

LESSON SIX

FERTILITY

DIFFERENTIALS AND DETERMINANTS

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Learning Objectives

Fertility Differentials and Determinants

Indirect Determinants
(Underlying Factors)

Direct
Determinants

Social
Factorts

Economic
Factors

Proximate
Determinants

Determinants of Fertility:

Why does fertility differ from one individual/society to another? The answer lies in two categories of determinants:

- A) Underlying socioeconomic factors and fecundity
- B) Proximate (intermediate) determinants

Proximate Determinants:

Table 6.1 Rating of Intermediate Fertility Variables

Intermediate Fertility Variables	Sensitivity of fertility to intermediate variable	Variability among populations	Overall rating
		-	
Proportions married	+++	+++	+++
Contraceptive use	+++	+++	+++
Prevalence of induced abortion	++	+++	+++
Postpartum infecundability	++	+++	+++
Fecundability	++	++	++
Spontaneous intrauterine mortality	+	+	+
Permanent sterility	++	+	+
			+ = Low or
KEY	+++ = High	++ = Medium	Absent

Source: [1,2]

The table above is derived from the seminal work by John Bongarts [3] on direct determinants of fertility which he also named intermediate variables. These include:

Proportions married
 Level of contraceptive use
 Induced abortion
 Postpartum / Lactational/ amenorrhea
 Fecundability
 Spontaneous intrauterine mortality
 Sterility

“An intermediate fertility variable is defined as any behavioral or biological factor through which socioeconomic, cultural, or environmental variables affect fertility. A complete set of eight intermediate fertility variables is proposed, but it is shown that only four are important determinants of fertility differentials among populations:

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proportions married contraception, induced abortion, and lactational infecundability. A simple model that allows quantitative estimation of the fertility effects of each of these four variables is outlined, and its application is illustrated.”

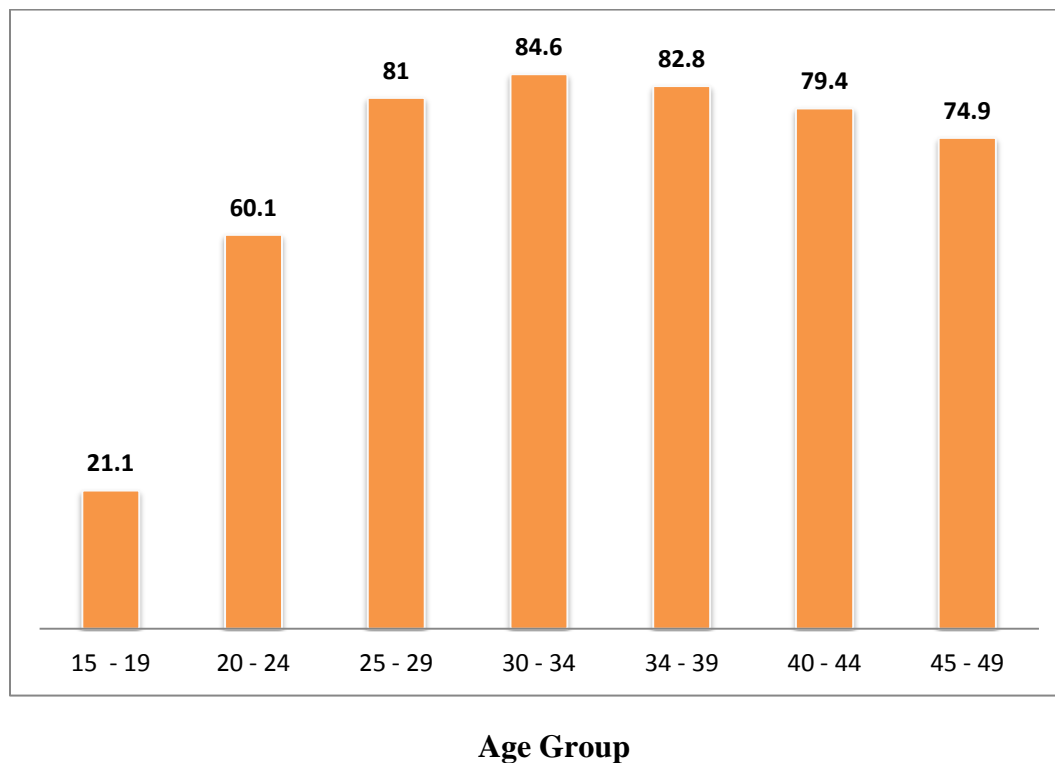
I. PROPORTIONS MARRIED

Definition [4]: “Percentage of women according to current status of marriage or cohabitation.”

“Numerator categories: Numbers of women who are 1) currently legally or formally married, 2) not married but living with a man in a consensual union, divorced from a legal or formal marriage, 3) separated from a marriage or consensual union, 4) widowed from a marriage or consensual union and not remarried or not in a consensual union, and 5) who never married nor lived in a consensual union.

Denominator: Number of women in sample”.

Fig. 6.1 Percentage Proportion of Married Women by Age Group (Ethiopia 2005)



Source: Based on [5]

In a traditional society such as Ethiopia the first sexually intercourse, and hence exposure to pregnancy, almost invariably happens coincidentally with marriage in rural areas. This is less

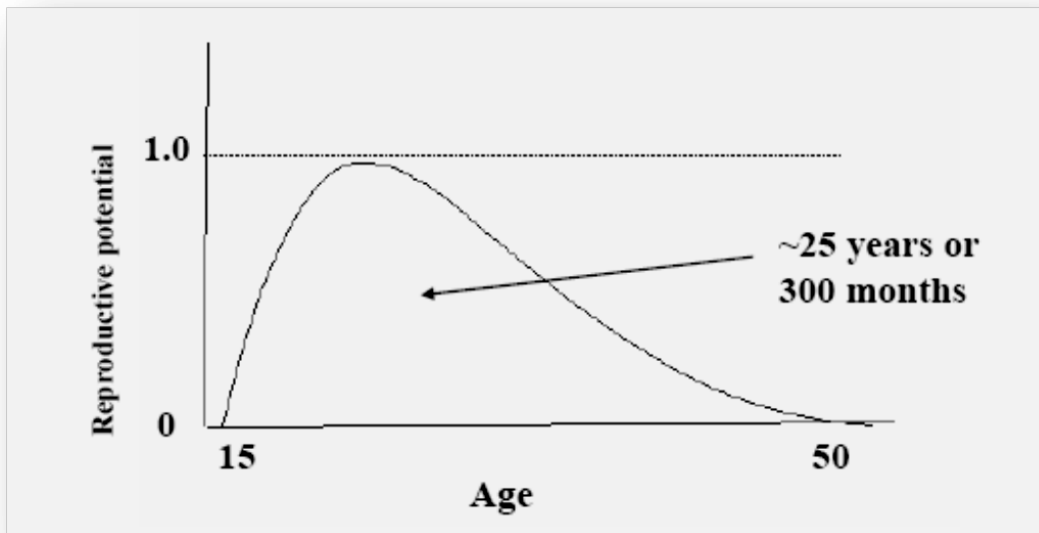
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true for urban areas where a sixth of the population lives. In Figure 6.1 close to two-thirds of Ethiopian women who would ever marry have already married by age 25. The proportion married peaks around age 32 after it declines due, to widowhood, divorce, and separation. Another possible explanation for this would be a recent increase in rate of marriage among young women. However, since this suggests that today's the daughters generation is marrying at higher rates than their mothers', it is an unlikely explanation.

Age at First Marriage

Women who marry early, at age 20 for example, have roughly twice as many years of reproductivity as those marrying at 35. In addition, their reproductive potential (see graph below) is twice that of women marrying age 35. In other words, even though women marrying at 35 expose themselves to pregnancy half as many years as those marrying at 20, the remaining years are not as productive as the 15 years between age 20 and 35 (Fig. 6.2) due to a reduced fecundity (biological potential to reproduce). This difference in biological potential to conceive (fecundity difference) leaves women marrying at 35 with less than half the number of births occurring to those marrying at 20. In Ethiopia, the median age at marriage among women aged 25 – 49 at the time of DHS 2005 was 16.1 years, and 79 percent were already married by age 20. [5].

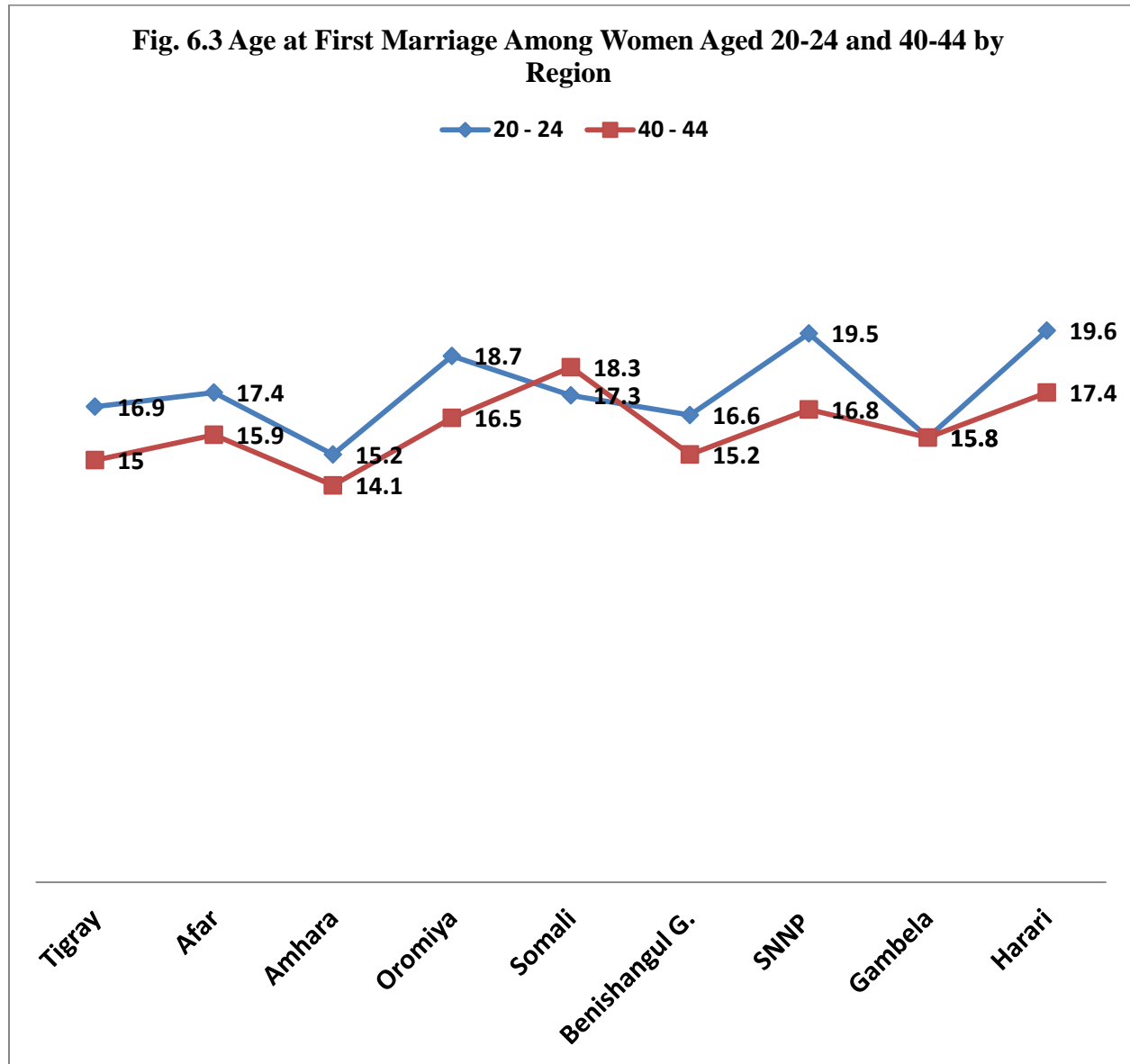
Figure 6.2 Potential Reproductive Life-Spans



Source: [1]

Figure 6.3 shows age at first marriage among women aged 20-24 and 40-44 at DHS 2005 by region. There is little variability between the regions but a slight hint of an earlier age at marriage in Tigray, Amhara, Benishangul and Gambela (among the 40–44 year olds) where the median marriage age is less than 16, is noticeable. Overall, there is a slight increase in age at marriage among the “daughter generation” (age 20-24) compared to the “mother generation” (age 40–44).

This assumes that reporting errors are minimal and data issues arising from the long duration since marriage, especially among the older women (40–44 and 45–49), and the resulting memory lapse regarding the exact age of marriage, are insignificant.



Source: Based on [5]

II. CONTRACEPTIVE USE

Knowledge:

Knowledge of contraceptive methods is widespread in Ethiopia. “For example, knowledge of any modern method among currently married women was 85 percent in 2000 and 87 percent in 2005”. However, actual use rates are very low. Moreover, among couples in which only one partner knows of a method, husbands are more likely to know the method than their wives”. [5]

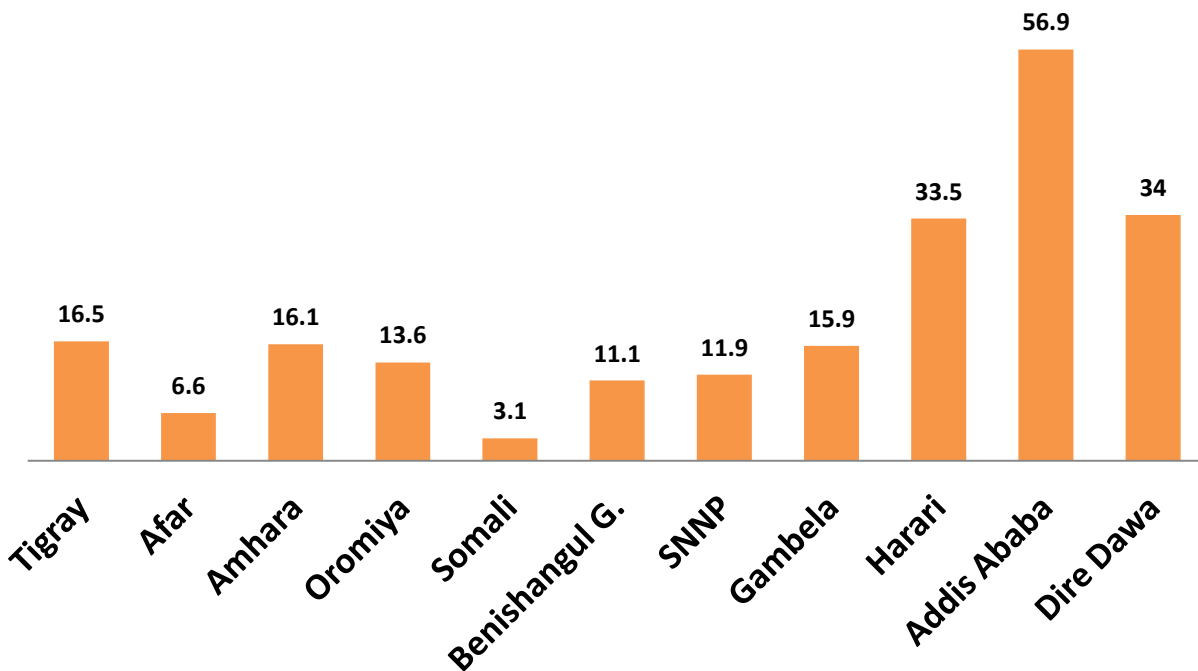
Ever use

The data indicate that 18 percent of all women and 24 percent of currently married women have used a method at some time. Women are much more likely to have used a modern method than a traditional method. For example, 23 percent of currently married women have used a modern method at some time compared with 2 percent who have used a traditional method. Injectables have been the most commonly used modern method (18 percent) among currently married women. Rhythm has been the most widely employed traditional method. Among currently married women ever use of any method rises from 16 percent among those age 15-19, peaks at 27 percent among those age 25-29, and remains consistently high until age 40-44, before falling markedly to 14 percent among the oldest age group. [5]

Current use

Fifteen percent of married Ethiopian women were using contraceptive at DHS 2005. Almost all used modern methods. “The most widely used method is injectables (10 percent) followed by the pill (3 percent)” [5]

Fig. 6.4 Percentage of Married Women Currently Using Contraceptives (any method), by Region



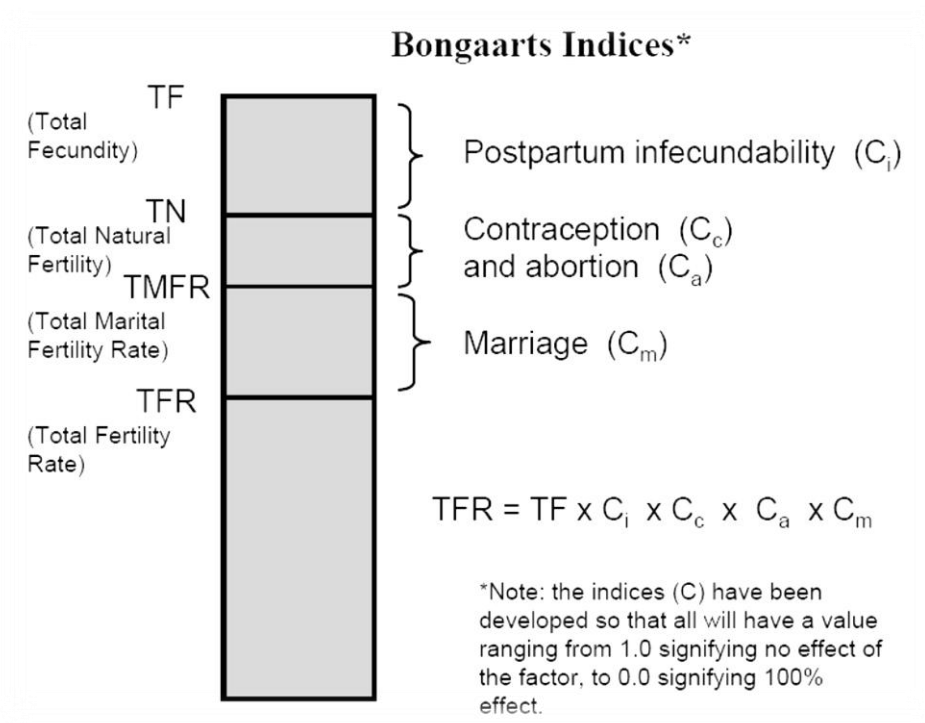
Source: Based on [5]

A clear pattern of higher prevalence in the predominantly urban areas than in rural regions is evident with the highest prevalence rate of 57% in the capital. The eastern city administrations of Harari and Dire Dawa have similar percentages with about a third of women practicing. As is clearly apparent in Figure 6.5 very low current use rates prevail among Somali and Afar women (3.1% and 6.6% respectively) due in part to the nomadic existence. On the plus side, most regions have crept up into double digit percentages from low coverage of 4% to 5% in the 1990s and the decades before.

III. INDUCED ABORTION

According to the Family Guidance Association of Ethiopia "... unsafe/illegal abortions accounted [for] 54% of all direct obstetric deaths. Studies have shown that unsafe illegal abortion is rampant among single women, teenagers, students, and factory workers.”[6] Data is not available at a national level to calculate the national fertility impacts of induced abortion (denoted by the symbol “Ca” in the formula below) in Ethiopia. Such a calculation is done by isolating the contribution of “Ca” in the formula below:

Fig. 6.5 Bongaart’s Model of Intermediate Fertility Determinants



Source: [1].

IV. POSTPARTUM / Lactational/ AMENORRHEA

A little over 9 percent of Ethiopian women know that the period of intense breastfeeding after giving birth is also a period of temporary infecundity. However, only a small percentage are actively using this as a birth control technique. The percentages are less than 0.1 for the 15 to 24 age group and as low as 0.6 for the 25- 44 age group, and 0.1 for the 45 to 49 age group [5]. The 2005 DHS survey does not provide (Ci) values for the above formula.

Socioeconomic Determinants

Social Determinants

Perhaps the most important social determinant of a woman's fertility behavior is the amount of control she is able to exercise over her own body, on whether or not to have a child, how many children, and when to have them. More importantly, her ability to make decisions on whether or not to engage in sex, the kind of sex (protected vs. unprotected), and the timing of sex vis-à-vis the natural monthly fertility cycle are crucial factors. Here we are talking about a woman's rights and level of empowerment. This also has significant implications for women's health including reproductive health and for prevention of sexually transmitted diseases. The 2005 DHS survey provides a glimpse into the status of women and their position in marriage. Indirect measures such as control over earnings, participation in decision making, attitudes towards refusing sex with husband, attitude towards wife beating, and female genital mutilation (FGM) have been studied [5]. The picture is not pretty.

Control over Household Earnings

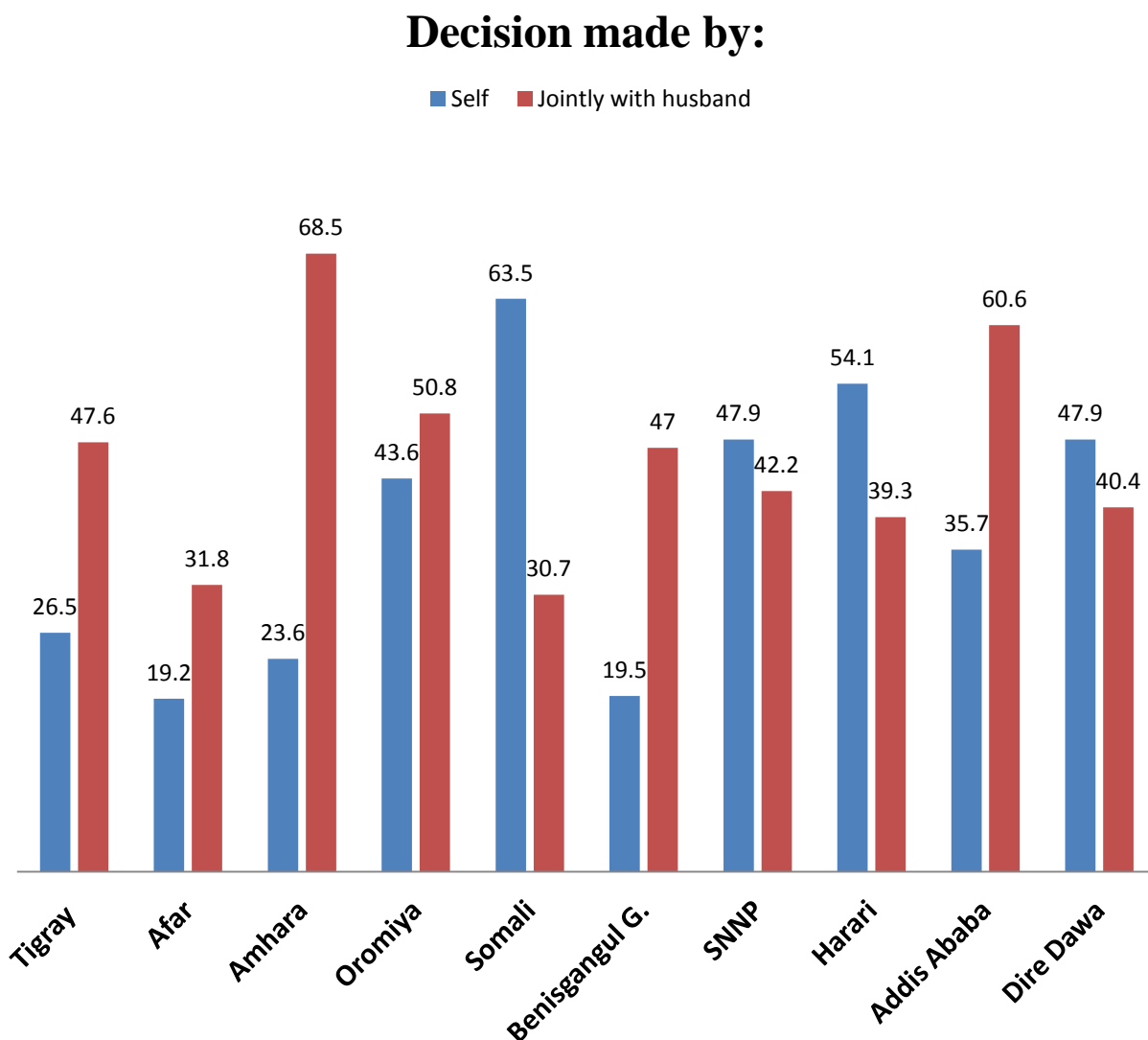
Nearly a third of currently married women reported themselves as "employed" and 27 % reported earned cash income. However, three in five employed women did not receive any payment for their work. The percentage of currently married women who had paid employment increased with age up to age 44 and then declined slightly toward older ages [5].

Younger women age 15-19 and older women age 45-49 are somewhat more likely to make independent decisions on their earnings than women in the middle age groups. Women with five or more children are more likely to decide on their own how to use their earnings than women with fewer children or no children at all. Sixty percent of currently married women with one or two children make joint decisions with their husbands or partners. [5]

Participation in decision making

There is significant regional variation in female decision-making powers. Women respondents were asked “who made the household decision regarding expenditure of earned income?”. The regional picture is as follows:

Fig. 6.6. Decision Making Among Cash-earning Currently Married Employed Women by Region.



In Fig. 6.6 Somali women represented the highest percentage of women who were reportedly able to exercise full financial control over monetary earnings. If this alone was a measure of empowerment as well as ability to exercise all decisions freely, including fertility decisions, they would have the lowest fertility. In reality, however, with a TFR of 6.0, they have the second highest fertility in Ethiopia (after women in Oromiya).

Attitude towards refusing sex with a husband

The 2005 DHS survey attempted to gauge Ethiopian women's attitude and belief regarding consent in sexual matters, and whether or not a woman should be able to say "no" to sex, and the circumstances under which she should do so. They were whether or not it was ok to say no to sex under the following conditions [5]:

- a) The woman knows that her husband has a sexually transmitted disease
- b) She knows that her husband is having sex with other women
- c) She is tired or not in the mood.

"Women in the middle age groups, those with no education, unemployed women, women who have married, those who have five children or more, and poorer women are the least likely to agree with all of the reasons for refusing sex.....Overall, the majority of women agree with each specified reason for refusing to have sex. Slightly more than three-fifths (62 percent) of women and 72 percent of men agree that all of the above reasons are justification for a woman to refuse to have sexual relations with her husband' [5].

There is significant regional variation, however, with Somali and Afar women (where nomadic herding is predominant and women perform all household chores including the building, dismantling, and rebuilding of moveable huts), had the highest level of disagreement with all three conditions (above). They believed that a woman should continue to have sex with her husband regardless. A quarter of women in SNNP, forty percent of Somali and Afar women, two thirds of women in Benishangul Gumuz, and almost half of women in Gambella say women should not refuse to engage in sex with their husbands when confronted with all or one of the three reasons. There is a clear urban-rural divide, with less than 10 percent and 21 per cent respectively, of urban and rural women agreeing that a husband should have his way, and that a woman should engage in sex under all three conditions. Expectedly, the highest percentage of women who said no (94.3%) lived in Addis Ababa, the capital. [5]

If the 'attitude towards having sex' variable was a better surrogate for a woman's fertility decision-making ability than financial decision making ability, the regions with low percentages of women saying "no" to sex under the three conditions – SNNP, Afar, Somali, Benishangul-Gumuz, and Gambella, - would all have high fertility with TFRs above the national average. But, that is not necessarily the case.

Attitude towards wife-beating

The most fundamental human right of an individual is a right to personal safety. In Ethiopia, cultural dictates and the usurping of religious edicts in favor of men have resulted in traditions whereby women are socialized to be/feel inferior to men to the point of accepting beatings as one of the powers husbands should exercise over them. The 2005 DHS survey sought to uncover women's (and men's) attitude towards wife beating by asking whether or not a husband is justified in beating his wife if she [5]:

- a) Burns the food
- b) Argues with him
- c) Goes out without telling him
- d) Neglects the children
- e) Refuses to have sexual relations with him

The survey design stipulated that “women who believe that a husband is justified in hitting or beating his wife for any of the five specified reasons may believe themselves to be low in status both absolutely and relative to men. Such a perception could act as a barrier to accessing health care for themselves and their children, affect their attitude towards contraceptive use, and impact their general well being.” and fertility [5]. The results are not surprising to an Ethiopian reader.

“A sizeable majority of women (81 percent) believe that a husband is justified in beating his wife for at least one of the specified reasons. This is not unexpected because many traditional customs in Ethiopia as in many other countries teach and expect women to accept, tolerate and even rationalize wife beating. This impedes women's empowerment and has serious health consequences.”⁵

Most demographic observations show a clear urban-rural divide but attitudes towards wife beating are not among the sharpest differences with 59 percent of urban and 86 percent of rural residents deeming it acceptable on grounds of at least one of the stated reasons. There is a sharp difference, however, when individual reasons are considered separately [5]:

Female respondents:

Okay for a husband to beat wife if she:	Urban (%)	Rural (%)
Burns food	30.8	67.5
Argues with him	34.6	63.9
Goes out without telling him	41.5	69.1
Neglects the children	44.2	69.0
Refuses to have sex with him	19.9	49.6

There are significant regional variations too but not as sharp as the urban rural difference. Based on responses to the surrogate variables above it can be inferred the majority of Ethiopian women

do not feel empowered (as individuals or as bearers of children) to make decisions that are in their best interest. As a result, they will continue to face many more pregnancies in their life times than they would if they had the negotiating power or decision making abilities in the hours and minutes prior to a sexual encounter.

Education

Ethiopian women with no education have three times as many children as women with at least a secondary education. Since maternal education is also strongly correlated with child survival, many of the additional births among uneducated women would go under what is referred to in demography as replacement fertility.

The DHS data shed some light on the status of women in Ethiopia. While the majority of Ethiopians have little or no education, women are generally less educated than men. However, the male-female gap in education is more obvious at higher than at lower levels of education, indicating the government's recognition and successful intervention to address gender disparity in more recent years.[5]

A significant proportion of Ethiopian mothers are teenagers. However, given that the impact of education is most profound in the teen years where even an elementary education can reduce teenage births three-fold and secondary education by a factor of ten they miss out on the protective powers of education throughout their reproductive years. It has been shown that attaining a secondary education delays the start of childbearing by at least four years and increases the interval between births significantly [5]. Moreover, educated Ethiopian women conclude their reproductive activity early [5].

FERTILITY DIFFERENTIALS

Urban-Rural Differential

Childbearing starts early in Ethiopian, and the typical woman "... will have had more than half of her lifetime births by age 30, and nearly three-fourths by age 35" [5]. Urban-rural fertility difference is most pronounced in the early years of reproductivity. The age specific fertility rate (ASFR) of urban teens aged 15–19 is only 29 percent of the ASFR for rural teens (Table 6.2). Urban women in the 20–24 age group gave birth to less than half as many children as a similar-sized group of rural women in the twelve months prior to the 2005 DHS. Those in the 25–29 group gave birth to a little more than half as many babies as rural women. The difference widens further in the 35 to 45 age group where the ASFR for urban women is only a third of that for rural women (See the Fig. 6.8 also).

Table 6.2. Urban Age Specific Fertility as a Proportion of Rural Fertility, 2005

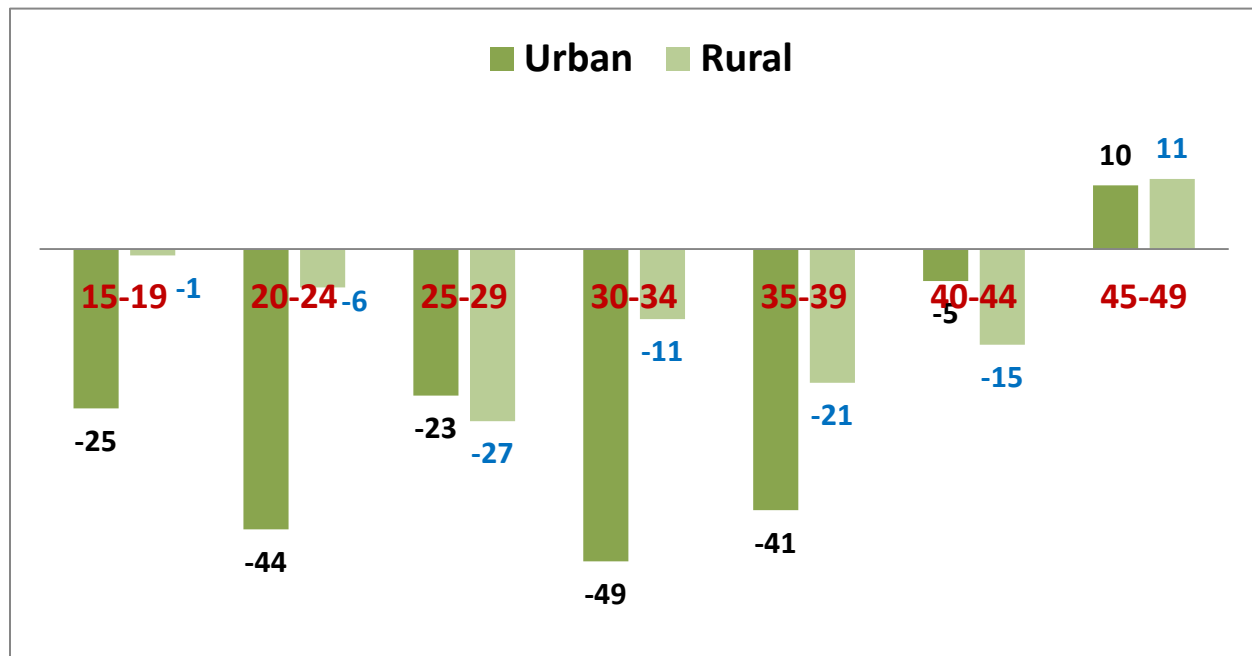
Age Group	ASFR Urban ÷ ASFR Rural
15 - 19	0.29
20 - 24	0.40
25 - 29	0.51
30 - 34	0.40
35 - 39	0.33
40 - 44	0.30
45 - 49	0.37

Source [5]

Differentials in Urban-Rural Fertility Trends

Fertility is on a decline in both urban and rural Ethiopia in all age groups of women (except the very “old”) but at different rates. The highest decline has been among urban women aged 30-34 where a group of 1000 women in that age group gave birth to forty nine fewer children between them in the 12 months preceding the 2005 DHS than in the 12 months preceding the 2000 DHS. The second and third highest declines were among urban women in the 20-24 and 35-39 age groups where 44 and 41 fewer children were born in the latter DHS than in the previous DHS respectively.

Figure 6.7. Age-Specific Fertility Change (Per 1000), Urban - Rural, from year 2000 to 2005 by Age Group of Women.

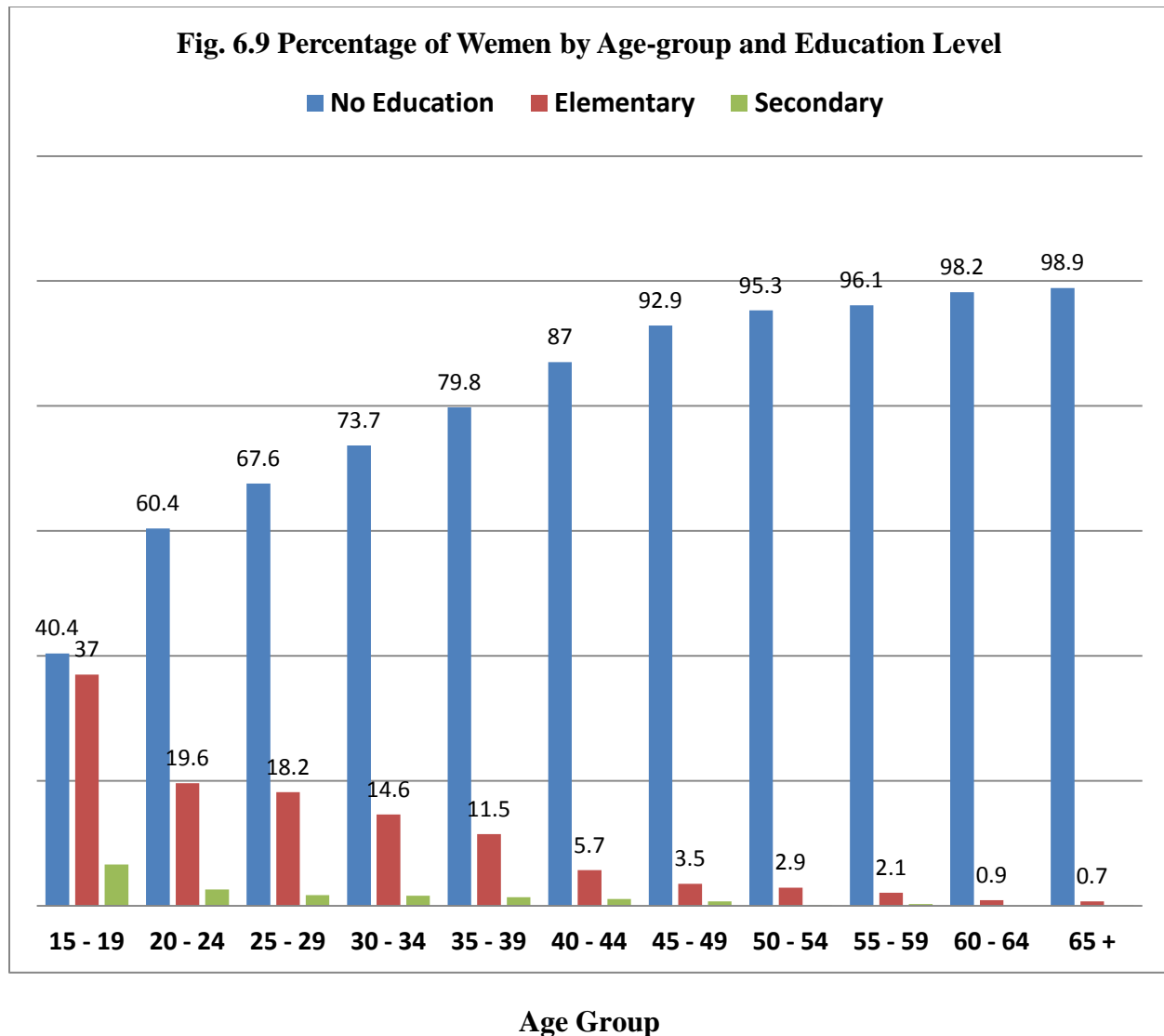


Source [5, 7]

Substantial fertility declines have also been noted among rural women. This is significant because change is often hard to come-by in rural Ethiopia; and when change finally comes it often proceeds at glacial speeds. In just a span of five years rural women in the 25-29 age group reduced fertility by 27 children per thousand and those in the 35-39 group by 21 per thousand. A higher fertility in the 2005 DHS than the 2000 DHS was observed only among women in the 45-49 age group.

Educational Differential

Figure 6.9 appears to show a history of neglect on the part of governments, of the education female children and adults. Though poverty is mainly to blame, government (whether past or present) inaction is likely to be a contributing factor to the 60% or so of women in the 25-29 age group who remained illiterate, and the continued rise in the proportion illiterate to over 90 percent above age 45.

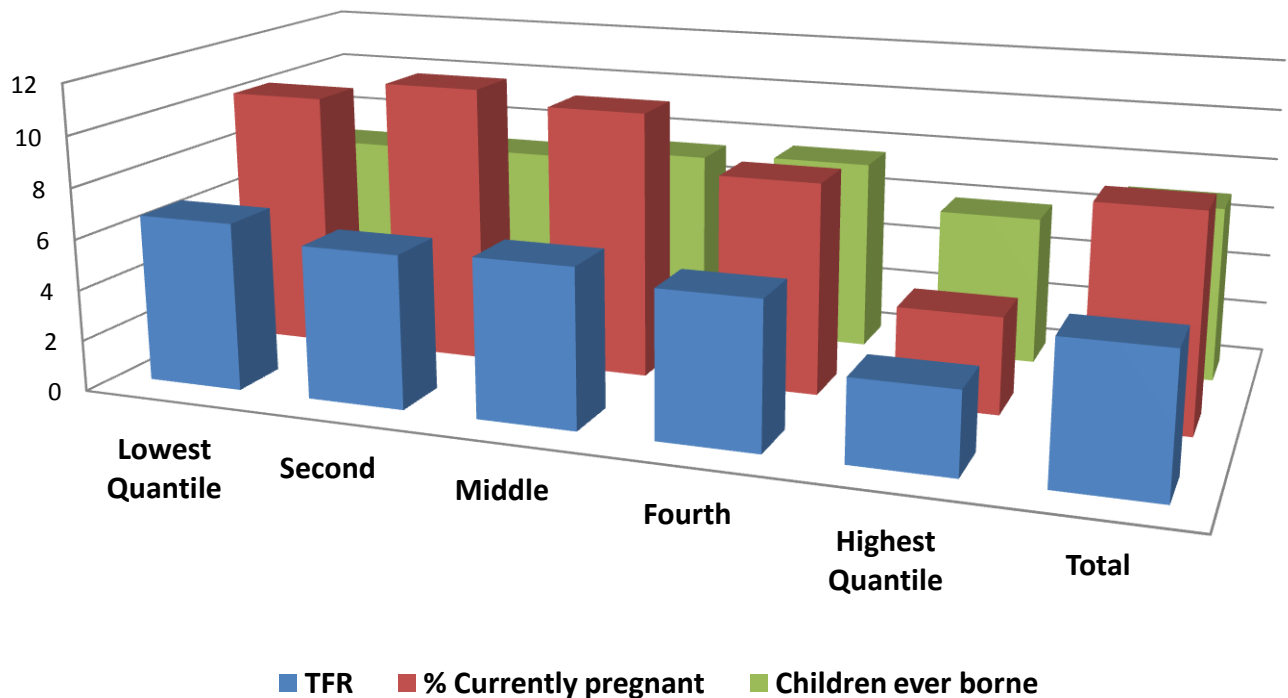


Source: [5]

The fertility implications are obvious from the 3:1 ratio in the number of children born to uneducated women compared and to those born to women with secondary education. It is also evident in the falling fertility rates in Ethiopia both in urban and rural areas.

Income Differentials

The 2005 DHS showed that Ethiopian women in the lowest wealth quintile have twice as many children as those in the highest wealth quintile. The fact that "...84 percent of women in the lowest quintile have no education compared with 38 percent in the highest quintile" appears to show that wealth and education go hand-in-hand, and together make the biggest fertility impact.

Fig. 6.10 Fertility by Wealth Quantile, 2005

Source: [5]

The difference in fertility by wealth quartiles is not impressive or significant except when those in the highest quartile are compared with those in all of the lower quartiles.

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