marginally significant.
- Zone is an important determinant of current contraceptive use, even after taking into account ethno-religious group, desire for additional children, and other background characteristics. The likelihood of contraceptive use is greatest in Jimma and Mirab Shewa, and lowest in Misrak Wellega and Semen Shewa.
- As expected, rural women are significantly less likely to be using contraception than women who reside in urban areas.
- The results also show that high parity women who want more children are significantly less likely to be using contraception.
- Education has a very significant, positive relationship with contraceptive use. Women with a primary or secondary level education are roughly three times as likely to use contraception as women with no schooling.

Summary

Ethno-religious differences in fertility and contraceptive use in Ethiopia are significant. These differences reflect, in part, differences in socioeconomic status, place of residence, and access to family planning services. Nevertheless, the finding that ethno-religious differences in recent fertility and the desire to stop childbearing remain after controlling for other factors suggests that some of the differences in fertility levels and contraceptive use are due to cultural differences or unmeasured factors that are associated with ethnicity and religion. In the case of current contraceptive use, ethnic and religious differences were not significant once we controlled for the desire for additional children. Ethno-religious differences in contraceptive use patterns, therefore, are due in part to differences in desired fertility rather than differences in access to family planning services. Differential access to contraceptive services is, nevertheless, a factor in geographic variation in contraceptive use. Current contraceptive use varies significantly across zones, even after controlling for other variables. The persistence of ethno-religious differences in fertility after controlling for place of residence and other factors suggest that family planning messages and services will be more effective in raising contraceptive use levels if they are sensitive to cultural differences in desired fertility and attitudes about family planning.

Appendix

Table 1.
 Odds ratios of current contraceptive use
 among all married women,
 Amhara and Oromia Regions

Variable	Model 1	Model 2
<i>Ethnoreligious group</i>		
Amhara Orthodox Christian (ref)	1.00	1.00
Amhara Muslim	1.28*	1.43 [∧]
Oromo Orthodox Christian	1.36*	0.87
Oromo Muslim	0.62**	0.49**
Other ethno-religious groups	0.98	0.63 [∧]
<i>Zones</i>		
Misrak Wellega (ref)		1.00
Jimma		2.44***
Mirab Shewa		1.64*
Debbu Wello		1.46 [∧]
Oromia		1.72*
Semen Shewa		0.92
<i>Place of Residence</i>		
Urban (ref)		1.00
Rural		0.32***
<i>Age</i>		
15-24 (ref)		1.00
25-34		1.54**
35-49		0.96
<i>Parity</i>		
0 (ref)		1.00
1-2		1.84**
3-4		1.61*
5-6		2.10**
7+		2.51***
<i>Age at first marriage</i>		
<17 years (ref)		1.00
17+ years		1.26 [∧]
<i>Education</i>		
No schooling (ref)		1.00
Primary		2.12***
Secondary		2.94***
<i>Husband's Education</i>		
No schooling (ref)		1.00
Primary		1.52**
Secondary		2.51***
-2 Log Likelihood	3,221.56	2,703.49
Degrees of freedom	4	21
Number of Cases	5,373	5,373

[∧] p<.10; * p<.05; ** p<.01; *** p<.001

Table 2.
 Odds ratios of a birth in the last 12 months,
 currently married women with 4 or more children,
 Amhara and Oromia Regions

Variable	Model 1	Model 2
<i>Ethnoreligious group</i>		
Amhara Orthodox Christian (ref)	1.00	1.00
Amhara Muslim	0.98	1.55 [^]
Oromo Orthodox Christian	2.48***	2.97***
Oromo Muslim	1.74***	2.79***
Other ethno-religious groups	1.29 [^]	1.71*
<i>Zones</i>		
Misrak Wellega (ref)		1.00
Jimma		0.51**
Mirab Shewa		0.44***
Debub Wello		0.67
Oromia		0.70
Semen Shewa		1.15
<i>Place of Residence</i>		
Urban (ref)		1.00
Rural		1.38*
<i>Age</i>		
25-34 (ref)		1.00
35-49		0.56***
<i>Parity 12 months before survey</i>		
4 (ref)		1.00
5-6		0.40***
7+		0.32***
<i>Age at first marriage</i>		
<17 years (ref)		1.00
17+ years		0.97
<i>Education</i>		
No schooling (ref)		1.00
Primary		1.29
Secondary		0.99
<i>Husband's Education</i>		
No schooling (ref)		1.00
Primary		1.36 [^]
Secondary		1.01
-2 Log Likelihood	3037.16	2795.47
Degrees of freedom	4	18
Number of Cases	2,925	2,925

[^] p<.10; * p<.05; ** p<.01; *** p<.001

Table 3.
 Odds ratios of who wants no more children
 among married women with at least 4 children

Variable	Model 1	Model 2
<i>Ethnoreligious group</i>		
Amhara Orthodox Christian (ref)	1.00	1.00
Amhara Muslim	1.43***	1.36 [^]
Oromo Orthodox Christian	0.43***	0.52**
Oromo Muslim	0.68***	0.54**
Other ethno-religious groups	0.61***	0.63*
<i>Zones</i>		
Misrak Wellega (ref)		1.00
Jimma		3.32***
Mirab Shewa		1.60**
Debub Wello		1.94**
Oromia		1.21
Semen Shewa		1.63*
<i>Place of Residence</i>		
Urban (ref)		1.00
Rural		0.96
<i>Age</i>		
25-34 (ref)		1.00
35-49		0.84*
<i>Parity</i>		
4 (ref)		1.00
5-6		1.41**
7+		2.17***
<i>Age at first marriage</i>		
<17 years (ref)		1.00
17+ years		1.10
<i>Education</i>		
No schooling (ref)		1.00
Primary		1.25
Secondary		1.92**
<i>Husband's Education</i>		
No schooling (ref)		1.00
Primary		1.12
Secondary		1.39*
-2 Log Likelihood	3794.73	3675.52
Degrees of freedom	4	18
Number of Cases	2,881	2,881

[^] p<.10; * p<.05; ** p<.01; *** p<.001

Table 4.
 Odds ratios of current use of contraception
 among non-pregnant married women with at least 4 children

Variable	Model 1	Model 2
<i>Ethnoreligious group</i>		
Amhara Orthodox Christian (ref)	1.00	1.00
Amhara Muslim	2.25***	1.69 [∧]
Oromo Orthodox Christian	1.49 [∧]	1.24
Oromo Muslim	0.83	0.68
Other ethno-religious groups	1.28	0.82
<i>Zones</i>		
Misrak Wellega (ref)		1.00
Jimma		2.65**
Mirab Shewa		2.76**
Debub Wello		2.23 [∧]
Oromia		2.12 [∧]
Semen Shewa		1.03
<i>Place of Residence</i>		
Urban (ref)		1.00
Rural		0.33***
<i>Age</i>		
25-34 (ref)		1.00
35-49		0.71*
<i>Parity</i>		
4 (ref)		1.00
5-6		1.02
7+		1.09
<i>Desire for more children</i>		
Wants no more (ref)		1.00
Wants more		0.21***
Don't know		0.30***
<i>Age at first marriage</i>		
<17 years (ref)		1.00
17+ years		0.85
<i>Education</i>		
No schooling (ref)		1.00
Primary		2.69***
Secondary		3.29***
<i>Husband's Education</i>		
No schooling (ref)		1.00
Primary		1.45 [∧]
Secondary		2.50***
-2 Log Likelihood	1642.02	1350.67
Degrees of freedom	4	20
Number of Cases	2,901	2,901

[∧] p<.10; * p<.05; ** p<.01; *** p<.001

The *Partnership in Improving Reproductive Health Background Reports* present findings from work in progress on the dimensions and determinants of fertility and reproductive health in Ethiopia. This work is being conducted by faculty and advanced graduate students at the following institutions:

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