

RESEARCH ARTICLE		Sociodemographic Transformations and Their Impact on Fertility Decline in Algeria (1970 - 2012)	
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Abstract			
According to national demographic surveys, Algeria has experienced a sharp decline in fertility since 1970, with the total fertility rate falling from 8.1 to 2.7 children per woman by 2012. This decline, particularly pronounced among age groups under 25 years, reflects social transformations such as an increase in the age of marriage and a decrease in early marriages. Fertility has also been influenced by sociodemographic factors, including education, women's employment, and urbanisation. Despite relative stability in fertility between 2002 and 2012, the increase in the number of women of childbearing age contributed to maintaining a relatively high birth rate.			
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Introduction:

The fertility rate in Algeria has witnessed a marked decline since independence, falling from high levels to below the replacement threshold, followed by a slight increase according to the results of demographic surveys, starting with the 1970 National Statistical Survey (ENSP) and continuing to the 2012 Multiple Indicator Cluster Survey (MICS4). The fertility rate decreased from 8.1 children per woman in 1970 to 2.7 in 2012, after reaching 2.2 in 2002. Given the persistence of high rates for an extended period, this trend surprised researchers, with rates of 5.4 in the 1986 survey and 4.4 in the 1992 Family Health Survey. Data also revealed variation in fertility according to economic and social variables. In 1970, the average number of children for women aged 30-34 was 5.7 among illiterate women, 4.7 among those with primary or religious education, and 3.5 among women with secondary education or higher. For women aged 35-39, the average was 3.9 for working women versus 6.4 for non-working women, with fertility generally lower among working women across various age groups.

Based on these data, the following question arises: To what extent do sociodemographic factors affect fertility in Algeria, and how has this influence changed between 1992 and 2012?

1. Methodology of Analysis and Data Sources:

This study relies on a descriptive-analytical approach to observe and analyse the evolution of fertility in Algeria. Moreover, it employs statistical methods to extract quantitative indicators from national demographic survey data between 1992 and 2012, explaining sociodemographic factors' impact on fertility.

2. Definition of Concepts:

2.1. Concept of Fertility:

Fertility (*fécondité*) refers to the number of live-born children born to women aged between 15 and 49. It differs from fecundity (*fertilité*), which denotes the biological or physiological capacity for conception and reproduction.¹ Roland Pressat defines fertility as a phenomenon concerning the relationship between live births on the one hand and women of reproductive age, couples together, or men as an exception on the other. He further explains that fertility is the actualisation of fecundity, which he defines as the capacity to procreate, noting that fertility may be either natural or controlled.²

2.2. Total Fertility Rate (ISF):

The Total Fertility Rate, *Indice Synthétique de Fécondité* (ISF), denotes the number of children born per woman or thousand women during the reproductive years. It is calculated by summing the age-specific fertility rates and multiplying by the length of the age interval. Statistically, the ISF can be formulated as follows:³

$$ISF = 5 \times \sum (fx \cdot (x+5))$$

3. Fertility Trends in Algeria (Total Fertility Rate):

Most developing countries have historically exhibited some of the highest fertility rates worldwide, which have been gradually and continuously declining. In Algeria, the Total Fertility Rate (ISF) was 2.7 children per woman in 2012, according to the most recent survey, the Multiple Indicator Cluster Survey (MICS4). This represents a decline from 8.1 children per woman in 1970, recorded in the first national survey, the National Statistical Survey (ENSP). The following table reflects the evolution of the Total Fertility Rate in Algeria from 1970 to 2012.

Table 1: Relative Changes in Total Fertility Rates in Algeria (unit: children per woman)

Years	1970	1986	1992	2002	2012/2013
Total Fertility Rate (ISF)	8.1	5.4	4.4	2.2	2.7

Source: National Demographic Surveys conducted in independent Algeria: ENSP (1970), ENAF (1986), EASME (1992), EASF (2002), MICS4 (2012/13).

Between 2002 and 2012, fertility in Algeria experienced a period of relative stability, with the total fertility rate ranging between 2.2 and 2.7 children per woman—levels unprecedented in the country's history since independence. According to national demographic surveys conducted throughout Algeria's post-independence era, the total fertility rate witnessed a significant decline of approximately six full points between the first survey, the 1970 National Population Study, and the most recent survey, the Multiple Indicator Cluster Survey (MICS4). Notably, this decline accelerated between 1970 and 1986, indicating a striking change in reproductive behaviour among Algerians.

One study demonstrated that the reduction in marriage rates had a profound effect on lowering the general fertility rate in Algeria by at least 50%, affecting all age groups, especially those under 25.⁴

According to the 2005 United Nations report, the total fertility rate recorded a significant decline from 2000 to 2004, decreasing by 2.5 children per woman. Thus, Algeria is considered one of the Arab countries with the most pronounced

¹ Haupt, Arthur, and Thomas T. Kane. *Demography Guide*. 4th ed. United States: Population Reference Bureau, 2004, 13.

² Pressat, Roland. *Demographic Analysis: Concepts, Methods, and Results*. Translated by Mohamed Riyad Rabie. Algiers: University Publications Office, (1985), 27.

³ Khalil Abd al-Hadi al-Badawi. *Population Sociology*. Amman, Jordan: Dar Hamed, 2008, 7.

⁴ Kouaoui, Ali. *Families, Women, and Contraception*. Algiers: CNEAP, 1992, 49.

fertility decline. However, compared to neighbouring countries (Tunisia and Morocco), Algeria's fertility level is closer to Morocco's and somewhat lower than Tunisia's.⁵

3.1. Trends and Levels of General Fertility by Age:

Age-specific fertility data from Arab countries indicate high fertility levels, characterised by bell-shaped curves. Fertility rates begin in the 15–19 age group, rise to peak between 20 and 35 years, and then gradually decline approaching menopause. Algeria is among the countries distinguished by high fertility rates; according to data from the 1970 National Statistical Survey on Population, the average number of children born to a woman during her reproductive lifetime was estimated at 8.1 children per woman.

Demographic studies have demonstrated that women share a similar level of reproductive capacity across different age groups. Women under twenty exhibit lower fertility than those between twenty and thirty. Subsequently, a woman's fertility gradually declines.⁶ To understand the evolution of age-specific fertility rates in Algeria from 1970 to 2012, we refer to the following table:

Table 2: Evolution of Age-Specific Fertility Rates in Algeria (unit: per mille ‰).

Age Group	ENSP 1970	ENAF 1986	EASME 1992	PAPFAM 2002	MICS4 2012
15–19	114	33	21	6	10
20–24	338	187	143	59	80
25–29	388	236	214	119	138
30–34	355	260	220	134	144
35–39	281	216	164	104	114
40–44	151	102	92	43	44
45–49	42	33	23	9	7
ISF	8.1	5.4	4.4	2.2	2.7

Source:

- National Office of Statistics for the years 1970, 1986, 1992
- CENEAP for the year 2002
- Ministry of Health, Population and Hospital Reform for the year 2012

When analysing age-specific fertility between 1970 and 2012, we observe a marked decline across all age groups, especially among those under 25. This indicates a significant decrease in early marriage following Algeria's independence. In the 15–19 age group, fertility levels fell by 94.7% between 1970 and 2002. Similarly, in the 20–24 age group, the decline is estimated at 82.5%. For the entire reproductive age range (15–49 years), fertility decreased sixfold between 1970 and 2012. In contrast, when examining the intermediate age groups, fertility declined but not to the same extent as in the younger age groups. This pronounced decrease in fertility levels is clearly illustrated in Table 2.

Summary:

The theoretical analysis of fertility and its trends leads us to believe Algeria has not deviated from the demographic transition theory. Despite the considerable increase in fertility levels in recent years after approaching the replacement level of 2.1 children per woman, this can be explained, in addition to the aforementioned factors, by the natural increase in the number of women of reproductive age (15–49), which exceeded one and a half million in 2014. Furthermore, the influence of various sociodemographic factors such as contraceptive use, delayed marriage age, and indirect factors, including education level, women's employment, and urbanisation, also play a role. Accordingly, even if women limit

⁵ Ouadah-Bedidi, Z., and J. Valin. "Maghreb: The Irresistible Decline of Fertility." *Population et Sociétés*, no. 351 (July–August 2000). INED, Paris.

⁶ Imran Abd al-Rahim. *The Population of the Arab World: Present and Future*. New York: United Nations Fund for Population Activities, (1988), 176.

themselves to having only two children, the large number of women of reproductive age will result in a high total number of births and, consequently, elevated fertility rates.

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