Ethnicity, Religion and Premarital Fertility
in sub-Saharan Africa

Michel Garenne (1)

Julien Zwang (2)

(1) Institut de Recherche pour le Développement (IRD), and Institut Pasteur, Unité

d'Epidémiologie des Maladies Emergentes, Paris

(2) Institut des Cordeliers, Université Paris VI,

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Address for correspondence: mgarenne@pasteur.fr

Abstract

The study reviews the relationships of ethnicity and religion with premarital fertility, defined as the probability of having a birth before the first marriage. Data were drawn from DHS surveys in sub-Saharan Africa. Among the 309 selected ethnic groups, premarital fertility varied from less than 1% to more than 70%. Premarital fertility was primarily determined by age at marriage and permissiveness of the society, both factors which are highly ethnic specific and influenced by religion, as wells as by economic development. An analysis of variance of premarital fertility by ethnicity shows that about half of the variance can be attributed to socio-economic factors (urbanisation, wealth, education) and the other half to cultural factors (ethnicity, religion, polygyny). In some countries the impact of socio-economic factors was dominant, although not consistent across the countries investigated, while in other countries cultural determinants were more important.

Key words: Premarital Fertility; Ethnicity; Religion; Culture; Marriage; Fertility; sub-Saharan Africa.

Introduction

In demographic studies, differential analyses usually focus on socio-economic characteristics of the populations (education, income, wealth, occupation, etc.) whatever the specific topic under study (mortality, fertility, nuptiality, migration, etc.). This is easily understood since population differentials are primarily the by-product of the many social changes induced by- or associated with- economic development. Therefore, they are likely to be correlated with any socio-economic variable. There are a number of exceptions to this rule: for instance, this is the case in the field of public health, where innovation, technology and policies may induce major changes independently from socio-economic structures. This is particularly true when national health policies aim at reaching the whole population, as in socialist countries. Another type of exception is the case of processes that are largely controlled by cultural variables such as ethnicity and religion.

Several studies have shown that religion and ethnicity may determine fertility levels and trends, even though ultimately all ethnic groups and all religious affiliations tend to undergo the fertility transition from high to low levels. This was shown in European populations [Andorka, 1982; Anderson, 1986; Bouvier and Rao, 1975; Kertzer, 2006; Newman & Graeme, 2006; Post, 1999], as well as in Asian populations [Jones and Karim, 2005; Thapa, 1989]. In Africa, where the demographic transition is less advanced, differentials in fertility levels and trends by religious affiliation, and occasionally by ethnicity have also been found [Johnson-Hanks, 2003; Oheneba-Sakyi & Heaton, 1993]. The magnitude of the differences in fertility levels and trends by religion or ethnicity remains usually small, and differences tend to be transient since most groups aim ultimately at fertility levels close to replacement fertility.

Other processes may be more sensitive to cultural factors, and in particular marriage and sexual behaviour. The ethnographic literature is abundant in examples of variations in marriage patterns and sexual permissiveness by ethnicity, and religion is also a major determinant of such behaviours. [Murdock, 1967]

In this paper, we consider the case of premarital fertility, defined as giving birth before the first marriage. Premarital fertility depends on age at marriage (the higher the age, the higher the risk of a premarital birth), on permissiveness of the society (if premarital sex is strongly prohibited, premarital births are unlikely to occur), and on contraceptive use (if women use efficient contraception, no birth will occur even if they have regular premarital intercourse). The first two factors of premarital fertility are highly cultural, but are also linked

to development: age at marriage and permissiveness tend to change with development, in particular with education and urbanization, although not in a straightforward manner.

In this paper, we present an investigation of differentials in premarital fertility in sub-Saharan Africa. We have already presented a number of papers on the same topic, and in particular a detailed report at country level of the differentials in premarital fertility by ethnicity and their relationships with age at marriage. [Garenne & Zwang, 2004; 2006a; 2006b; Zwang 2004; Zwang & Garenne, 2008] Other authors have also studied premarital fertility in Africa, although with little emphasis on religion or ethnicity. [Gage-Brendon & Meekers, 1993; Parr, 1995; Shell-Duncan & Wimmer, 1999] Africa is a case in point, since until recently contraception remained rare before the first marriage. Indeed, in our earlier work we found a positive correlation between contraceptive use and premarital fertility, obviously due to reverse causality (women who experienced an unwanted premarital birth were more likely to later use contraception). We also showed the role of religion on age at marriage [Garenne, 2004], and the correlation between premarital fertility and HIV/AIDS [Garenne & Zwang, 2008]. More ethnographic details on premarital fertility in South Africa were presented elsewhere [Zwang, 2005; Zwang & Garenne, 2008]. In this paper, we have updated some of the earlier findings with new data, and we present a new synthesis, in particular an analysis of variance of premarital fertility by ethnicity at country level.

Data and Methods

Premarital fertility can be easily defined when surveys report the age at first marriage and the age at first birth. This is the case in most WFS (World Fertility Surveys) and DHS (Demographic and Health Surveys), and even in some of the recent AIS (Aids Indicator Survey). In this analysis, the prevalence of premarital fertility is defined as the proportion of women aged 15-49 either ever married or ever fertile who experienced a premarital birth, i.e. who had a live birth before their first marriage or who already had a live birth while never married at time of survey.

The details of the analysis of ethnicity in African demographic surveys were presented in our DHS comparative study [Garenne & Zwang, 2006b]. In brief, when ethnicity was available in a survey, we selected ethnic groups with at least 250 women, and did not attempt to group them by category except in a few specific cases. When several surveys with similar details on ethnicity were available in the same country, we grouped them together to increase

sample size. Two countries were added to the list used in our 2006 study: the Republic of Congo (Congo-Brazza), which had detailed ethnic groups, and the Democratic Republic of Congo (Congo-Kinshasa, formerly Zaire), which presented only large categories of ethnicity, grouped by regions. For the map, Lesotho, Swaziland and Botswana were considered as single entities, but were not used for the analysis by ethnic groups, even though they are largely homogeneous with respect to ethnicity (no breakdown was available in DHS surveys).

Religion was grouped in three categories; Christians, Muslims, and Others & unknown, which include traditional African religions (Animists), persons who claim no religion, and the no answers.

Several socio-economic correlates of premarital fertility were considered, and calculated for each ethnic group selected: level of education, counted as the mean number of years schooling; urbanisation, counted as the proportion of women 15-49 living in urban areas; and level of wealth, counted as the mean number of modern household goods and amenities owned by the household. This Absolute Wealth Index has been presented elsewhere, and is also discussed in another paper presented at this conference in Session 155 [Garenne & Hohmann, 2003; Hohmann & Garenne, 2009].

Results

Prevalence of premarital fertility

In our new investigation, some 28 countries and 309 ethnic groups were considered (Table 1). The range of variations of premarital fertility across the various ethnic groups was simply remarkable: from 0.1 percent (Kanem-Bornou in Chad) to 76.2 percent (Herero in Namibia). The range of variations (Figure 1) displays a wide variety of situations, without any regular pattern: situations of very low premarital fertility (< 9%), accounting for 81 ethnic groups; low premarital fertility (9-14%), with 58 ethnic groups; medium level of premarital fertility (15-29%), with 78 ethnic groups, high level (30-49%) with 48 ethnic groups; and situations of very high premarital fertility, where more than half of the women had a birth before first marriage (21 groups). The average level per ethnic group was 20.6%, with a large standard deviation of 16.6%; the average level for Africa, weighted by the population in each country, was 18%.

<u>Regional patterns</u>

Pockets of high levels of premarital fertility were found in several areas of sub-Saharan Africa, presented here as the regions defined by demographic surveys (Figure 2). The largest pocket was found in Southern Africa, and included South Africa, Namibia, Botswana and Swaziland, and some areas of Western Zimbabwe and Southern Zambia. Another pocket was found in West-Central Africa, and included Gabon, Congo-Brazza, Southern Cameroon, and some areas of Western Congo-Kinshasa. A third pocket was found on the coast of West Africa, and included Liberia and some areas in Southern Cote d'Ivoire. A fourth pocket was found in East-Africa, in some areas of Tanzania, Kenya, and Southern Uganda. Lastly, the North-eastern part of Madagascar also had high levels of premarital fertility.

In each of these countries, there were areas of lower and higher levels of premarital fertility by ethnicity, which could not be presented on a continental map because of the high degree of ethnic fragmentation. Local differences by ethnic groups are best shown in the correlation between premarital fertility and age at marriage (Figure 3).

Some of the regional patterns are obviously linked with economic development. The countries located in Southern Africa have much higher income, and are primarily countries with a strong mining industry. The mining industry induced very large social changes, and led to strong disturbances in family life and marriage patterns. Mineworkers are often not married, and men and women in these countries tend to marry late, compared with other parts of the continent. In our study of Namibia, where large differences in premarital fertility were found by race and ethnicity, we favoured an interpretation focused on stress on families associated with the mines and with the political system during the apartheid years. [Garenne & Zwang, 2006]

<u>Analysis of variance</u>

In order to delineate the role of cultural factors versus that of socio-economic factors, we ran a series of analyses of variance. For all groups considered, about half (47.6%) of the differences in the level of premarital fertility by ethnicity could be explained by the three indicators of economic development selected: level of education, urbanization, and wealth (Table 2). The other half was due to cultural factors, and primarily due to ethnicity, and to a lesser extent to religion (20.3% in univariate analysis), and polygamy (about 25.1% in univariate analysis). This finding is obviously highly loaded by the situation of Southern

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African countries, which cumulate high levels of education, wealth and urbanization and have the highest levels of premarital fertility.

We ran a similar analysis of variance on selected countries with a high degree of ethnic stratification, and for which more than 10 ethnic groups were kept in the final analysis. Results show a wide variety of situations (Table 2). In some countries, ethnic stratification was highly correlated with socio-economic factors, and most of the variance could be accounted for by urbanization, wealth and education (Cameroon, Ghana, Kenya, Mozambique). In other countries, the role of the cultural factors was equivalent to that of socio-economic factors (Chad, Nigeria, South-Africa, Zambia). In a few cases, cultural factors were more important than economic development: in Congo-Brazza, almost all the variance (91.1%) was due to cultural factors; and in Tanzania, two thirds of the variance (62.5%) was due to cultural factors. Note that these two countries followed a socialist line to development for a number of years, which might have played a role in the differences. However, the Gini coefficient based on wealth computed in these countries (0.49 and 0.50 respectively) was not really different from the African average (0.56) [See Hohmann & Garenne, 2009 for details]. These two cases require more investigation.

The relationship between premarital fertility and the three socio-economic factors was by no mean straightforward. Urbanization was positively correlated (as expected) with premarital fertility in half of the 12 countries considered, but negatively correlated in the other half (Cameroon, Congo-Brazza, Ghana, Kenya, Nigeria, Zambia). Wealth was positively correlated (as expected) with premarital fertility in only 4 of the 12 countries considered (Congo-Brazza, Ghana, Kenya, Nigeria), but negatively correlated in the others. The effect of level of education was more consistently positive among the 12 countries, although it was negative in South Africa, because of its interaction with race. The effect of mean number of years schooling differed among the 11 countries where it was positive, and ranged from low values (Chad, Ghana, Nigeria) to high values (Liberia, Mozambique, Tanzania, Zambia). This underlines the fact that the situations of these countries are complex, that economic development is not uniform across ethnic groups, and that interactions between cultural factors and socio-economic factors are important.

Discussion

The role of cultural factors, and in particular of ethnicity, is crucial for understanding the very large differences in premarital fertility found in sub-Saharan Africa. Some groups marry early, others marry late; some practice widely polygyny, others not; some groups are very permissive with respect to premarital sex, other are very repressive. This was already shown in a small sample of ethnic groups displayed in the Murdock (1967) Ethnographic Atlas. This atlas did not distinguish between ages at marriage, but made a clear distinction between six categories of attitudes towards sexual behaviour, from most permissive to most repressive: (F) premarital sexual relations freely permitted, no sanctions; (A) premarital sexual relations allowed, no sanctions unless pregnancy results; (P) premarital sexual relations prohibited, weak sanctions; (E) premarital sexual relations precluded by early age at marriage for females; (V) relations prohibited, strong sanctions. We showed earlier that these categories defined by ethnographers in the first part of the 20th century still applied for the same ethnic groups with respect to premarital fertility measured in demographic surveys at the end of the 20th century [Garenne & Zwang, 20006b].

The role of religion deserves more research. We showed that both Islam and Christian religions tend to lower the age at marriage, and are both unfavourable to premarital intercourse. But Christian religions usually promote female education, which in turn tend to increase age at marriage, and therefore the risk of premarital fertility, so that the two effects tend to cancel each other, and sometimes the second effect is dominant. As a result, in the most advanced countries, Christian religions are often associated with increased premarital fertility. Islam has another effect: by allowing polygyny, it tends to lower the age at marriage, and in fact the countries with the highest proportions of Muslims tend to have lower age at marriage, higher proportion of women in polygamous unions, and lower premarital fertility.

This broad overview hides local situations which are quite different. In a number of countries, the ethnic stratification had little effect on either age at marriage or premarital fertility: the countries were quite homogeneous with respect to these variables, and culture had no impact on them. This was the case for Malawi, Mali, Niger, and Togo. Of course, the ethnic groups in these countries differed markedly from the African average, but differences among groups in these countries were small. Conversely, countries with a strong ethnic stratification such as Nigeria, Cameroon, and Tanzania exhibited very large gradients, summarizing the differences seen all over the continent.

Since the data used for this investigation were drawn from sample surveys, some of confidence intervals on estimates of premarital fertility were quite wide. Some could be reduced by cumulating data from different surveys, but sample sizes were still small in about half of the cases. More details could be obtained if censuses could include the information on dates (or ages) at first marriage and at first birth, which is enough information for documenting premarital fertility. This information is easy to collect in censuses, and could be gathered on a sample of the population in countries which have long forms (for the whole population) and short forms (for a sample only). This would give a broader and more accurate picture of premarital fertility by ethnicity, an important element for better understanding cultural factors of marriage and fertility, as well those of the epidemics of HIV and other sexually transmitted diseases. Of course, this necessitates to record and publish ethnicity as well, which is not always done in censuses, and to use a consistent coding of the ethnic codes, for instance by using a standard such as that proposed by the Ethnologue data base [Gordon, 2005].

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Table 1: List of African countries, with number of surveys available, sample size, number of ethnic groups kept, and level of premarital fertility at last survey

| Country | Selected for analysis by ethnicity | | | Total sample | |
	Nb surveys available	Nb ethnic groups	Nb of women	Last survey	Premarital fertility (%)
Benin	2	8	11710	2006	11.5
Botswana	0		4368	1988	68.7
Burkina Faso	2	10	25276	2003	7.5
Burundi	0		3970	1987	4.8
Cameroon	2	24	16157	2004	19.8
Central African Republic	1	9	5884	1994	11.1
Chad	1	12	7454	2004	3.1
Comoro Islands	0		3050	1996	3.0
Congo-Kinshasa (RDC)	1	7	9995	2007	15.3
Congo-Brazza (RC)	1	18	7051	2005	39.5
Cote d'Ivoire	2	5	8804	2005	32.7
Ethiopia	1	12	15367	2005	5.0
Gabon	1	7	6183	2000	46.7
Ghana	2	11	9405	2003	14.2
Guinea	1	6	6753	2005	9.7
Kenya	3	11	23616	2003	30.6
Lesotho	0		3603	2004	17.0
Liberia	1	13	5239	2007	33.2
Madagascar	0		13320	2003	17.8
Malawi	1	9	13220	2004	13.2
Mali	2	9	22553	2006	8.7
Mozambique	1	16	8779	2003	14.8
Namibia	2	8	12176	2007	67.1
Niger	2	9	14080	2006	3.1
Nigeria	2	20	17430	2003	8.8
Rwanda	2	3	12289	2005	9.3
Senegal	2	8	14903	2005	8.1
South Africa	1	13	11735	1998	59.1
Swaziland	0		8975	2006	74.7
Tanzania	2	29	17358	2004	18.8
Togo	2	5	11929	1998	13.5
Uganda	2	7	14316	2006	18.3
Zambia	3	18	22739	2007	23.2
Zimbabwe	2	2	16236	2005	16.0
Total	28	309	405923		17.6

Table 2: Analysis of variance of premarital fertility by ethnicity in Africa

	Percent of the variance explained by	
	Socio-economic factors	Cultural factors
Univariate analysis (whole sample)		
Urban residence	20.2	
Wealth	29.4	
Education	46.3	
Religion		20.3
Polygyny		25.1
Permissiveness		
Multivariate analysis		
Whole sample	47.6	52.4
By country Cameroon	83.7	16.3
Chad	58.2	41.8
Congo-Brazza	8.9	91.1
Ethiopia	42.3	57.7
Ghana	84.5	15.5
Kenya	79.9	20.1
Liberia	70.5	29.5
Mozambique	81.6	18.4
Nigeria	66.8	33.2
South Africa	53.7	46.3
Tanzania	37.5	62.5
Zambia	62.1	37.9

Note: For multivariate analysis, only countries with more than 10 ethnic groups were selected

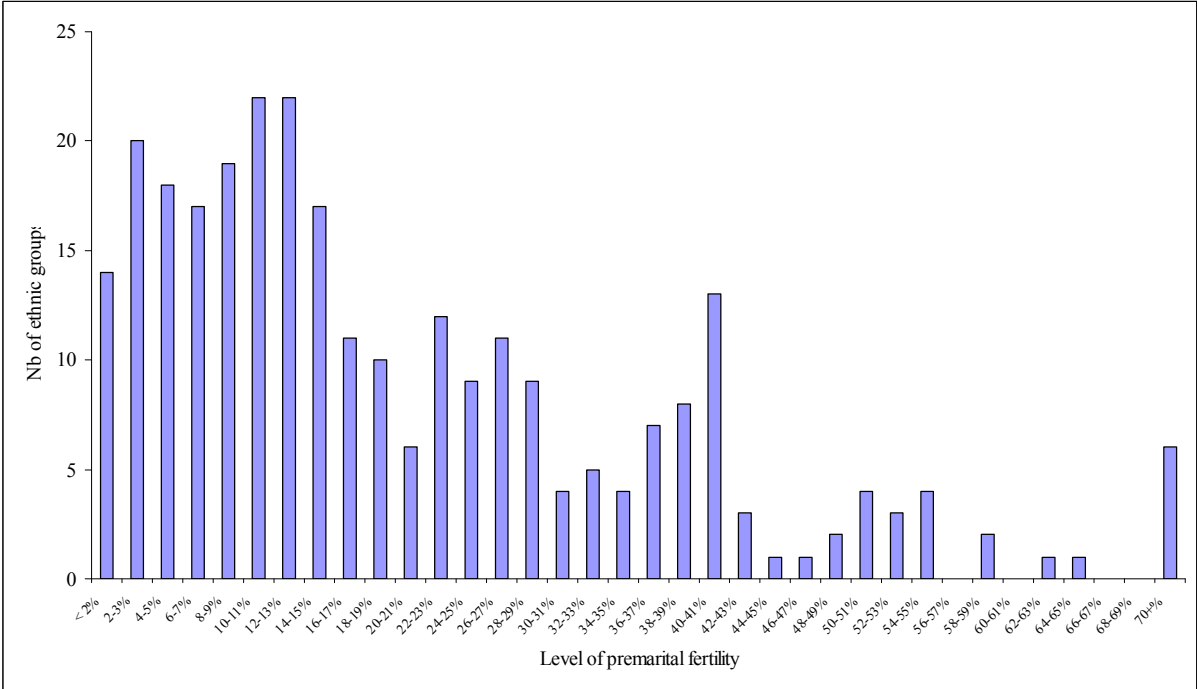Figure 1: Distribution of levels of premarital fertility, by ethnic groups, sub-Saharan Africa

Figure 2: Regional variations of premarital fertility in sub-Saharan Africa
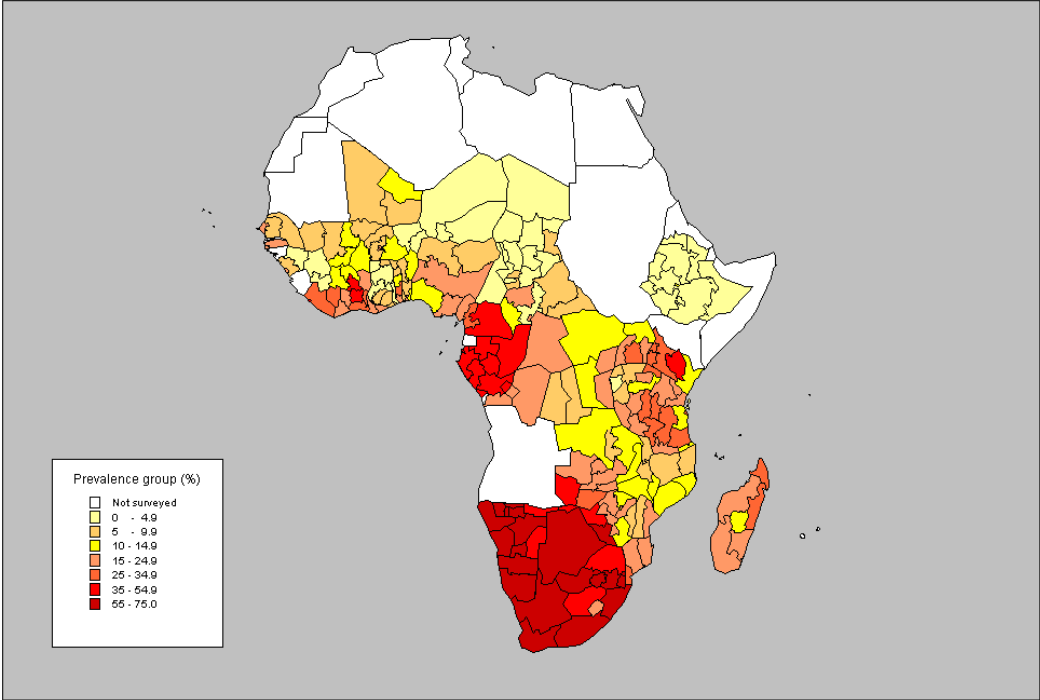
Figure 3: Premarital fertility and age at marriage by ethnic group, sub-Saharan Africa