

Changes in birth rates in Algeria through the chronology of surveys and investigations according to the PAPFARM and MICS6 survey



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Abstract:

In this study, we relied on the multiple calibration technique to identify the effect of age structure, the proportion of married women, and marital fertility on increasing the crude birth rate. We applied the Bonqart model to estimate the effect of mediating factors on changes in marital fertility during the period (2002-2019). In this study, we used data from the National Family Health Survey 2002, and multiple indicator cluster surveys completed in 2012-2013 and 2019. We concluded that the main reason for the CBR moving from 21.46 to 25.79 per thousand in the 2013 survey was the increase in the percentage of non-single women of childbearing age. The slight decline in this rate in the 2019 survey was due to the effect of age structure.

Keywords: Crude birth rate; fertility; marital fertility; Bongaarts Model.

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Introduction:

Since independence and up to the present day, Algeria has witnessed several changes in various phenomena related to population and demographic growth. After independence, the demographic situation was characterized by an increase in births and a decrease in the birth rate, the crude birth rate took a declining trend at the beginning of the eighties, this decline was prominent in the nineties due to exceptional circumstances that Algeria experienced and its repercussions on the social, economic and security conditions in the country. This pace did not remain the same at the beginning of the first decade of the twenty-first century, but it witnessed a return to an increase in the number of registered births.

Through this study, we will attempt to calculate the crude birth rate by applying the decomposition technique so that we can know the impact and contribution of each vehicle in increasing or declining this rate in Algeria, using data from the National Family Health Survey 2002 and the multiple indicator cluster survey completed in the years 2013 and 2019.

I. The problem

According to the National Bureau of statistics, the number of residents residing in Algeria in 2002 was about 32 million people reaching 43.4 million people in 2019, this increase came as a result of the increase in the number of births between these two years 2002 and 2019. Anyone who tracks the movement of births in the Algerian society through various national censuses and surveys sees that it has taken different trends, where the crude birth rate witnessed a continuous increase accompanied by a decline in the crude death rate beginning from the year 1966 until 1987. This period witnessed a doubling of the population from 12 million people to 23 million people as a result of the prevalence of early marriage in addition to the lack of spread of contraceptives and the low educational level of women in general, then the crude birth rate began to decline gradually from the year 1987 until the year 2000. This decline came as a result of the spread of the use of contraceptives among women, favoring various programs that call for birth control and the necessity of controlling the increasing demographic growth in Algeria, as well as a result of the decline in the age at first marriage for both males and females, this pace did not remain the same, especially at the beginning of the first decade of the twenty-first century. Rather, it witnessed sudden increase in the crude birth rate, contrary to what was expected, where it moved from 19,3% in 2001 to 24,5% year 2019 which is equivalent to a difference of 5,2 points. The

general fertility rate also increased during this period, as it moved from 2,2 child per woman in 2002 to 2,8 child per woman in 2019. This development prompted us to ask about the most important factors that contributed to the change in the crude birth rate in Algeria, which in turn affected fertility trends between 2002 and 2019 ? Does changing the female age structure of women of marriageable age have an impact on the crude birth rate? Is there an increase in the percentage of non-single women and does this affect the crude birth rate? What are the most important factors that affect marital fertility rate in Algeria?

II. Study hypotheses

-Age structure did not affect the crude birth rate in Algeria during the period 2001 – 2002.

-The proportion of non- single women increase the crude birth rate in Algeria during the relevant period.

-The decline in the use of contraceptives among married women is considered the main mediating factors for the rise marital fertility levels in Algeria.

III. Objectives of study

The article aims to:

-Knowing the most important demographic factors leading to the increase in the number of births in Algeria recently.

-Determine the contributions of variable related to breastfeeding contraceptive use, abortion, and infertility that affected fertility rates marital.

IV. Study concepts

IV.1. Age composition

It is the composition of the population according to the years of life they have spent (the distribution of the population according to the elapsed age) and this can be determined either according to the date of birth of people, or by the number of years that each of them has completed since the moment of birth, (Yunus 2014, page 50).

IV .2. Crude birth rate

Births are the natural means of population reproduction and growth, but the total number of births is not enough to give a clear idea about this, because a

certain number of newborns are born every year for a country with a small population differ in importance relative to the same number of births for another country the population is twice that of the first country, so new births are attributed to a number population per year, because the population at the beginning and ending of the year is differ. (Prisa, page 127). It is calculated as follows:

Crude birth rate = (number of lived births per year/ population in middle year) * 1000.

IV.3. Fertility

Fertility in modern demographic usage relates to the actual birth rate. A woman's fertility does not mean the children born before. (Brisa, page 127). Actual fertility can be divided into two parts:

IV.4. Natural fertility

means reproductive behavior without resorting to the use of contraceptives, intentional abortion, or any other means of voluntary birth control, i.e. the fertility of married women in lack of use of contraceptives and intentional abortion.

IV.5. Directed fertility

is reproductive behavior in a society that effectively practices contraception for the purpose of determining or controlling births. (Ahmed Khalaf and Asma 2017, page 146)

IV.6. Marital fertility

Marital fertility means the fertility of married members of society, and the focus is on a specific category of married couples, such as the category that corresponds, for example, to marriages that were concluded within one year and whose fertility is traced according to the duration of the marriage. (Al Rifai, and all, 2011, p34).

IV.7. BONGAARTS model

In 1978, and based on the conceptional framework of works of Davies and Black, BONGAARTS developed model for analyzing fertility, dividing it into three categories: factors of sexual exposure, factors regulating intentional marital fertility, and factors regulating natural fertility. In 1982, BONGAARTS acknowledged

the existence of only four variables that have the possibility of a direct impact on fertility, which is the percentage of married women, breastfeeding, contraceptives, and intentional abortion (Fadila 2017, page 64). In the middle of the article, you will present in more detail the components of this model and the methods for calculating its indicators. (See presentation and discussion of the results).

V . Data sources

This study relied on the Algerian Family Health Survey data (ESAF, 2002) and the Multiple Indicator Cluster Survey data (2012-2013) and 2019 (MICS4, MICS6).

V.1. The Algerian Family Health Survey (2002, ESAF)

The Arab Family Health Project was established with the aim of enabling decision-markers in Arab countries to obtain basic information in order to implement the evaluation and follow-up of health and population policy. This project falls within the framework of the continuity of the Arab Project on Maternal and Child Health (PAPCHILD), which was initiated by the League of Arab States. This survey enabled Arab countries to obtain the necessary data to assess the health status of the population and to develop health policies and programs aimed at enhancing the positive aspects and addressing the recorded shortcomings.

The sampling base consists of all ordinary families that were counted during the general population and housing census that took place in 1998.

In response to the need to provide statistical information in both urban and rural settings, the provinces were classified according to the affiliation of each province, so this group formed the sampling base from which the sample was drawn (ONS, 2004, p.5).

V.2. Fourth Multiple Indicator Cluster Survey (MICS4)

It is the fourth survey carried out by Algeria in agreement with UNESCO and the United Nations Fund and used three questionnaires (household, women aged between 15-49 years and children under 5 years old), which were adapted to the statistical requirements of Algeria, where 41184 eligible woman aged between 15 and 49 years, were counted 38548 of whom were successfully interviewed (ONS, 2015, p.44).

V.3. The Sixth Multiple Indicator Cluster Survey (MICS6)

The Sixth Multiple Indicator Cluster Survey (MICS6) was conducted in Algeria in 2019 by the Population Directorate of the Ministry of Health, Population and Hospital Reform as part of the global survey program MICS. It was implemented with financial and technical support from the United Nations (UNISCEF). This survey allows for the assessment of deficiency in Areas of human and social development at the national level and to provide national development programs with reliable statistics on the conditions of children, women and households. Five questionnaires were used (Family, Women aged 15-49 years, Children under 5years old, A new individual questionnaire for children aged 5-17 years, Analysis quality of water drunk by household members). (OMS,2020, p27).35111 eligible women aged between 15 and 49 years were successfully questioned.

VI . Presentation and discussion of the study results

Fertility is defined as the precise and in-depth analysis of the phenomenon of births in a given society with the aim of arriving at realistic indicators for that phenomenon. It is a demographic and social phenomenon that means the ability of the population to increase their number to compensate for the natural deficiency resulting from their deaths, provided that this increase is proportional to the data and circumstances of the society, its interim goals and its short-term development plans.(Al-Rifai and others,2011, page. 100). The event of marriage is considered one of the direct determinants that affect behavior reproduction among women in Algerian society.

Table 1: Age composition of single women (%), the percentage of married women, the general fertility among women aged 15-49 years in the total population during the 2002, 2013 and 2019 survey.

Age categories	2002			2012/2013			2019		
	Age composition	married Women %	General Fertility rate	Age composition	married Women %	General Fertility rate	Age Composition	married Women %	General Fertility Rate
15-19	6.2	0.1	0.006	4.4	0.1	0.010	3.5	0.1	0.012
20-24	5.5	0.9	0.059	4.9	1.3	0.080	3.7	0.9	0.081
25-29	4.3	1.8	0.119	5	2.6	0.138	3.9	2.2	0.161
30-34	3.6	2.2	0.134	4.4	2.8	0.143	3.7	2.8	0.150

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35-39	3.4	2.6	0.105	3.5	2.4	0.112	3.6	2.8	0.107
40-44	2.6	2.1	0.043	3.1	2.3	0.043	3.3	2.6	0.043
45-49	2.2	1.9	0.009	2.6	2	0.007	2.9	2.4	0.005
Source: Personal accounts based on survey data (2002, 2013,2019).									

Observing the table above shows us that the increase in the percentage of married women in 2013 affected all age groups except for the age group 35-39 years. We also that most marriages were concentrated in the age group 25-34 years compared to 2002, while the percentage of married women was known in 2019 the highest percentage is in the age group 29-30 years. This increase in marriages can be explained by the desire of young people to marry in light of the improvement of various social, economic and political conditions after a wave of the security unrest occurred in the 1990s, which caused material and human losses in the country. General fertility rates according to age groups also increased simultaneously with the increase in the percentage of married women, and this is normal. It peaked at the age group 30-34 years in the 2013 survey and in the 25-29 years category in the 2019 survey.

VI.1. Development of the crude birth rate in Algeria

The evaluation of birth rate in a given population can be traced between two or more dates, or the birth rate of different population groups can be compared using a multiple calibration model that allows the difference between two crude birth rates to be decomposed into several different composites:

- The effect of the composition according to age.
- The effect of the percentage of married women.
- The effect of legal fertility.

Common compounds and reactive compounds can be added, but their interpretation is not always easy. There are several methods that are explained in details. However, these methods are very long and require long calculations that are more complex for the average user. This is the reason that allows us to have only three compounds (Kouaouci, 1992, p.31).

The crude birth rate can be calculated by dividing the number of births during a year by an average population during the same year.

$$TBN = \frac{N}{P}$$

Where:

TBN : represents the crude birth rate.

N : represents the number of births.

P : represents the average population size (the range is required to be annual, and is calculated between two observation dates). "Since the birth rate concerns non-single women, we can link them together at the same time as you calibrate this indicator (TBN).this is done by multiplying the numerator and denominator of the previous equation once by the number of women of reproductive age (15-49), which will be symbolized by F_{15-49} , and again by the number of non-single women for the same age group FM_{15-49} . This process leads us to the following equation" (Nasser, 2014, p. 107):

$$TBN = \frac{F_{15-49}}{P} \times \frac{FM_{15-49}}{F_{15-49}} \times \frac{N}{FM_{15-49}}$$

$$TBN = \langle S \rangle \times \langle N \rangle \times \langle MF \rangle$$

In order to know the installment of these compounds between two observation dates, $TBN1$ represents the beginning period rate for the 2002 survey and $TBN2$ represent the end period rate, and it can be calculated from MICS4 data, and the effect of each of them on the increase or decrease in the crude birth rate, where:

$$TBN1 = \langle S1 \rangle \times \langle N1 \rangle \times \langle MF1 \rangle$$

$$TBN2 = \langle S2 \rangle \times \langle N2 \rangle \times \langle MF2 \rangle$$

We divide $TBN1$ by $TBN2$ i.e:

$$\frac{TBN1}{TBN2} = \frac{\langle S1 \rangle}{\langle S2 \rangle} \times \frac{\langle N1 \rangle}{\langle N2 \rangle} \times \frac{\langle MF1 \rangle}{\langle MF2 \rangle}$$

By inserting the logarithm, the equation is written in the following form:

$$\log \frac{TBN1}{TBN2} = \log \frac{\langle S1 \rangle}{\langle S2 \rangle} \times \log \frac{\langle N1 \rangle}{\langle N2 \rangle} \times \log \frac{\langle MF1 \rangle}{\langle MF2 \rangle}$$

This equation enables us to know the effect of each compound on the crude birth rate, whether by increase or decrease. Then it had an effect (S) for example, is calculated simply as follows:

$$\log(\langle S1/S2 \rangle) / \log(\langle TBN1/TBN2 \rangle)$$

We applied the multiple calibration method to the data of the National Family Health Survey and the Multiple Indicator Cluster Survey (MICS4) in order to identify the effect of each of the three components and which of them contributed to raising the crude rate between the years 2002 and 2013, so we obtained the results shown in the table below:

Table 2: Development of the crude birth rate and its components during the years 1970-1986, 1986-1992 and 2002-2019.

The years	<S>	<N>	<F>	Crude birth rate
1970	0.210	0.700	0.329	48.30
1986	0.215	0.540	0.279	32.40
1992	0.239	0.540	0.195	25.16
2002	0.279	0.449	0.171	21.46
2012/2013	0.279	0.522	0.177	25.79
2019	0.237	0.581	0.178	24.52
Source: Personal accounts on the on data EASF 2002, MICS4 2013, MICS6 2019.				

From the data of the table above, we notice that the crude birth rate is constantly declining during the years 1970/1986, 1986/1992, 1992/2002. During the first period (1986/1970) the crude birth rate declined from 48.30 % to 32.40 %, a difference estimated at 16 points. The percentage of married women is the main reason for reducing the crude birth rate in this period, which moved from 70 % to 54 %, followed directly by the impact of marital fertility with a change rate estimated at 5%. However, the demographic composition did not affect crude birth rate during this period.

During the period (1986/1992), we note that the crude birth rate decreased compared to the period (1970/1989), from 48.30 to 32.40 %. The main reason behind this is the decline in the legal fertility rate by 9 %, while the percentage of married women remained the same.

During the period (1992/2002), the crude birth rate witnessed a slight decline by about 2%, as a result of the decrease in the percentage of married women from 54% to 45%. This happened due to fluctuations in marriage rates depending on the security conditions that Algeria experienced during that period, which forced young men of marriageable age to postpone their marriage.

As for the period (2002/2013), there was a significant and sudden increase in the crude birth rate (4‰). This increase was not expected by population studies, as the latter moved from 21.46‰ to 25.79‰, and the main reason for this was the increase in the percentage of non-single women in the age of childbearing increased from 45% to 52%, while the marital fertility rate remained the same during this period, as the last decade of the twentieth century witnessed a decline in the number of marriages as a result of the unstable security and economic conditions in Algeria, which forced young people about to get married to delay their marriages, but things did not remain the same. With the return of stability to the country, these rates witnessed a gradual increase, accompanied by an increase in fertility rates to approximately three children per woman.

This change occurred at a time when women became more likely to use contraceptives, in addition to the increase in the average age at first marriage for both sexes and the improvement of the educational level, especially among females.

During the period (2013/2019), we noticed that the crude birth rate recorded a slight decline from 25.79‰ to 24.52‰, estimated at one point. The main reason for this is the decrease in the effect of age structure by 4%, where it peaked in the age group 25-29 years, the later known a decline in the percentage of married women, from 2.2 year to 2.6 between 2013 and 2019 (see table No.1).

Table No.3: The effect of age structure, the proportion of married women, and legal fertility on the crude birth rate in Algeria (1970/2019)

Periods	The effect of the age composition	The effect of the proportion of married women	The effect of legal fertility	The amount of decrease in the crude birth rate
1970/1986	5.9	-65.0	-41.3	-15.9
1986/1992	41.8	0.0	-141.6	-7.2
1992/2002	96.5	115.3	-81.4	-3.7
2002/2013	0.7	81.6	17.6	4.3
2013/2019	323	-211	-12	-1
Source: Personal accounts on data EASF 2002, MICS4 2013, MICS6 2019				

The results of the table above showed that the crude birth rate was in continuous decline during the period 1970 until 2002, and the amount of this decline was 9%, this is mainly due to the decline in legal fertility rates, followed by the impact of married women aged 15-49 years. This pace did not remain the same during the period 2002-2013, where we noticed an increase in the amount of the crude birth rate, which reached 4.3%. This increase is due to the increase in the percentage of married women as a main factor, followed directly by the effect of legal fertility. During the period 2013/2019, we noticed a slight decrease in this rate due to the effect of age composition.

VI.1.1. The difference between general fertility rates and marital fertility in Algeria

since marriage is the first step that precedes the process of procreation, we conclude that marital fertility rates differ from general fertility rates. This difference appears clearly when analyzing fertility according to age groups among women of age between 15-19years old.

Table No.4: General fertility rates and marital fertility rates during the 2002, 2013 and 2019 survey

General fertility %					
Age groups	*2002	**2012/2013	***2019	(a-b)/a	(b-c)/b
15-19	6	10	12	67%	20%
20-24	59	80	81	36%	1%
25-29	119	138	161	16%	17%
30-34	134	143	150	7%	5%
35-39	105	112	107	7%	-4%
40-44	43	34	43	-	-
49-50	9	7	5	-22%	-29%
	2.4	2.7	2.8	13%	4%
Marital fertility%					
Age groups	2002	2012/2013	2019	(a-b)/a	(b-c)/b
15-19	290	233	243	-20%	4%
20-24	296	311	324	5%	4%
25-29	237	265	277	12%	5%
30-34	183	223	202	22%	-9%
35-39	123	162	139	32%	-14%

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40-44	47	56	54	19%	-3%
45-49	10	8	6	-20%	-26%
	5.9	6.3	6.3	7%	-
Source: *Main Family Health Report2002. **Multi-Indicator Cluster Survey Main Report (2012-2013) *** Multi-Indicator Cluster Survey Main Report (2019) Personal Accounts on Data EASF 2002, MICS4 2013, MICS6 2019					

You can see from the table above that the general fertility rate reached its highest level at the age group is 30-34 years old during the years 2002 and 2013, and then begins to decline whenever growing old. This increase at this age can be attributed to a delay in age marriage among Algerian women, while we noticed that the general fertility rate reached its highest level in the age group 25-29 years old.

As for marital fertility, it reached its highest level in the age group of 20-24 years during the years 2002, 2013, and 2019, at a rate of 296‰ in 2002, 311‰ in 2013, and 324‰ in 2019. The Algerian family, like other Arab Islamic families, constantly encourages women to have children immediately after marriage without delay, away from using contraceptives that may postpone the birth of first child.

The data in Table 4 shows that the relative growth in marital fertility between the years 2002 and 2019 recorded a decline in the age groups 15-19 and 45-49 years, while it increased in other groups. This decline is due to the availability of these women awareness health risks and complications of early or late childbirth.

VI.1.2. Estimating the effect of contraceptives, infertility, and infertility/ abortion on combined marital fertility changes (TM) during the period 2002 and 2019 by applying the BONGAARTS model.

When married women are isolated from the rest of the single women who are of childbirth age 15-19 years, you are studying legal fertility (TM) (Siham 2013, p.99). Therefore, you can estimate the contribution of contraceptive use (Cc), infertility (Ci), abortion (TF. Ca) in fertility changes during the years 2002 and 2013 without exposure to the phenomenon of marriage (Cm)Cm.

Kawassi expresses the product (TF. Ca) as the effect of abortion and infertility on maximum fertility, but when you assume the absence of abortion on fertility in Algeria (Ca=1), the product (TF. Ca) will represent the effect of infertility

on maximum fertility (Siham 2013, p.100). we will calculate the contraception index (Cc), infertility Ci, and the miscarriage index Ca by applying the following equation:

$$TM=(TF\times Ca)\times Cc\times Ci$$

$$(TF\times Ca)=\frac{TM}{Ci\times Cc}$$

a) Estimation of the contraceptive index: C_c

Finding C_c requires calculating the average usage effectiveness of use (e) for different years, which depends on the combination of contraceptive methods used in addition to the theoretical effectiveness of each method. (Fadila, 2017, p. 65).

To calculate the extent to which the contraceptive index C_c quantitatively affects fertility, we use the following simple equation:

$$C_c = 1 - 1,08.u.e$$

Where it represents:

u Percentage of married women who used contraceptives

e Average effectiveness of the contraceptive method used.

The factor 1.08 is the correction factor for infertility data.

The calculation of C_c is based on calculating the average effectiveness of use e , for different years, which depends on the combination of contraceptive methods used in addition to the theoretical effectiveness of each method, where it represents:

$e(m)$ The theoretical average efficacy of each contraceptive method used by BONGAARTS.

$u(m)$ Percentage of married women who use a certain method of contraception.

The contraceptive index is equal to one in the absence of contraceptive use and it is equal to zero if all women use an effective method of contraception.

b) Estimation of the breastfeeding index C_i :

In the absence of breastfeeding, BONGAART estimated the period for pregnancy to be 20 months, but in the presence of breastfeeding, this period may increase by about 18.5 month. He called the average period of inability to conceive the infertility index or the breastfeeding infertility index (Fadila, 2017, p. 66). The infertility index is calculated according to the following equation:

$$C_i = \frac{20}{18,5+i}$$

Where (i) represents the average period of menopause and abstaining from sexual relations after childbirth, and it can be calculated according to the following equation:

$$i = 1.753 \times e^{0,1396 \times L - 0,001872 \times L^2}$$

L: duration of breastfeeding (Siham, 2013, p.90).

In the absence of breastfeeding i equals one, and equals zero in the case of terminal infertility.

Table No.5 shows the structural index of marital fertility (TM) and the effect of both the use of contraceptives C_c and infertility C_i , abortion during the years 2002, 2013 and 2019. As we found that the structural index of marital fertility (TM) increased by one point in 2013 while it recorded stability in 2019, The index of use of contraceptives C_c also recorded a slight increase, as it moved from 0.44 in 2002 to 0.43 in 2013, while the breastfeeding index decreased C_i from 0.76 to 0.75 in 2013 to reach 0.77 in 2019. We noticed that the abortion or infertility index increased as it moved from 16.1 in 2002 to 18.61 in 2019. We can say that both factors of contraceptive use and abortion they contributed to raising marital fertility rates, while breastfeeding had the opposite effect for the previous two factors during the period 2002-2013. On the other hand, both breastfeeding and abortion contributed to raising marital fertility rates during the period 2002-2019.

Table No. 5: The structural index of marital fertility (TM) and the effect of both contraceptive use C_c , infertility C_i , abortion Ca, during the years 2002, 2013, 2019.

Indicator	PAPFAM (2002)	MICS4 (2012-2013)	MICS6 (2019)
C_c	0.44	0.43	0.44
C_i	0.76	0.75	0.77
TF.Ca	16.15	17.5	18.61
TM	5.4	6.3	6.3
Source: Personal accounts on EASF 2002, MICS4 2013, MICS6 2019 data			

VI.1.3. Contribution of mediating factors to marital fertility

We can estimate the effect of both of using contraceptive C_c , breastfeeding C_i , and abortion TF.Ca during the years 2002 and 2013 on the change in marital fertility according to the following equation:

$$\begin{cases} TM_1 = (TF \times Ca)_1 \times C_{c1} \times C_{i1} \\ TM_2 = (TF \times Ca)_2 \times C_{c2} \times C_{i2} \end{cases}$$

We enter the logarithms as follows:

$$\log \frac{TM_1}{TM_2} = \log \frac{(TF \times Ca)_1}{(TF \times Ca)_2} + \log \frac{C_{c1}}{C_{c2}} + \log \frac{C_{i1}}{C_{i2}}$$

For example, to estimate the effect of using contraceptive methods C_c during the period, we apply the following equation:

$$\log \frac{C_{c1}}{C_{c2}} / \log \frac{TM_1}{TM_2}$$

The table below shows the effects of mediating factors on fertility between the dates of 2002 and 2013, where we noticed that contraceptives had a clear impact on marital fertility, reaching 56%, followed by the abortion factor at 52%, but infertility had the opposite effect for the previous two factors. The factor

of abortion contributed in changing marital fertility by a high rate estimated at 92% between the dates 2002 and 2019, followed by the fertility factor at 8%, with a complete absence of the effect of using contraceptives.

Table No. 6: The effect of mediating factors on marital fertility during the period 2002-2019.

Indicators	Share of contribution to changing marital fertility (2002-2013)	Share of contribution to changing marital fertility (2002-2019)
C_c	56%	-
C_i	-9%	8%
TF. Ca	52%	92%
The total	100%	100%
Source: Personal accounts on EASF 2002, MICS4 2013, MICS6 2019 data..		

V. Conclusion

This article dealt with the issue of birth movement and its development at the beginning of the twenty-first century in Algerian society, and the source of this interest is the attempt to understand the factors leading to change in the crude birth rate during the period 2002-2019, which recorded a significant increase resulting in an increase in the general fertility rate in 2013, as the structural index of fertility moved from 2.2 child per woman in 2002 to 2.7 child per woman in 2013 to reach 2.8 child per woman in 2019.

One of the worth noting is the percentage of married women aged 15-49 years out of the total population recorded an increase in 2013 compared to 2002, and that the main reason for the crude birth rate moving from 21.46 to 25.79 per thousand is the increase in the percentage of non-single women of childbirth age 15-49 years from 45% to 52%, followed directly by the effect of legal (marital) fertility. However, age composition had no role in this increase. The slight decrease in crude birth rate in 2019 compared to 2013, from 25.97 to 24.52 per thousand, is due to the effect of age composition. We also noticed that the relative growth in marital fertility between 2002 and 2019 recorded a decline in both groups 15-19 and 45-49 years old.

The result of applying the Bongaarts model to the data of the National Family Health Survey 2002, and the Multiple Indicator Cluster Survey conducted in the year 2012-2013 and 2019 also showed that the use of contraceptives is the most important factor in determining the level of marital fertility during the period 2002-2013.

VI : Footnotes

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