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Trends of Fertility Levels in Egypt in Recent Years

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Executive Summary

This study aims to identify changes in fertility rates in Egypt during the period between 2006-2018 at the national, regional and governorates levels. It relied on data compiled from the E-vital registration system implemented in collaboration between the Ministry of Planning, Monitoring and Administrative Reform and the Ministry of Health and Population. The system data was made available in April 2017 through the National Digital E-System, which is supervised and managed by the Ministry of Planning.

Fertility levels are the main determinant of population growth. Since 2006, fertility levels in Egypt were on an upward trend, reaching its highest level in 2014 at 3.5 child per woman. Fertility levels decreased at a slow pace in 2017 (3.4) compared to 2014, but saw a sharp decrease in 2018, reaching 3.1 child per woman by the end of her reproductive years.

Findings of the study:

- The total fertility rate in Egypt declined from 3.5 in 2014 to 3.4 in 2017 to 3.1 in 2018. The Total fertility rate (TFR) for 2017 slightly decreased by about 3.4%, but significant decline was observed in 2018 where it decreased by about 11.1 % compared to 2014 and by about 8% between 2017 and 2018;
- The 2017 & 2018 estimated TFRs show that 15 governorates achieved lower fertility levels than Egypt's overall fertility level (3.38 and 3.11children per woman respectively) while the other governorates' (12 governorates) are higher than the national level by varying degrees;
- The study indicated that during the period between 2008-2014, high fertility levels were noted for all age groups except women aged 40-44. It also indicated that fertility level increased by 26% during that period for women aged 20-24;
- The 20-29 age group accounts for 57%-58% of the overall fertility levels in 2017 and 2018. In 2018, the 20-24 age group grew to equate the following age group. The fertility rate for girls aged 15-19 remains ≥ 8% in both years, highlighting a current challenge to be addressed;
- In 2018, fertility rates reached 2.75 in urban governorates, compared to 3.52 for Upper Egypt Governorates, 3.93 for border governorates and to 2.88 for Lower Egypt Governorates;
- There is a differentiated decrease in fertility rates between governorates in the period 2014 to 2018. Upper Egypt Governorates witnessed the least level of decline in its fertility level, while Qena remained unchanged;
- Matrouh, Cairo and Alexandria governorates witnessed an increase in fertility rates in 2018 compared to 2014. TFR in Matrouh increased from 4.8 in 2014 to 7.0 in 2018, Alexandria increased from 2.2 to 2.7 and Cairo increased from 2.60 to 2.85 in the same years;
- Port-Said governorate achieved the lowest fertility level reaching around 2 children per woman (below replacement level);
- Comparing TFR of 2018 to 2017, it decreased in all governorates

A close follow-up to these findings is recommended, with specific action points to take forward in 2020 and after, that includes conduction of another study to determine the fertility levels in 2019, to assess whether such declining trend is sustained or not?
Ending the unmet needs for FP in Egypt is considered a major factor for increasing the level of contraceptive prevalence, and for this UNFPA is working hand in hand with the Family Planning and Reproductive Health Sector at Ministry of Health and Population.

Introduction

In Egypt, the successive demographic and health surveys document general decline in fertility since the sixties at a different pace. In 1960s, the average number of children per woman at the end of her reproductive life was estimated at 6.7 children. In 1980s, it declined to 5.3 children and to between 3.9 and 4.1 children in the1990s as per Demographic & Health Survey (DHS), 1992. The decline in fertility rates continued, with 3.5 as an average number of children per woman till the beginning of the third millennium. During the period 2005-2008 it reached 3.0 children per women. However, the 2014 EDHS showed that this downward trend of fertility rates has stopped and the average number of children per woman increased to 3.5 children.

The results of the 2017 Population, Housing and Establishments Census confirmed these changes. The increase in the average annual population growth rate was about 2.56% during the period 2006-2017 in comparison to 2.05% during the period 1996-2006 and 2.08% for the period 1986-1996. This was also reflected in the population broad age structure, where the percentage of the age group below 5 years in 2017 increased to 13.5%, compared to 10.6% in the 2006 census. The percentage of the population below 15 years increased to 34.2% compared to 31.7% in 2006, and the percentage of the population in working age groups (15-64 years) fell to 61.9% compared to 64.6% in 2006, which will also have implications for future population dynamics.

The study of fertility levels is of great importance since it is the main determinant of population growth trends due to the low effects of other factors of population dynamics, namely mortality and permanent international migration.

The results of successive demographic & health surveys confirm the marked decline in child and infant mortality levels over the past four decades, which impacted the overall levels of mortality, especially considering the nature of the young age structure of the Egyptian population. In addition, the decline of maternal mortality ratio was also noticeable. On the other hand, permanent international migration is limited, as per the results of the International Migration Survey (2013) that shows the proportion of migrants currently in Europe and the Americas, which can be the basis for permanent migration, is only 4% of the overall migrants.

This paper aims to identify the changes in fertility levels in Egypt during the period 2006 - 2018 at the national, regional, and governorates levels based on recent available data.

Estimation of Fertility Levels at the National Level

The decline in fertility rates began in 1960s and continued until 2006. The decline was rapid between mid-1980s and mid-1990s, however, it continued at a slower pace from the beginning of the millennium. The 2014 DHS confirmed an upward trend in fertility rates, which represents a setback to the long-term trends of decline in both rates of fertility and in population growth that were observed in previous periods, where the average number of children rose to 3.5 children per woman at the end of her reproductive life.

Table (1) shows the development of fertility rates by place (Urban/rural) and area of residence during the period 1988-2014. It indicates the continuous decline in fertility rates during the period 1988-2008 by 22.9% in Urban areas versus 40.7% in rural areas. The situation was reversed during the period 2008-2014, where Urban fertility rates increased by 7.4% compared with an increase of 18.8% in rural areas.

TABLE 1: TOTAL FERTILITY RATES (PER WOMAN) BY PLACE OF RESIDENCE (URBAN/RURAL) & AREA OF RESIDENCE, EGYPT (1988- 2014)

	Egypt's Demographic & Health Survey						
Residence	1988	1992	1995	2000	2005	2008	2014
Referral Period	86 - 88	90 -92	93 - 95	97-2000	2003- 05	2005- 08	2011-14
***Place of Residence* (Urban/Rural)**							
Urban	3.5	2.9	3.0	3.1	2.7	2.7	2.9
Rural	5.4	4.9	4.2	3.9	3.4	3.2	3.8
Area of Residence							
Urban Governorates	3.0	2.7	2.8	2.9	2.5	2.6	2.5
Lower Egypt	4.5	3.7	3.2	3.2	2.9	2.9	3.4
Urban	3.8	2.8	2.7	3.1	2.7	2.6	3.0
Rural	4.7	4.1	3.5	3.3	3.0	3.0	3.6
Upper Egypt	5.4	5.2	4.7	4.2	3.7	3.4	3.8
Urban	4.2	3.6	3.8	3.4	3.1	3.0	3.2
Rural	6.2	6.0	5.2	4.7	3.9	3.6	4.1
Border Governorates	….	…..	4.1	3.9	3.3	3.2	3.9
Overall	4.4	3.9	3.6	3.5	3.1	3.0	3.5

Source: 2014 Egypt Demographic &Health Survey - P.45

Based on above indicators, it is noticeable that fertility rates increased for all residence areas, except for Urban governorates, where the total fertility rate dropped to 2.5 children per woman in 2014, compared to 2.6 children in 2008. Data indicate that fertility rates increased by 17.2% in Lower Egypt compared to 11.8% in Upper Egypt. In 2014, the significant increase was observed in rural Lower Egypt, at about 20% (from 3.0 to 3.6 children per woman during the same period) followed by rural Upper Egypt and border governorates.

In general, available data indicate that since the beginning of the millennium, a slow down is observed in the decline of fertility rates. As of 2006, an upward fertility trend is recorded reaching its highest level in 2014, before declining again in 2015 with an accelerated pace in 2018 (Table 2). This decline will have its implications on the population status, and the question of maintaining these declining fertility trends.

TABLE 2: INDICATORS OF BIRTH AND FERTILITY LEVELS FOR 2005-2018

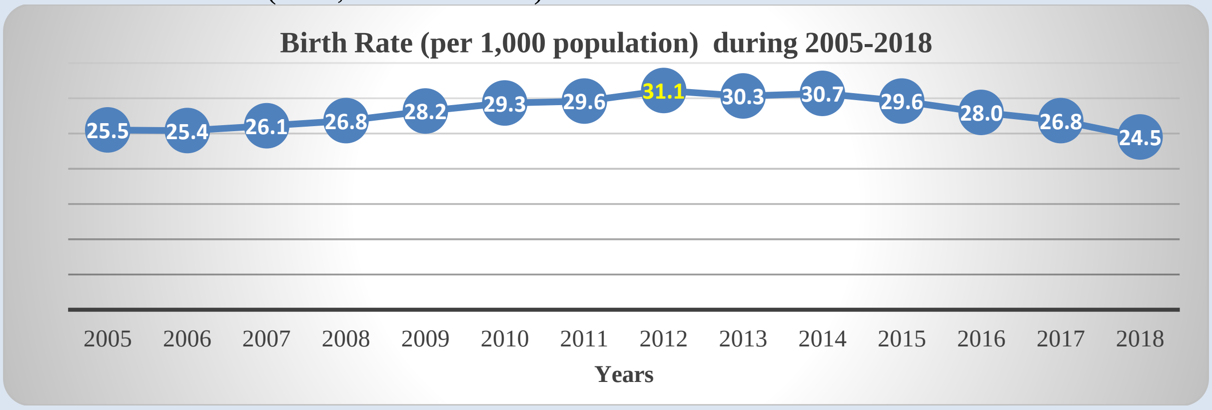
Years	Number of births (000)	Birth rate (per 1,000 population)[3]	General fertility rate (15-49)[4] per 1,000 women	Years	Number of births (000)	Birth rate (per 1,000 population)	General fertility rate (15-49) per 1,000 women
2005	1801	25.5	….	2012	2630	31.1	119.8
2006	1854	25.4	93.7	2013	2622	30.3	117.6
2007	1950	26.1	96.5	2014	2720	30.7	120.2
2008	2051	26.8	99.6	2015	2685	29.6	117.0
2009	2217	28.2	105.9	2016	2600	28.0	111.9
2010	2261	29.3	105.2	2017	2557	26.8	108.2
2011	2442	29.6	113.0	2018	2382	24.5	99.2

The estimates of the general fertility rate confirm the upward trend in fertility levels since 2006, increasing continuously from 93.7 births per 1,000 women of childbearing age (15-49 years), to about 99.6 births in 2008 and to 106.2 births in 2010; rising to their highest levels in 2014 (120.2 births per 1,000 women of childbearing age), up by about 27 births per 1,000 women (15-49 years) during the period 2006-2014. By 2015, the decline in the value of the general fertility rate was recorded at 117.0 births per 1,000 woman and continued to decline thereafter to 107.8 births in 2017 and 99.2 births per 1,000 women of childbearing age (15-49) in 2018, with a decrease of about 17.5% during the period 2014-2018 and about 7.9% between 2017 and 2018.

[3] Source: Number of births on modified population number for the period 2006-2016 - Central Agency for Public Mobilization and Statistics
[4] Source: Number of births on modified number of women at childbearing age - Central Agency for Public Mobilization and Statistics

Considering the estimates of the birth rate (Figure 1), it is also noted that it reflects the same trends and indicates that it reached its highest level in 2012 (31.1 births per thousand population) and decreased continuously during the following years to reach its value of about 26.8 per thousand population in 2017 and to about 24.5 per thousand population in 2018. The number of births decreased by 12.4% during the period 2014-2018 (from 2.72 million in 2014 to 2.38 million in 2018), and the decline in the number of births during 2017/2018 to about 6.8% (decrease of 175 thousand births from 2.55 million to 2.38 million), which was also reflected on the rates of annual natural increase which decreased from 2.52% in 2014 to 1.87% in 2018 (Central Agency for Public Mobilization and Statistics/CAPMAS, Egypt in figures, March 2019).

FIGURE 1 BIRTH RATE (PER 1,000 POPULATION) DURING 2005-2018



Source: Number of births on modified population number for the period 2006-2016, Central Agency for Public Mobilization and Statistics

Methodology for Estimating the Total Fertility Rate

In the framework of studying and validating these changes in fertility trends, this study utilized data of the electronic vital registration system[5]. It optimized the use of data collected from the birth registration system implemented in collaboration between with the Ministry of Planning, Monitoring and Administrative Reform and the Ministry of Health and Population. The system data was made available in April 2017 through the National Digital E-System, which is supervised and managed by the Ministry of Planning. The system covers the whole country, it provides the distribution of births by five-year age groups of the mother in 2017 and in 2018. These were being used to estimate the age-specific fertility rate as well as the total fertility rate, after processing the data to ensure consistency with the total number of births reported by CAPMAS for these two years. To this end, the following steps were implemented:

1. Compilation of births for mothers under 15 or over 49 completed years with the following or previous categories consecutively, these are limited numbers ranging between 0.05% and 0.03% for 2017 & 2018,
2. Adjusting the total number of registered births in the two years to the published figures by CAPMAS bulletins for these years, due to the trivial difference between them, where the registered births according to the electronic system represent 98.6% in 2018 and about 73.2% in 2017 noting that the system does not cover the whole year,
3. For the two studied years, the distribution of the total number of births by mothers' age groups was obtained through adopting the percentage distribution of births by age of mothers' according to the returns of the electronic registration system.

By completing these steps, the distribution of births by mothers' age-groups, for the 2017 and 2018 was determined (Tables B1 and B2 in the Statistical annex). Egypt population projections (2017-2052)[6] provided the population numbers by age and sex for the two years. The population estimates by age group were used according to the medium assumptions for 2017 and 2018 (Table B4 in the Statistical Appendix) to obtain the number of women in the reproductive age groups for these years (Tables B5

[5] Ministry of Planning, Monitoring and Administrative Reform
[6] Central Agency for Public Mobilization and Statistics (2019). Population Projection for Egypt (2017-2052)

and B6) to calculate the detailed age-specific fertility rates and the total fertility rate, that reflect fertility levels more accurately.

Table (3) presents the estimated measures for the years 2017-2018 compared with similar measures calculated from the demographic and health surveys since the beginning of the millennium. The table shows that the total fertility rate at the beginning of the millennium was 3.5 children per woman at the end of her reproductive life, down to 3.1 children in 2002-2005 and to 3 children in 2005-2008, decreasing by 14.3%, however it started back to increase according to the demographic & health survey of (2014) to the same level as at the beginning of the millennium (3.5 children). The indicators also reflect some changes in the pattern of fertility, especially for 2014, where the peak of the fertility curve has shifted to the age-group (20-24) instead of the following category (25-29) observed during previous periods (Figure 2).

The total fertility rates' estimates for recent years indicate a very limited reduction in the fertility level for 2017 (3.4 children) compared with the results of 2014 and a clear decline in the fertility rate for 2018, which reached 3.1 children per woman, a decline of 11.1% compared to the estimates of the demographic & health survey (2014) , while at the same time pointing out to the early fertility pattern, which reflects the concentration of childbearing mainly in the age groups (20-29), followed directly by the age group (30-34), while the contribution of the age group (45-49) to fertility level continues to decline.

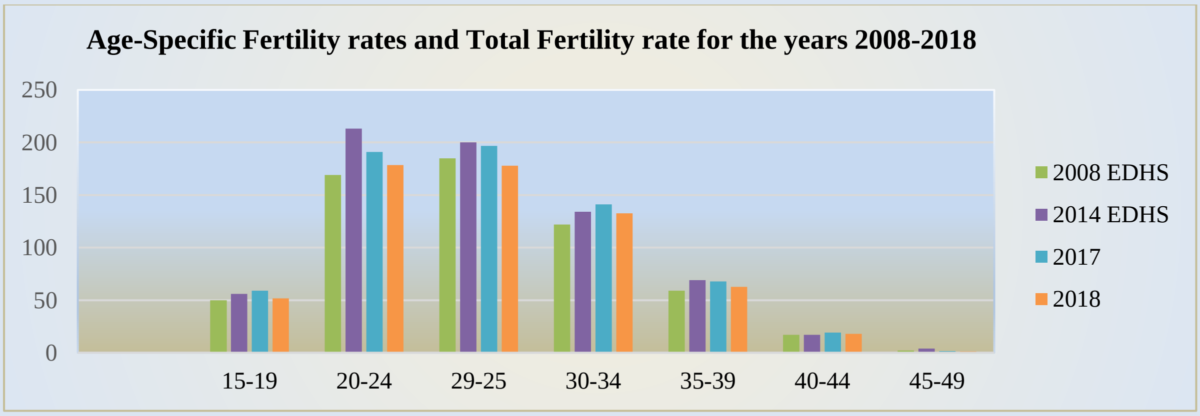
TABLE 3 : AGE-SPECIFIC FERTILITY RATES AND TOTAL FERTILITY RATE FOR THE YEARS 2000-2018

Age Categories	2000 EDHS	2005 EDHS	2008 EDHS	2014 EDHS	2017	2018
	1997-2000	2002-2005	2005-2008	2011-2014	2017	2018
15-19	51	48	50	56	59.0	51.8
20-24	196	175	169	213	190.8	178.4
29-25	208	194	185	200	196.7	177.9
30-34	147	125	122	134	141.2	132.6
35-39	75	63	59	69	67.8	62.6
40-44	24	19	17	17	19.1	17.8
45-49	4	2	2	4	1.4	1.3
Total Fertility Rate	**3.5**	**3.1**	**3.0**	**3.5**	**3.38**	**3.11**

Source: 1) Egypt Demographic Health Surveys 2) 2017 & 2018 are Author's calculations

Table (3) and Figure (2) reflect the pattern of fertility and its development during the time periods shown (2008-2018). It indicates that during the period 2008-2014, high fertility levels were noted for all age groups except women in the age groups (40-44), and the fertility pattern was shifted toward the age group (20-24) where its fertility level increased by 26% during the period, and the fertility level of the next category increased by about 8%, which confirms that fertility in 2014 became more concentrated in age groups below 30 years and contributes about 65.7% of overall births. On this basis, women in 2014 will have about 2.3 children at the age of 30 years.

FIGURE 2: AGE-SPECIFIC FERTILITY RATES AND TOTAL FERTILITY RATE FOR THE YEARS 2008-2018



Source: ASFR presented in Table 3 above

Although the total fertility rate of 2018 (3.11 children) have declined, the early pattern of fertility is still evident. The peak of the fertility curve is becoming broader and includes the categories (20-29 years). These two age-groups accounts for 57% of the overall fertility level of this year. At the age of 30, women will have two children, a decline of about 8.6% from 2017 and about 13% compared to what was seen in 2014. It is noted that these limited changes in the pattern of fertility led to a limited reduction in the value of the median age of women at childbearing, which decreased from about 27.3 in 2017 to about 27 years in 2018.

Methodology for Projecting Females by age group for 2017 and 2018

The estimation of fertility indicators by Areas of residence/Governorates requires the distribution of births according to the age of the mother. These data can be obtained by compiling the data in the birth tables including the corrected distribution of births by mother's age in the statistical annex (Tables B1 & B2). Moreover, it requires estimates of the number of females in the reproductive age groups by mid-years 2017 and 2018, so that the levels of fertility can be estimated for different geographical distributions. The estimated number of females in the years under study was based on the returns of the general Population, Housing and Establishments census on 18/4/2017, which provided the distribution of the population by age and sex groups for each governorate (Table 1-2)[7], in addition to the future population projection by age and sex for total Egypt, which was previously used to predict fertility indicators at the national level, on the basis of the medium assumption for these years. These estimates of the number of females by age-groups were obtained based on the following steps:

1) For each Governorate, considering the population distribution by the five-year age and sex groups according to the results of the census on 18/4/2017, the starting point in this process that aims to obtain governorate estimates of the population according to age and gender;

2) For each five-year age group of the population distribution in the previous step (from the category of less than 5 years to 65+), the percentage population of each governorate from the overall national population of this age group, was estimated separately for both males and females and for overall Egypt;

3) The overall national population projections for the years of 2017 and 2018 (medium assumption), which provided data on the distribution of population by age and sex in these years, were used to obtain the distribution of the population by age and sex for each governorate by dividing the overall national number of individuals estimated for each age group on the governorates according to the respective percentages of its share from the overall population projected for this age-group, based on the results of the census on 18/4/2017, which were calculated in the previous step;

4) The overall population in each governorate, as well as the overall number of males and females, were estimated by aggregating the estimated population of each age group, separately for males, females, and total, to ensure consistency of the results of these estimates at the governorate level with the projected population (medium assumption) for overall Egypt population by age and sex for the years 2017 and 2018,

5) The estimation of the number of females in the reproductive age groups was obtained through the results of the previous step (Tables B5 and B6 in the Statistical Appendix).

This methodology ensures consistency between the population estimates for both males and females and their totals, at the governorate level, and population projections for the overall republic, which is essential to ensure comparability between the indicators calculated at different levels. It also takes into account the limited treatment of the 2017 census. At the same time, this methodology excluded the reliance on population growth rates for the period 2006-2017 which have problems in some governorates as a result of changes in the administrative boundaries (Qena and Luxor governorates), as well as the change in the methodology of the 2017 population census to be based on the place of usual residence (De Jure Approach) instead of counting population according to their actual presence place during the enumeration period (De Facto Approach), which was applied in all previous censuses, and would affect the population size of some governorates such as South Sinai.

[7] Central Agency for Public Mobilization and Statistics (December 2017). Census of Population, Housing and Establishments 2017, p.34

Estimation of Fertility levels by areas of Residence

The birth rate and the general fertility rate estimates show different levels by area of residence, where the border governorate area record the highest levels for the two indicators in both years, as shown in Table (4), followed by Upper Egypt and Lower Egypt to the lowest levels in Urban governorates.

Comparison of the general fertility rates of different regions in the two years indicates that fertility levels in all regions declined in 2018 compared with 2017. However, the levels of decline differ from one region to another, with the highest percentage decline in the border governorates (9.5%), followed by the Urban governorates and Lower Egypt (9%) while the lowest percentage of decline was in Upper Egypt (7.5%). In general, 2017 data indicate that the share of Upper Egypt in the overall fertility rate is about 46 children per 1000 women of childbearing age and that the share of Lower Egypt Governorates is about 43 children, while the share of Urban governorates is 17 children and the share of border governorates is two children (Table 4a).

The different areas of residence retain the same order in 2018, but their contribution to the national fertility level is reduced as a result of the low levels of fertility of this year. The data indicate that the contribution of Upper Egypt has decreased to 43 children, as well as decreased contribution of the Lower Egypt Governorates to 39 children and the Urban governorates to 15 children, while the contribution of border governorates continued to be only two children.

TABLE 4: BIRTH RATES AND GENERAL FERTILITY RATES BY AREA OF RESIDENCE FOR THE YEARS 2017 & 2018

Area of Residence	2017		2018	
	Birth rate	General Fertility Rate	Birth rate	General Fertility Rate
Total Egypt	26.74	108.23	24.43	99.16
Urban Governorates	24.10	93.28	21.85	84.89
Lower Egypt	24.81	100.63	22.50	91.54
Upper Egypt	29.81	122.81	27.51	113.65
Border Governorates	33.97	137.81	30.69	124.73

Source: Author's estimates

Table 4a: Contribution of Residence Areas to the Number of Births based on the General Fertility rate, 2017 & 2018

Areas of Residence	2017			2018		
	# of births	# of births per region according to general Fertility rate	Proportion of area to the overall % of Egypt	# of births	# of births per region according to general Fertility rate	Proportion of area to the overall % of Egypt
Total Egypt	2,552,918	108.23	100.00	2,382,257	99.16	100.00
Urban Governorates	393,222	16.67	15.40	364,723	15.18	15.31
Lower Egypt	1,022,267	43.34	40.04	947,328	39.43	39.77
Upper Egypt	1,083,503	45.93	42.44	1,020,487	42.48	42.84
Border Governorates	53,926	2.29	2.11	49,719	2.07	2.09

Source: Author's estimates

Estimates of detailed fertility rates by age of mother and the total fertility rate are obtained based on the relevant data (Tables B7-B10 in the Statistical Annex), to provide a more accurate indication of the fertility levels of the different areas of residence. Tables (5) and (6) present these indicators for the two years under study. According to these estimates, the levels of fertility by area of residence vary from 3 children per woman at the end of their reproductive life in the Urban governorates and 4.32 for women in the border governorates, while the level of fertility is 3.15 children per woman in Lower Egypt and is increased to 3.79 children per woman in Upper Egypt.

TABLE 5: AGE-SPECIFIC FERTILITY RATES, TOTAL FERTILITY RATE, & MEDIAN AGE OF CHILDBEARING FOR WOMEN BY AREA OF RESIDENCE (2017)

Areas of Residence	Age-Specific Fertility Rates							2017 Total Fertility Rate	Median age of women at childbearing[8]	2014 Total Fertility Rate
	15-19	20-24	25-29	30-34	35-39	40-45	45-49			
Total Egypt	58.59	190.29	196.99	141.57	68.14	19.20	1.40	3.38	27.26	3.5
Urban Governorates	29.40	125.17	193.94	153.35	78.21	19.44	1.19	3.00	28.76	2.5
Lower Egypt	64.95	200.71	181.98	115.62	52.04	13.91	0.96	3.15	26.36	3.4
Upper Egypt	62.94	207.08	213.10	166.20	81.29	25.12	2.02	3.79	27.55	3.8
Border Governorates	75.59	233.90	238.23	175.11	104.53	35.01	2.50	4.32	27.58	3.9

Source: Author's estimates

The comparison of fertility levels with the relevant results of the 2014 Demographic & Health Survey by areas of residence indicate that although the total fertility rate has slightly declined, fertility levels have exceeded the values recorded in 2014 in Urban and border governorates, while Upper Egypt has recorded the same fertility level estimated for 2014 (3.8 children per woman). It was noted that the Urban governorates recorded the highest levels of increase, reaching about 20% (from 2.5 children to 3.0 children), followed by the border governorates which increased by 10.8%, while Lower Egypt governorates showed a decline in fertility rates by 7.4% during the period 2014 - 2017.

In 2018, fertility rates were lower for all regions compared with 2017, reaching 2.75 children per woman in Urban governorates and slightly higher to 2.88 children per woman in Lower Egypt and 3.52 to 3.93 children per woman for both Upper Egypt and border governorates respectively. The percentage of decline varies from one region to another as the data indicate the highest percentage of decline in the border governorates (9%), followed by Urban and Lower Egypt governorates (8.3% and 8.6%, respectively), while the lowest percentage decline of about 7.1% is shown by Upper Egypt region.

The pattern of Fertility during these years is maintained as is customary in Egypt, which is illustrated in Figure 2, but the early pattern of fertility appears more pronounced in the Lower Egypt region where the peak of the curve is in the age group (20-24). The median age of women at childbearing is lower (26.4 years). In contrast, the relatively late pattern of fertility appears in Urban governorates where the median age is 28.8 - 28.9 years. On the other hand, the peak of the fertility curve appears to be wide for Upper Egypt and border regions, where the age-specific fertility rates for the age groups in their twenties are close.

TABLE 6: AGE-SPECIFIC FERTILITY RATES, TOTAL FERTILITY RATE AND MEDIAN AGE OF WOMAN AT CHILDBEARING BY AREA OF RESIDENCE (2018)

Area of Residence	Age-Specific Fertility Rates							2018 Total Fertility Rate	Median age of women at Childbearing
	15-19	20-24	25-29	30-34	35-39	40-45	45-49		
Total Egypt	51.44	177.77	178.11	133.03	62.96	17.89	1.27	3.11	27.03
Urban Governorates	26.39	113.75	172.79	143.05	73.23	18.95	1.06	2.75	28.89
Lower Egypt	57.25	186.37	163.07	108.07	47.70	13.08	0.80	2.88	26.37
Upper Egypt	54.58	196.51	195.57	157.42	75.14	22.88	1.89	3.52	27.58
Border Governorates	71.56	208.18	211.91	164.39	95.90	30.38	3.03	3.93	27.66

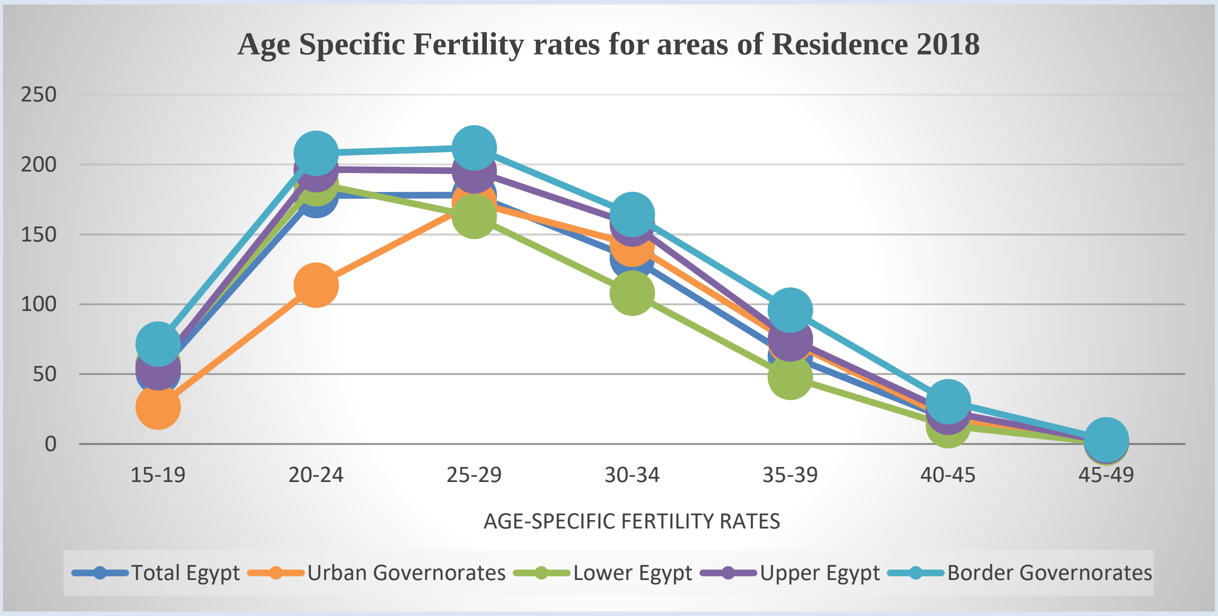
Source: Author's estimates

[8] Median age of women at childbearing is the age that divides the reproductive range of women when they have their children into two equal parts, if they proceed with their reproductive life based on the prevailing age-specific fertility rates during the study period, and it is not affected by extreme values.

It is possible to identify the nature of the fertility pattern of the different regions during the 2017 and 2018 years by specifying the level of fertility achieved until a specific age. Data indicate that about 42.2% of the overall fertility of women in Lower Egypt was achieved by age 25 years compared to about 35.6% 35.8% for Upper Egypt and Borders governorates and only 25.7% for Urban governorates. Similarly, data show that about 71% of overall female fertility for Lower Egypt is achieved by the age of 30 years, reflecting the early pattern of fertility in this region compared to other regions.

Figure (3) displays the variations of the fertility pattern in the various areas of residence for 2018, showing the delayed fertility pattern of the Urban governorates where the peak of the curve is at the age-group (25-29 year). Other regions, however, reach the top of the curve in the age group (20-24), with some clear differences between them in the pattern of fertility. The governorates of Upper Egypt and the borders share a fertility pattern, characterized by a wide peak, while the pattern of Lower Egypt's governorates is characterized by early pattern of fertility, which reaches the peak of the curve in the (20-24) category and decreases thereafter.

FIGURE 3: AGE SPECIFIC FERTILITY RATES FOR AREAS OF RESIDENCE 2018



Source: Table 6 above

The data (see Table 7) indicates that Upper Egypt's governorates contribute the largest percentage of the annual number of births, reaching about 42.4% - 42.8% in 2017 and 2018, respectively, while the population percentage of this region is only about 38.1% Similarly, for the region of border governorates, it was noted that its percentage share of births is high compared to its share of the population. By contrast, the contribution of Urban governorates and Lower Egypt regions to births is lower compared to their share of the population.

TABLE 7: POPULATION AND BIRTH PERCENTAGES BY AREA OF RESIDENCE IN THE YEARS 2017 & 2018

Area of Residence	2017		2018	
	% of populations to total Egypt	Percentage of Birth %	% of populations to total Egypt	Percentage of Birth %
Urban Governorates	17.09	15.40	17.12	15.31
Lower Egypt	43.17	40.04	43.17	39.77
Upper Egypt	38.08	42.44	38.05	42.84
Border Governorates	1.66	2.11	1.66	2.09

Estimation of Fertility Levels for Planning Regions

Egypt is divided into seven planning regions, each with a number of governorates. It is important to follow the demographic developments of each region and to identify the changes that have occurred in recent years. The composition of these regions are as follows:

- **Greater Cairo**: Includes 3 governorates: Cairo, Giza and Qalyubia;
- **Alexandria and the Northern coast**: Include 3 governorates: Alexandria, Matrouh and Beheira.
- **Delta**: includes 5 governorates: Gharbia, Monofia, Kafr El Sheikh, Dakahlia and Damietta.
- **Canal area**: includes 6 governorates: Suez, Port Said, Ismailia, Sharqia, North and South Sinai.
- **North Upper Egypt**: Includes 3 governorates: Beni Suef, Fayoum and Menia.
- **Middle Upper Egypt**: includes two governorates: Wadi Gedid and Asyut.
- **South Upper Egypt**: includes five governorates: Sohag, Qena, Luxor, Aswan and the Red Sea.

Table 8 presents estimate of the birth rate and general fertility rate of these regions in 2017 and 2018. It shows that the overall birth rate for Delta and Greater Cairo regions and the canal were at their lowest level in 2017, 24.2, 24.3 and 24.8 births per thousand population, respectively, and increased to 27.0 births for Alexandria and the northern coast and between 30.6, 33.0 and 31.2 births per thousand population for the northern, middle and southern Upper Egypt. The data for 2018 indicate that despite the decline in the overall birth rate of all regions, they still reflect the same order observed in 2017.

The general fertility rate confirms the clear discrepancy trend in 2018 compared to 2017, with the lowest in Greater Cairo, 87.1 children per 1,000 women of childbearing age, rising to 89.6 children in the delta region and 92.4 births for the Canal region, 98.5 births for Alexandria and the northern coast. The three Upper Egypt regions still have the highest levels of general fertility rate of 118.9, 128.4 and 118.0 births per 1,000 women in North, Middle and Southern Upper Egypt, respectively. The data also indicate a difference in the level of decline in the values of the general fertility rate between 2017 and 2018, with percentages of decline throughout the region between 8.5 - 9.3% except for the middle and southern Upper Egypt, which decreased by 5.5% and 7.4%, respectively.

TABLE 8: BIRTH AND GENERAL FERTILITY RATES FOR THE PLANNING REGIONS FIN 2017 AND 2018

Planning Regions	Overall Birth Rate		General Fertility Rate	
	2017	2018	2017	2018
Total Egypt	26.74	24.43	108.23	99.16
Greater Cairo	24.29	22.17	95.23	87.14
Alexandria & Northern Coast	27.04	24.46	108.54	98.48
Delta	24.24	21.99	98.47	89.59
Canal Region	24.84	22.64	101.02	92.36
Northern Upper Egypt	30.66	27.96	129.94	118.86
Central Upper Egypt	32.97	31.05	135.92	128.42
Southern Upper Egypt	31.19	28.81	127.36	117.99

Source: Author's estimates

Available data provided the distribution of births by mother's age, as well as the estimated number of females according to the five-year age groups of the reproductive span for the planning regions (Tables B11-B14). Thus, the detailed age specific fertility rates and the total fertility rate for these regions were estimated d for 2017 and 2018, and the results are shown in Tables 9 and 10.

Table 9 shows the difference in fertility levels by planning regions. The total fertility rate in the Greater Cairo region is lowest, 3 children per woman at the end of their reproductive life, and 3.1 children per woman in the Delta and Canal regions and about 3.4 children in the Alexandria Region and Northern Coast, however it reaches its highest levels in the Upper Egypt regions where it reach its upper level for the Middle Upper Egypt Region (4.3 children per woman), slightly less than 4 children in the South Upper Egypt region and 3.9 children in the Northern Upper Egypt region.

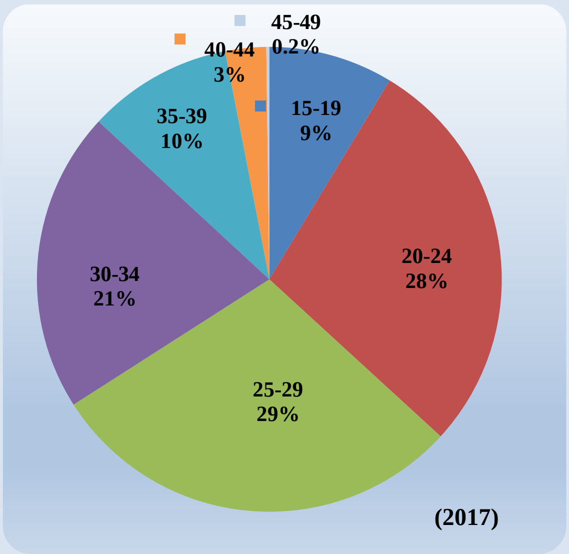
TABLE 9: AGE-SPECIFIC FERTILITY RATES, TOTAL FERTILITY RATE AND MEDIAN AGE AT CHILDBEARING BY PLANNING REGIONS (2017)

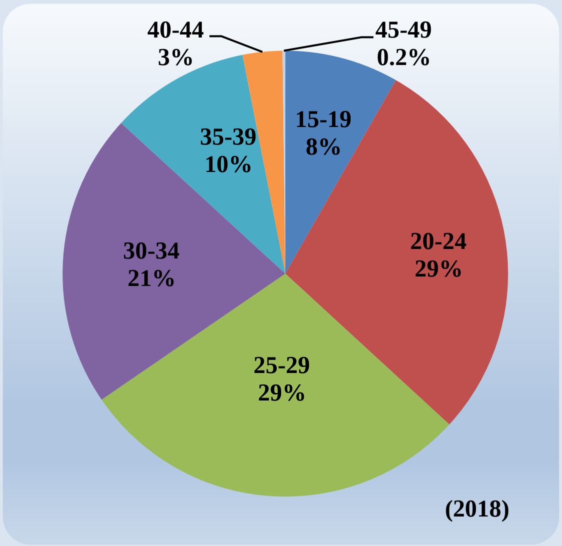
Regions Age Group	Age-Specific Fertility Rates							Total Fertility Rate	Median age of Mothers'
	15-19	20-24	25-29	30-34	35-39	40-45	45-49		
Total Egypt	58.59	190.29	196.99	141.57	68.14	19.20	1.40	3.38	27.26
Greater Cairo	37.40	149.60	186.28	141.17	70.57	18.16	1.17	3.02	28.09
Alexandria and Northern Coast	71.86	186.89	194.69	137.78	67.08	18.83	1.37	3.39	27.07
Delta	64.25	198.18	181.70	111.66	49.37	12.79	0.79	3.09	26.29
Canal Region	57.82	189.39	181.75	123.54	58.41	16.03	1.08	3.14	26.84
Northern Upper Egypt	85.72	229.50	210.76	158.47	75.15	24.67	2.02	3.93	26.85
Middle Upper Egypt	59.24	226.01	240.68	193.86	96.03	31.54	2.95	4.25	27.91
Southern Upper Egypt	48.75	207.33	229.98	186.42	92.41	28.65	2.30	3.98	28.08

Source: Author's estimates

Finding 1: The age groups (20-29) account for 57-58% of the overall fertility level of 2017 and 2018. In 2018, the age bracket 20-24 grows to equate the following age bracket. The fertility rate for girls between 15-19 remains less or equal to 9% for 2017, which is a priority to address. Figure (4) demonstrates % distribution of Age-Specific Fertility Rates by Age of Mother

FIGURE 4: % DISTRIBUTION OF AGE-SPECIFIC FERTILITY RATES BY AGE OF MOTHER





The estimates of the total fertility rate for 2018 (Table 10) confirm the declining trend of fertility levels, where the values for all regions are lower than those of 2017. It is also noted that the three regions with lower levels of fertility compared to the national level, namely Greater Cairo, Delta and Canal, have maintained the same position in 2018, and broke down with three children ceiling , reaching a total fertility rate of 2.8 and 2.9 children per woman at the end of their reproductive life, while the level of fertility in Alexandria and the northern coast coincided with the national level (3.1 children per woman). The three Upper Egypt regions continue to achieve the highest levels of fertility (ranging from 3.6 to 4.0 children per woman), although their fertility levels have declined compared to 2017.

TABLE 10: AGE-SPECIFIC FERTILITY RATES, TOTAL FERTILITY RATE AND MEDIAN AGE OF MOTHERS' AT CHILDBEARING BY PLANNING REGIONS (2018)

Planning Regions	Age-Specific Fertility Rates							Total Fertility Rate	Median age of mothers'
	15-19	20-24	25-29	30-34	35-39	40-45	45-49		
Total Egypt	51.44	177.77	178.11	133.03	62.96	17.89	1.27	3.11	27.03
Greater Cairo	33.53	138.37	167.57	131.74	65.49	17.73	1.07	2.78	28.16
Alexandria & Northern Coast	64.77	171.77	171.58	128.94	63.22	17.55	1.20	3.10	27.13
Delta	55.93	183.64	163.44	104.96	45.41	12.18	0.70	2.83	26.33
Canal Region	52.26	176.86	163.33	115.08	53.26	14.88	0.93	2.88	26.81
Northern Upper Egypt	70.35	218.84	192.68	149.14	68.10	21.78	1.97	3.61	26.87
Middle Upper Egypt	54.12	216.32	228.88	183.70	90.94	28.59	2.87	4.03	27.89
Southern Upper Egypt	43.88	195.00	209.98	178.08	84.94	25.67	1.93	3.70	28.12

Source: Author's estimates

Hence, there are variations in the fertility pattern of the planning regions for 2018, which reflects the early pattern in the Northern Upper Egypt, Delta and Canal regions where the fertility curve reaches its peak in the age group (20-24) and gradually decreases thereafter, which is also confirmed by the Median age of women at childbearing (Table 10) with the lowest levels (26.3-26.9 years) for these three regions. In contrast, the broad age fertility pattern is observed for the middle and southern Upper Egypt, which also leads to the increase in the median age at birth (27.9 - 28.1 years), while the usual pattern of fertility is observed for the Greater Cairo, Alexandria and North Coast regions.

It is noted that, while the general fertility rate, at the national level for 2018, is about 99 children per thousand women of childbearing age, the three Upper Egypt Regions contribute 35 children, while the Greater Cairo region contributes 23 children and the Delta region with 19 children, and the Alexandria and the northern coast region with 12 children, and the Canal region at the end of the list with 10 children. The higher levels of fertility in Upper Egypt are evident when comparing the birth percentages with the population percentages of the planning regions presented in Table (11) for the years 2017 and 2018. The increase in birth percentages in the three Upper Egypt regions is evident in comparison to the population percentages, in both years.

TABLE 11: POPULATION & BIRTH PERCENTAGES BY PLANNING REGIONS IN THE YEARS 2017 & 2018

Planning Regions	2017		2018	
	% of populations to total Egypt	Birth Percentage	% of Population to total Egypt	Birth Percentage
Greater Cairo	25.11	22.8	25.12	22.79
Alexandria & Northern Coast	12.41	12.55	12.42	12.43
Delta	21.8	19.76	21.81	19.63
Canal Region	11.07	10.28	11.07	10.26
Northern Upper Egypt	12.91	14.8	12.9	14.76
Middle Upper Egypt	4.88	6.01	4.87	6.19
Southern Upper Egypt	11.83	13.79	11.82	13.94

Estimates of Fertility levels by Governorates

Table (12) presents the overall birth rates and general fertility rates calculated for 2017 and 2018 for all governorates. It indicates that the overall birth rate for 2017 ranges between 19.0 births per thousand population in Port Said and 33.4 births in Asyut, excluding Matrouh governorate, which is showing values outside the prevailing ranges for all indicators in the two years under study [9]. The situation continues in 2018, but at lower levels of birth rate values ranging from 16.4 births per thousand population to 31.6 births in the same governorates (Port Said and Asyut). The data show that 14 governorates achieved birth rates below the national level in 2017 and 2018, while the birth rate in the remaining governorates (13 governorates) exceeds the national average. These governorates are concentrated in Upper Egypt and some border governorates, in addition to Behera and Ismailia from Lower Egypt.

General fertility rates reflect a similar image where it reaches its lowest value in 2017 in Port Said Governorate (75 children per 1,000 women of childbearing age) and rises to its highest level in Asyut governorate, with 138 children per 1000 women, excluding Matrouh Governorate as previously indicated. In this case, it is noted that 15 governorates are below the national general fertility rate level; the same governorates that achieved this in relation to the overall birth rate, besides the Red Sea Governorate, which changed its position. Fertility levels in 12 governorates (including Matrouh) are above the national level and are concentrated, as mentioned earlier, in Upper Egypt and some border governorates, as well as Behara and Ismaylia governorates of Lower Egypt.

TABLE 12: BIRTH RATES & GENERAL FERTILITY RATES BY GOVERNORATES FOR THE YEARS 2017 & 2018

Governorate	Overall Birth Rate		General Fertility Rate	
	2017	2018	2017	2018
Total Egypt	**26.74**	**24.43**	**108.23**	**99.16**
Cairo	24.86	22.52	95.34	86.69
Alexandria	23.65	21.56	92.51	84.63
Port Said	18.96	16.44	75.02	65.35
Suez	22.69	20.76	89.84	82.45
Damietta	23.46	21.10	94.54	85.26
Dakahlia	23.23	21.17	94.33	86.25
Sharkia	24.97	22.95	102.27	94.28
Qalyubia	22.48	20.33	88.82	80.54
Kafr El Shaikh	25.86	23.70	104.60	96.10
Gharbia	23.94	21.50	96.53	86.97
Monofia	25.13	22.76	103.64	94.19
Behaira	27.94	24.90	114.13	101.99
Ismailia	28.16	26.20	114.81	107.03
Giza	24.85	22.97	99.33	92.03
Bani Swaif	30.54	27.95	129.58	118.95
Faiyum	28.79	26.16	124.91	113.81
Menia	31.96	29.15	133.30	121.98
Asyut	33.42	31.56	137.99	130.71
Sohag	32.27	30.22	136.04	127.75
Qena	31.94	29.41	129.09	119.28
Aswan	29.69	26.35	116.00	103.25
Luxor	28.03	25.92	110.34	102.40
Red Sea	26.90	24.18	106.57	96.00
Wadi Gedid	24.71	21.84	99.25	88.01
Matrouh	55.34	53.55	237.43	230.06
Northern Sinai	25.17	19.89	99.85	79.04
Southern Sinai	30.63	27.07	121.94	107.96

Source: Authors estimation based on reported number of births by the E-system & relevant projected population for governorates

In general, the situation is not different in 2018 in terms of governorates' position. However, it is noted that the general fertility rate levels in all governorates declined at a different pace compared to 2017, with the highest drop in North Sinai (20.8%) followed by Port Said (12.5%), While the percentage decline between the two years is at its lowest levels in the governorates of Sohag (6.1%), Asyut (5.3%) and Matrouh (3.1%).

[9] The number of registered births in Matrouh governorate has increased significantly since 2007, as it was noted that their numbers doubled in 2009 compared with the previous year (about 16,000 births versus 8 thousand) and continued to increase to reach 23,339 births in 2018 with an increase of about 40 Compared to 2009.

Table (13) shows the contribution of each governorate to the average number of children born to 1000 women at childbearing age in the year under study (general fertility rate). It is noted that in 2017, Cairo governorate contributed the largest number of births (10 children), followed by Giza (9 children), then Sharqia (8), Menia (7.5), Beheira (7.4), Sohag (6.8) and Asyut (6.3), while the contribution of Port-Said, Suez and Boarder governorates (Except Matrouh) are less than one child within the framework of the general fertility rate for this year.

TABLE 13: NUMBER OF BIRTHS BY GOVERNORATES AND THEIR CONTRIBUTION OF BIRTHS BASED ON THE GENERAL FERTILITY RATE AND THE PERCENTAGE OF TOTAL EGYPT FOR 2017 AND 2018

Governorate	2017			2018		
	Number of Births	Governorate number of births according to the General Fertility rate[10]	% to total[11] Egypt No. of Births	Number of Births	Governorate number of births according to the General Fertility rate	% to total Egypt No. of Births
Total Egypt	**2,552,918**	**108.23**	**100.00%**	**2,382,257**	**99.16**	**100.00%**
Cairo	239,112	10.14	9.37%	221,646	9.23	9.30%
Alexandria	123,126	5.22	4.82%	114,795	4.78	4.82%
Port Said	14,342	0.61	0.56%	12,730	0.53	0.53%
Suez	16,642	0.71	0.65%	15,552	0.65	0.65%
Damietta	35,372	1.50	1.39%	32,502	1.35	1.36%
Dakahlia	151,971	6.44	5.95%	141,575	5.89	5.94%
Sharkia	180,040	7.63	7.05%	169,020	7.04	7.09%
Qalyubia	127,275	5.40	4.99%	117,593	4.89	4.94%
Kafr El Shaikh	87,571	3.71	3.43%	81,977	3.41	3.44%
Gharbia	120,656	5.12	4.73%	110,769	4.61	4.65%
Menofeya	108,855	4.61	4.26%	100,765	4.19	4.23%
Behaira	173,562	7.36	6.80%	158,025	6.58	6.63%
Ismailia	36,965	1.57	1.45%	35,102	1.46	1.47%
Giza	215,765	9.15	8.45%	203,608	8.48	8.55%
Bani Sweif	96,921	4.11	3.80%	90,523	3.77	3.80%
Faiyum	104,160	4.42	4.08%	96,540	4.02	4.05%
Menia	176,829	7.50	6.93%	164,655	6.85	6.91%
Asyut	147,434	6.25	5.78%	142,087	5.91	5.96%
Sohag	161,331	6.84	6.32%	154,153	6.42	6.47%
Qena	101,723	4.31	3.98%	95,653	3.98	4.02%
Aswan	44,052	1.87	1.73%	39,927	1.66	1.68%
Luxor	35,288	1.50	1.38%	33,341	1.39	1.40%
Red Sea	9,732	0.41	0.38%	8,933	0.37	0.37%
Wadi Gedid	6,006	0.25	0.24%	5,428	0.23	0.23%
Matrouh	23,658	1.00	0.93%	23,340	0.97	0.98%
Northern Sinai	11,391	0.48	0.45%	9,186	0.38	0.39%
Southern Sinai	3,139	0.13	0.12%	2,832	0.12	0.12%

The situation is not different in 2018, where the governorates referred to continue to contribute to the large number of births within the general fertility rate but with lower levels due to the decline in fertility levels, which is due to the size of the population of these governorates. In order to validate these important results and their obvious impacts on population policies and programs, the specific fertility rates by mother's age can also be estimated as well as calculating the total fertility rate for different governorates, to eliminate any possible effects of the age structure during the period under study. Access to birth distributions by the five age groups of mothers for each governorate (Tables B1 and B2 in the Appendix) and the estimation of the number of females by age for the years 2017 and 2018 (Tables B5

[10] It is estimated by dividing the number of births for each governorate by the total number of women of childbearing age at the national level (number of women in reproductive age for overall Egypt)

and B6 of the Appendix), allowed the estimation of the specific fertility rates by mother's age and the total fertility rate of each governorate for these years, as shown in Tables (14 & 15).

TABLE 14: AGE-SPECIFIC FERTILITY RATES, TOTAL FERTILITY RATES AND THE MEDIAN AGE OF WOMEN AT CHILDBEARING BY GOVERNORATES FOR THE YEAR 2017

Governorate Age group	Age- Specific Fertility Rates							Total Fertility Rate	Median age at Child-bearing
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
Total Egypt	58.59	190.29	196.99	141.57	68.14	19.20	1.40	3.38	27.26
Cairo	24.89	126.56	204.28	162.87	83.45	19.82	1.22	3.12	28.92
Alexandria	39.49	125.33	185.81	143.59	71.82	19.52	1.24	2.93	28.46
Port Said	27.12	103.58	150.44	115.67	55.27	13.52	0.60	2.33	28.40
Suez	22.45	129.04	168.57	137.39	74.76	19.28	0.91	2.76	28.70
Damietta	56.30	190.95	172.09	112.77	50.13	12.53	1.02	2.98	26.47
Dakahlia	76.06	192.39	169.71	99.34	43.38	11.21	0.59	2.96	25.82
Sharkia	65.67	204.93	179.63	115.98	52.04	13.86	1.08	3.17	26.28
Kaliobeya	42.99	174.11	166.61	111.13	52.21	14.50	0.99	2.81	26.93
Kafr El Sheikh	74.61	213.88	185.39	115.23	52.05	13.13	0.94	3.28	26.06
Gharbiya	54.13	190.31	186.31	113.96	50.44	12.20	0.72	3.04	26.60
Menoufia	52.25	206.31	194.59	124.36	54.81	15.85	1.00	3.25	26.70
El-Behira	90.54	229.48	192.77	124.31	55.36	14.92	1.26	3.54	25.89
Ismailia	52.52	195.55	213.56	156.03	77.89	25.17	1.67	3.61	27.65
Giza	47.33	161.17	179.55	138.07	68.55	18.53	1.21	3.07	27.75
Bani Sweif	81.26	232.12	216.61	154.47	70.08	22.86	1.65	3.90	26.76
Fayoum	100.13	217.26	186.26	145.77	70.31	23.30	2.12	3.73	26.48
Minya	79.08	235.83	223.19	168.90	81.05	26.48	2.16	4.08	27.09
Asyut	60.74	228.05	242.43	196.57	97.62	32.35	3.04	4.30	27.92
Sohag	53.10	233.07	248.13	190.24	94.23	30.09	2.48	4.26	27.81
Qena	53.53	213.61	226.55	188.69	88.56	27.36	2.39	4.00	27.94
Aswan	39.95	163.67	211.74	187.58	100.71	30.33	2.15	3.68	28.88
Luxor	34.88	160.64	201.81	178.57	89.33	24.26	1.38	3.45	28.71
The Red Sea	21.16	150.60	205.01	152.18	80.59	29.52	3.56	3.21	28.65
Wadi Gedid	29.06	182.33	205.95	149.98	72.06	19.72	1.73	3.30	27.89
Matrouh	192.33	378.84	333.81	266.67	194.99	72.97	5.40	7.23	27.27
Northern Sinai	48.70	185.27	191.98	127.79	70.69	17.67	0.00	3.21	27.27
Southern Sinai	39.81	215.70	228.03	157.77	96.22	34.57	4.22	3.88	27.91

The results confirm what was previously referred to when reviewing the overall birth rates and the general fertility rates for the years under study. The estimated values of the total fertility rates point out to the large disparities in the levels of fertility among the governorates, where its value in 2017 varied between 2.33 children per woman at the end of her reproductive life in Port-Said and increased by about 2 children to 4.30 children per woman in Asyut, excluding the governorate of Matrouh, which has a high total fertility rate of about 7.23 children per woman, after reviewing the number of registered births and the estimates of females' population of childbearing age, based on the 2017 Population census results in comparison with 2006 census.

The 2017 total fertility rates show that 15 governorates achieved lower fertility levels than Egypt's overall fertility level (3.38 children per woman) while the other 12 governorates got higher fertility level than the national level by varying degrees (Table 14).

TABLE 15: AGE-SPECIFIC FERTILITY RATES, THE TFR & THE MEDIAN AGE OF WOMEN AT CHILDBEARING BY GOVERNORATES FOR 2018

Governorate Age group	Age- Specific Fertility Rates							Total Fertility Rates	Median age at Child-bearing
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
Total Egypt	51.44	177.77	178.11	133.03	62.96	17.89	1.27	3.11	27.30
Cairo	22.15	114.84	182.85	151.50	77.00	19.64	1.10	2.85	29.03
Alexandria	36.29	115.29	164.44	134.58	69.74	18.29	1.05	2.70	28.60
Port Said	22.46	87.90	130.11	105.73	49.48	12.36	0.65	2.04	28.61
Suez	18.84	116.53	151.60	131.61	70.26	20.74	0.80	2.55	28.95
Damietta	47.04	174.82	157.43	103.21	45.40	11.70	0.58	2.70	26.53
Dakahlia	66.12	181.15	153.31	94.35	39.53	10.37	0.48	2.73	25.83
Sharkia	59.80	194.11	163.15	107.87	47.70	12.84	0.72	2.93	26.20
Kaliobeya	37.45	160.28	149.38	103.51	47.65	13.38	0.78	2.56	26.96
Kafr El Sheikh	66.91	196.97	169.26	112.16	47.04	12.39	0.77	3.03	26.15
Gharbiya	44.68	174.87	165.96	105.85	47.07	12.13	0.82	2.76	26.69
Menoufia	47.54	190.24	173.02	114.95	51.07	15.15	0.89	2.96	26.69
El-Behira	79.76	209.59	167.44	115.04	50.18	14.20	1.03	3.19	25.87
Ismailia	48.26	188.01	195.61	146.54	72.80	22.52	1.89	3.38	27.60
Giza	43.34	152.07	162.80	129.54	64.70	18.22	1.23	2.86	27.78
Bani Sweif	67.76	221.51	197.35	148.03	62.18	19.50	1.68	3.59	26.77
Fayoum	82.84	206.98	169.65	135.49	65.20	20.78	1.90	3.41	26.52
Minya	63.89	224.89	204.85	158.51	73.26	23.61	2.17	3.76	27.12
Asyut	55.49	219.04	231.12	187.12	92.34	29.14	3.02	4.09	27.90
Sohag	48.58	222.35	231.59	184.38	85.37	26.56	2.27	4.01	27.80
Qena	49.23	201.19	203.13	180.67	82.15	23.98	1.87	3.71	27.97
Aswan	31.99	144.55	186.71	172.91	92.79	28.32	1.51	3.29	29.09
Luxor	30.23	151.13	183.74	170.13	84.20	23.67	1.14	3.22	28.83
The Red Sea	18.31	135.09	184.69	139.10	74.82	24.22	3.21	2.90	28.69
Wadi Gedid	26.72	157.98	184.43	128.35	69.79	20.58	0.90	2.94	27.97
Marsa Matrouh	192.27	364.62	321.53	266.64	188.75	61.80	6.67	7.01	27.24
Northern Sinai	40.03	142.27	143.00	113.69	55.68	16.14	1.83	2.56	27.59
Southern Sinai	35.14	183.86	203.17	152.79	81.29	27.80	2.05	3.43	28.05

The estimated indicators for 2018 (Table 15) confirm the same classification, although this year's total fertility rate has fallen to 3.11 children per woman**.** Different governorates can be classified according to the level of the total fertility rate for each of the two years, as follows:

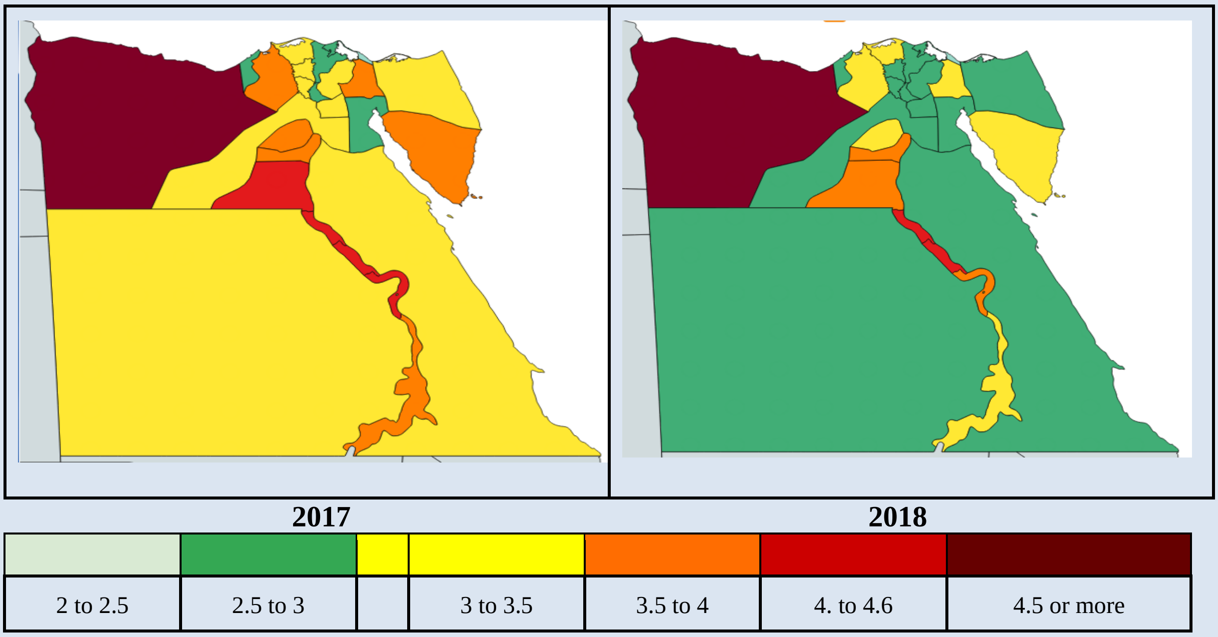
Distribution of Governorates by Total Fertility Categories in 2017-2018

Total Fertility Rate	Number of Governorates 2017	Number of Governorates 2018
2.0 -	1 (Port Said)	1 (Port Said)
2.5 -	5	13
3.0 -	10	7
3.5 -	6	3
4.0 -	4	2
4.5 +	1 (Matrouh)	1 (Matrouh)

Former governorates' classification explains the significant change in fertility levels, as the 2018 indicators show a decrease in the estimated total fertility rate of Port Said Governorate to below the replacement level (2.04 children per woman at the end of her reproductive life). Fertility levels in 13 governorates is below 3 children among which the remaining Urban governorates and Lower Egypt governorates (except Kafr El-Sheikh, Beheira and Ismailia), in addition to Giza governorate and the border governorates except Matrouh and Southern Sinai. The other remaining governorates of Upper Egypt have higher fertility levels that exceed the national level.

Finding 2: Between 2017 and 2018, a noticeable change in classification of governorates according to the level of the total fertility rate is observed (Figure 6)

FIGURE 5: CHANGE IN GOVERNORATES CLASSIFICATION ACCORDING TO TOTAL FERTILITY BETWEEN 2017 & 2018



Further examination of the changes in the fertility levels of the governorates can be carried out through comparing the governorates' estimated total fertility rates obtained from EDHS (2014) and the same indicator estimated for 2017 and 2018 included in Table (16) respectively. Estimates show that while the national fertility level decreased by about 11.1% during this period, it is noteworthy that the fertility levels of Urban governorates increased by about 10% due to the high levels of fertility in Cairo and Alexandria governorates by 9.6% and 22.7% respectively, which may be linked to the previously raised questions about Alexandria's demographics situation and its consistency with its human capital development indicators[12].

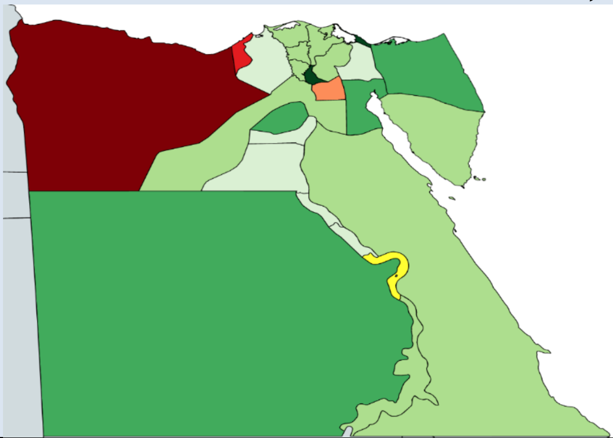
TABLE 16: TOTAL FERTILITY RATES (2014, 2017, AND 2018) AND PERCENTAGE OF CHANGE 2014/2018

Area / Governorate	Total Fertility Rate			% of change 2014-2018	Area / Governorate	Total Fertility Rate			% of change 2014-2018
	2014	2017	2018			2014	2017	2018	
Total Egypt	3.50	3.38	3.11	-11.1%	Upper EGY Gov	3.80	3.79	3.52	-7.4%
Urban Gov.	2.50	3.00	2.75	+10.0%	Giza	3.30	3.07	2.86	-13.3%
Cairo	2.60	3.12	2.85	+09.6%	Bani Sweif	3.90	3.90	3.59	-7.9%
Alexandria	2.20	2.93	2.70	+22.7%	Fayoum	4.60	3.73	3.41	-25.9%
Port Said	3.00	2.33	2.04	-32.0%	Minya	3.90	4.08	3.76	-3.6%
Suez	3.20	2.76	2.55	-20.3%	Asyut	4.20	4.30	4.09	-2.6%
Lower EGY Gov	3.40	3.15	2.88	-15.3%	Sohag	4.30	4.26	4.01	-6.7%
Damietta	3.00	2.98	2.70	-10.0%	Qena	3.70	4.00	3.71	+0.00%
Dakahlia	3.10	2.96	2.73	-11.9%	Aswan	3.60	3.68	3.29	-10.6%
Sharkia	3.60	3.17	2.93	-18.6%	Luxor	3.40	3.45	3.22	-5.3%
Kaliobeya	3.80	2.81	2.56	-32.6%	Border Gov.	3.90	4.32	3.93	+0.00%
Kafr El Sheikh	3.40	3.28	3.03	-10.9%	The Red Sea	3.40	3.21	2.90	-14.7%
El-Gharbia	3.10	3.04	2.76	-11.0%	Wadi Gedid	3.70	3.30	2.94	-20.5%
Menoufia	3.50	3.25	2.96	-15.4%	Matrouh	4.80	7.23	7.01	+46.0%
El-Behira	3.50	3.54	3.19	-8.9%	Northern Sinai	-	3.21	2.56	-20.2%
Ismailia	3.70	3.61	3.38	-8.6%	Southern Sinai	-	3.88	3.43	-11.6%

12 Sayed, Hussein Abdul Aziz (2018). The Demographic Opportunity: The Case of Egypt. Preliminary assessment based on population census data for 2017, United Nations Population Fund, Cairo.

Finding 3: There is a differentiated decrease in fertility rates between 2014 and 2018 (Figure 7). Only three governorates had a differentiated increase: Cairo (orange), Alexandria (red), and Matrouh (dark red). Qena remained unchanged.

FIGURE 6: PERCENTAGE OF CHANGE 2014/2018 IN TOTAL FERTILITY RATES, PER GOVERNORATE



-30% or more	-30% to -20%	-20% to 10%	-10% to 0%	0%	0% to 10%	10% to 20%	20% & more

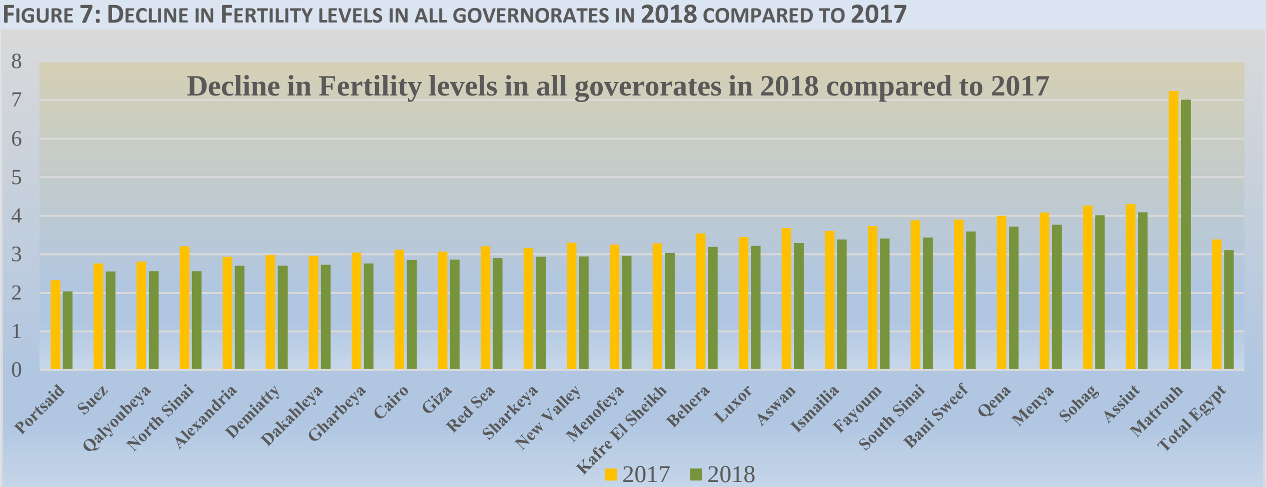
On the other hand, fertility level for Lower Egypt governorates decreased by 15.3% due to the decrease in fertility across all governorates of the region, but at a different pace. Qalyubia governorate witnessed a decrease of (32.6%), Sharkia decreased by (18.6%), and Menoufia (15.4%), as for the rest of Lower Egypt governorates the percentage was 8.6% in Ismailia and 11.9% in Dakahlia.

Upper Egypt Governorates witnessed the least level of decline in its fertility levels with a mere 7.4% only due to the wide-range differences in the decline of fertility of the region's governorates. The fertility level of Fayoum governorate showed a decline of 25.9% while Giza and Aswan governorates showed a decline of 13.3% and 10.6% respectively during the period from 2014-2018. However, it was observed that the governorates of Minya, Assiut, and Luxor showed the lowest percentage decline in its fertility levels while Qena governorate showed no decline.

Despite the lack of variation of fertility levels for the border governorates during the period under study, a decline in fertility levels in all governorates of the region was observed with the exception of Matrouh which witnessed an increase in fertility level of about 46%, which affected the overall area situation.

Finding 4: In 2018, Total Fertility Rates declined in all Governorates compared to 2017 (Figure 8)

FIGURE 7: DECLINE IN FERTILITY LEVELS IN ALL GOVERNORATES IN 2018 COMPARED TO 2017



Conclusion

Multiple indicators were calculated to study fertility levels, particularly the age-specific fertility rates, and total fertility rate. All show a significant decline in fertility level of 2018 where the average number of children per woman, at the end of her reproductive period, dropped to 3.1. This is below the levels shown by the data for 2017 (3.4 children) or with the results of the 2014 DHS which provided fertility indicators for the period (2011- 2014) that amount to about 3.5 children per woman.

The results indicate that at the national level, the 2018 total fertility rate decreased by about 11.1% compared to the findings of the 2014 demographic and health survey and by about 8% when compared to the 2017 estimates while the fertility levels decreased by only 3.4% during the period 2014-2017 which points out to the significant change witnessed in 2018.

The data indicate that early childbearing pattern shown by the 2014 DHS results is still prevailing in recent years with the widening of the peak of the fertility curve which has become concentrated in the (20-29 years) category. This is also indicated by the estimates of median age of women at childbearing, which reached about 27.3 years in 2017 and slightly declined to 27 years in 2018. To be specific, in 2017 a woman at the age of 30 would have about 2.2 children which declined to only 2.0 children in 2018, compared to 2.3 children per woman in 2014 according to EDHS.

In this context, the high-level fertility rate for the age group (15-19) is noticeable, which represents about 8% of the 2018 total fertility rate (compared to 9% in 2017). The specific fertility rate for this age-group in both Lower Egypt and border governorates increases to 9.9% and 9.1% of the total fertility rates of these areas and decreases to about 7.8% in Upper Egypt and reaches its lowest value in Urban governorates (4.8%). This requires expansion of awareness programs supporting delaying pregnancy, especially for the first child who is directly linked with marriage.

Variations in the fertility levels differ according to the place of residence; while the indicators show an increase of fertility levels for Urban governorates by about 10% during the period 2014-2018, due to the increased fertility levels in Cairo and Alexandria governorates , the total fertility rates for Lower Egypt and Upper Egypt show a decline in the fertility levels of up to 15.3% and 7.4% for the two areas respectively with variable pace of change for governorates in each area. Meanwhile the data of the border governorates show no changes in the fertility levels during the period referred to due to the increased fertility level in Matrouh Governorate. Planning regions data show a decline in fertility levels of 2018 compared to 2017 at varying pace that differ from up to about 8.6% for the planning region of Alexandria and the Northern coast and declines to 5.2% for middle Upper Egypt, and ranges for the rest of the planned regions between 7% - 8.4%.

The study of governorates data attests a decline in fertility levels during the period 2014-2018 in 23 governorates at different pace that reached about 32% in Port Said, 26% in Fayoum, 20% in Suez, 19% in Sharkia governorates, and 15% in Menoufia, with lower percentages for the rest of the governorates. At the same time, the data showed no decline in fertility levels during that period in Qena governorate, while it points out to increased fertility levels in three governorates; Cairo (9.6%), Alexandria (23%) and Matrouh (46%), which requires in-depth detailed study of the population dynamics for these governorates in order to identify the reasons behind the demographic changes that are reflecting contradictory trends to the outcomes of the 2014 demographic and health survey, especially for both Cairo and Alexandria.

The noticeable decline in the 2018 fertility level raises multiple questions about its determinants and the factors that have supported this trend so that it can be built upon in the future. However, given the absence of such detailed data, some general observations about the factors that might have contributed in that respect can be elaborated, although there is a need for in -depth studies to determine their actual contribution in this area. These factors are:

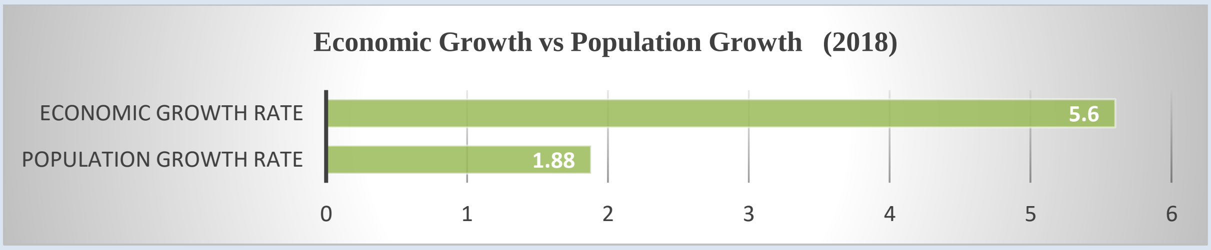
1) Enhancing the efficiency of the national family planning program with its various components (public & private sectors) and its ability to respond to the increasing demand for quality services,

2) The slight decline in overall marriage rates from 10.3 per thousand population in 2016 to 9.6 per thousand in 2017 and the limited change in overall divorce rates from 2.1 per thousand population to about 2.2 per thousand population during the year 2016-2017,
3) Economic and living conditions that followed the implementation of economic reform program and its consequences on families, despite the decline in the unemployment levels and the continuation of the support programs for the needy and marginalized groups,
4) The increasing messages indicating the seriousness of the demographic situation and the negative effects of the accelerated population growth, at the high-level political leadership.

The study results attest the need to focus on the importance of continued support to the population and family planning programs in Upper Egypt to work on reducing fertility levels. Also, the indicators point to the need for attention to both Cairo and Alexandria governorates with an increase in fertility levels, as well as to the governorates of Behira and Ismailia with a decreasing pace in fertility levels.

The decline in fertility levels in 2018 contributed to the decline in the rate of natural increase for this year to about 1.87%[13] while population growth rate for the same period was about 1.88%, which represents a qualitative leap in the study of Egypt's population and development situation. Taking into consideration the economic growth rate achieved recently is about 5.6% (near three times the population growth rate- Figure 9), it opens the door towards improving the living standards and the quality of life of citizens, especially if the current programs succeeded in maintaining the prevailing rates concerning the relationship between population and economic growth rates

FIGURE 8: ECONOMIC GROWTH VS POPULATION GROWTH IN 2018



On the other hand, the continued decline in fertility levels, with the noticeable trend toward increasing investments in human capital development, will enhance Egypt's chances to harness the demographic opportunity and its anticipated returns.

Provision of data on birth distribution by mother's age for the years 2017 and 2018 and the estimate of the number of females in reproductive ages for these years allowed the estimation of accurate fertility indicators at different levels (national, areas of residence, planning region, and governorates), which form the foundation for monitoring and evaluation systems at these levels, and contribute to the identification and development of the required population policies and programs, in accordance with the priorities reflected by the current situation, taking into account differences in the nature of the population situation for the different governorates and areas.

On the other hand, it is important to work on providing these data periodically in order to monitor and evaluate the changes in fertility estimates at different level to assess the success of programs and planned interventions in achieving the specific objectives and to ensure the sustainability of positive changes.

This study was limited to determining the fertility levels and their tendency to decrease at different levels without being able to explain these changes and their determinants, due to the lack of detailed data that require specialized surveys linking fertility levels with social, economic and environmental characteristics.

[13] Central Agency for Public Mobilization and Statistics, Egypt in Figures 2019 p.34

Annex

Table B1: Adjusted Distribution of Births according to Mother's Age and Governorate of Residence in 2017

Ae Group	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Cairo	10,447	53,415	78,843	61,410	28,682	6,001	314	239,112
Alexandria	8,558	28,261	40,516	29,767	12,838	3,026	161	123,126
Port Said	841	3,597	4,822	3,392	1,395	284	11	14,342
Suez	716	4,271	5,488	3,999	1,787	366	14	16,642
Damietta	3,689	11,574	10,455	6,529	2,554	535	36	35,372
Dakahlia	22,405	50,388	42,655	24,878	9,557	1,998	90	151,971
Sharqia	22,375	60,977	50,654	31,077	12,262	2,528	166	180,040
Qalyubia	10,954	38,514	38,149	26,333	10,890	2,313	122	127,275
Kafr El-Sheikh	11,042	29,368	25,109	14,804	5,938	1,233	76	87,571
Gharbiya	11,733	38,633	37,247	22,578	8,666	1,713	86	120,656
Menoufia	10,000	35,451	32,924	20,611	8,007	1,770	94	108,855
Beheira	23,763	55,937	49,265	30,072	11,887	2,465	174	173,562
Ismailia	3,071	10,608	11,139	7,852	3,379	867	48	36,965
Giza	18,240	59,879	65,260	47,617	20,275	4,276	218	215,765
Bani Sweif	12,322	32,282	27,423	16,594	6,642	1,558	99	96,921
Al-Fayoum	17,362	33,664	26,515	17,383	7,385	1,712	139	104,160
Al-Minya	21,735	57,231	49,299	31,456	13,583	3,287	238	176,829
Assiut	13,572	44,769	43,247	29,591	12,698	3,289	267	147,434
Sohag	13,179	49,730	49,392	31,520	13,861	3,403	246	161,331
Qena	8,300	29,856	31,148	21,364	8,841	2,054	161	101,723
Aswan	2,785	10,848	13,575	10,658	4,931	1,180	75	44,052
Luxor	2,053	9,264	11,242	8,311	3,604	775	40	35,288
Red-Sea	302	2,074	3,306	2,630	1,122	275	24	9,732
New Valley	324	1,666	1,853	1,393	621	138	11	6,006
Marsa-Matrouh	3,374	6,909	5,819	4,250	2,540	725	41	23,658
North Sinai	1,073	3,643	3,310	2,034	1,110	222	0	11,391
South-Sinai	179	816	956	694	390	95	9	3,139
Total	**256,212**	**765,582**	**758,606**	**507,451**	**214,274**	**47,835**	**2,957**	**2,552,918**

Table B2: Adjusted Distribution of births by mother's age and governorate in 2018

Age Group	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40-44**	**45-49**	**Total**
Cairo	9,310	49,214	71,120	58,123	27,362	6,228	289	221,646
Alexandria	7,878	26,399	36,135	28,389	12,887	2,967	140	114,795
Port Said	698	3,099	4,203	3,155	1,291	272	12	12,730
Suez	602	3,917	4,974	3,898	1,736	412	13	15,552
Damietta	3,087	10,760	9,639	6,080	2,391	524	21	32,502
Dakahlia	19,507	48,179	38,834	24,042	9,003	1,934	76	141,575
Sharqia	20,410	58,649	46,364	29,412	11,620	2,452	114	169,020
Qalyubia	9,556	36,003	34,470	24,957	10,275	2,235	98	117,593
Kafr El-Sheikh	9,919	27,464	23,103	14,663	5,548	1,218	63	81,977
Gharbiya	9,701	36,048	33,437	21,337	8,361	1,783	101	110,769
Menoufia	9,113	33,195	29,503	19,385	7,713	1,771	86	100,765
Beheira	20,967	51,879	43,124	28,316	11,139	2,456	145	158,025
Ismailia	2,826	10,356	10,282	7,504	3,265	812	56	35,102
Giza	16,731	57,373	59,633	45,458	19,784	4,402	228	203,608
Bani Sweif	10,292	31,283	25,179	16,181	6,093	1,392	104	90,523
Al-Fayoum	14,387	32,567	24,339	16,440	7,080	1,599	128	96,540
Al-Minya	17,588	55,420	45,601	30,038	12,694	3,070	245	164,655
Assiut	12,418	43,664	41,551	28,662	12,418	3,102	272	142,087
Sohag	12,076	48,175	46,458	31,084	12,984	3,146	231	154,153
Qena	7,645	28,556	28,145	20,814	8,480	1,885	129	95,653
Aswan	2,233	9,728	12,064	9,997	4,697	1,154	54	39,927
Luxor	1,783	8,850	10,315	8,057	3,511	791	34	33,341
Red-Sea	262	1,889	3,001	2,446	1,077	237	22	8,933
New Valley	298	1,466	1,672	1,213	622	151	6	5,428
Marsa Mathur	3,378	6,752	5,649	4,324	2,541	643	51	23,340
North Sinai	883	2,841	2,485	1,841	904	212	21	9,186
South-Sinai	159	706	858	684	341	80	4	2,832
Total	**225,218**	**726,844**	**691,259**	**484,900**	**204,665**	**46,647**	**2,724**	**2,382,257**

Table **B3**: Population in the governorates by sex according to the results of the 2017 census

Governorate	Males	Females	Total
Total Egypt	48,891,518	45,907,309	94,798,827
Cairo	4,960,625	4,579,048	9,539,673
Alexandria	2,654,824	2,508,926	5,163,750
Port Said	385,129	364,242	749,371
Suez	374,399	353,781	728,180
Damietta	769,505	727,260	1,496,765
Dakahlia	3,302,847	3,189,534	6,492,381
Sharqia	3,688,761	3,475,063	7,163,824
Qalyubia	2,908,670	2,718,750	5,627,420
Kafr El-Sheikh	1,720,214	1,641,971	3,362,185
Gharbiya	2,555,427	2,444,206	4,999,633
Menoufia	2,219,798	2,081,803	4,301,601
Beheira	3,181,812	2,989,801	6,171,613
Ismailia	673,431	630,562	1,303,993
Giza	4,487,640	4,144,381	8,632,021
Bani Sweif	1,626,567	1,527,533	3,154,100
Al-Fayoum	1,875,592	1,721,362	3,596,954
Al-Minya	2,834,948	2,662,147	5,497,095
Assiut	2,266,684	2,116,605	4,383,289
Sohag	2,569,032	2,398,377	4,967,409
Qena	1,623,352	1,540,929	3,164,281
Aswan	749,400	724,575	1,473,975
Luxor	645,329	604,880	1,250,209
Red-Sea	187,479	172,409	359,888
New Valley	124,057	117,190	241,247
Marsa-Matrouh	223,459	202,165	425,624
North Sinai	229,617	220,711	450,328
South-Sinai	52,920	49,098	102,018

Source: Central Agency for Public Mobilization and Statistics (December 2017). Population, Housing and Establishments Census 2017.

Table B4: Estimation of Egypt Mid-Year Population by 5-year-age-groups & sex for 2017 and 2018 according to the Medium Assumption

Age Group	1-July-2017			1-July-2018		
	Males	Females	Total	Males	Females	Total
0−4	6,621,000	6,335,000	12,956,000	6,628,000	6,343,000	12,971,000
5−9	5,486,000	5,074,000	10,560,000	5,671,000	5,271,000	10,942,000
10−14	4,727,000	4,347,000	9,074,000	4,815,000	4,427,000	9,242,000
15−19	4,697,000	4,342,000	9,039,000	4,715,000	4,349,000	9,064,000
20−24	4,254,000	4,013,000	8,267,000	4,336,000	4,075,000	8,411,000
25−29	4,052,000	3,856,000	7,908,000	4,086,000	3,886,000	7,972,000
30−34	3,781,000	3,594,000	7,375,000	3,843,000	3,657,000	7,500,000
35−39	3,352,000	3,162,000	6,514,000	3,459,000	3,269,000	6,728,000
40−44	2,670,000	2,505,000	5,175,000	2,788,000	2,623,000	5,411,000
45−49	2,295,000	2,116,000	4,411,000	2,344,000	2,165,000	4,509,000
50−54	2,060,000	1,955,000	4,015,000	2,101,000	1,984,000	4,085,000
55−59	1,722,000	1,668,000	3,390,000	1,772,000	1,715,000	3,487,000
60−64	1,423,000	1,410,000	2,833,000	1,471,000	1,459,000	2,930,000
65−69	947,000	955,000	1,902,000	1,019,000	1,031,000	2,050,000
70−74	533,000	539,000	1,072,000	585,000	597,000	1,182,000
75−79	249,000	250,000	499,000	270,000	275,000	545,000
80+	230,000	235,000	465,000	239,000	244,000	483,000
Total	49,099,000	46,356,000	95,455,000	50,142,000	47,370,000	97,512,000

Source: CAPMAS (2019), Future Egypt Population Projections (2017-2052)

Table B5: Estimated Number of Governorates Mid-year (1 / 7/2017) Females by Specific Age-groups according to the Medium Assumption

Governorate	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Total Egypt	**4,342,000**	**4,013,000**	**3,856,000**	**3,594,000**	**3,162,000**	**2,505,000**	**2,116,000**	**23,588,000**
Cairo	419,715	422,037	385,959	377,043	343,717	302,859	256,719	2,508,049
Alexandria	216,722	225,490	218,046	207,303	178,750	154,969	129,689	1,330,969
Port Said	31,013	34,721	32,052	29,328	25,241	21,025	17,801	191,181
Suez	31,894	33,099	32,558	29,107	23,907	18,977	15,698	185,241
Damietta	65,514	60,613	60,753	57,895	50,952	42,732	35,674	374,134
Dakahlia	294,559	261,912	251,346	250,435	220,326	178,214	154,333	1,611,124
Sharqia	340,741	297,545	281,995	267,966	235,651	182,392	154,212	1,760,501
Qalyubia	254,780	221,205	228,968	236,951	208,568	159,525	122,905	1,432,902
Kafr El-Sheikh	148,007	137,309	135,442	128,479	114,091	93,875	80,032	837,234
Gharbiya	216,753	203,000	199,916	198,115	171,805	140,394	119,887	1,249,870
Menoufia	191,396	171,833	169,198	165,731	146,091	111,680	94,349	1,050,278
Beheira	262,455	243,753	255,560	241,908	214,699	165,162	137,198	1,520,736
Ismailia	58,479	54,247	52,159	50,328	43,386	34,422	28,954	321,974
Giza	385,404	371,534	363,470	344,873	295,766	230,756	180,371	2,172,175
Bani Sweif	151,639	139,076	126,601	107,426	94,783	68,161	60,253	747,940
Al-Fayoum	173,397	154,951	142,355	119,244	105,042	73,465	65,425	833,879
Al-Minya	274,839	242,682	220,882	186,238	167,590	124,161	110,199	1,326,592
Assiut	223,439	196,313	178,392	150,539	130,077	101,673	87,978	1,068,411
Sohag	248,162	213,370	199,053	165,686	147,103	113,094	99,453	1,185,920
Qena	155,040	139,773	137,488	113,219	99,835	75,067	67,563	787,985
Aswan	69,710	66,278	64,113	56,819	48,967	38,908	34,977	379,773
Luxor	58,868	57,669	55,703	46,542	40,339	31,920	28,781	319,823
Red-Sea	14,260	13,769	16,125	17,281	13,927	9,329	6,634	91,323
New Valley	11,142	9,138	8,997	9,290	8,615	7,009	6,323	60,514
Marsa-Matrouh	17,542	18,238	17,434	15,938	13,024	9,935	7,532	99,643
North Sinai	22,022	19,663	17,242	15,917	15,695	12,556	10,992	114,087
South-Sinai	4,507	3,784	4,191	4,399	4,054	2,740	2,067	25,742

Table B6: Estimated Number of Governorates Mid-Year (1 /7/ 2018) Females by Specific Age-Groups according to the Medium Assumption

Governorate	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Total Egypt	**4,349,000**	**4,075,000**	**3,886,000**	**3,657,000**	**3,269,000**	**2,623,000**	**2,165,000**	**24,024,000**
Cairo	420,392	428,558	388,962	383,652	355,348	317,125	262,664	2,556,701
Alexandria	217,072	228,974	219,742	210,937	184,799	162,269	132,692	1,356,484
Port Said	31,063	35,257	32,302	29,842	26,095	22,015	18,213	194,787
Suez	31,946	33,610	32,811	29,618	24,716	19,871	16,062	188,634
Damietta	65,620	61,549	61,226	58,910	52,676	44,745	36,500	381,226
Dakahlia	295,034	265,959	253,302	254,825	227,782	186,608	157,906	1,641,416
Sharqia	341,290	302,142	284,189	272,663	243,625	190,984	157,783	1,792,676
Qalyubia	255,191	224,623	230,750	241,104	215,625	167,039	125,751	1,460,083
Kafr El-Sheikh	148,245	139,430	136,496	130,731	117,951	98,297	81,886	853,036
Gharbiya	217,103	206,136	201,471	201,588	177,618	147,008	122,664	1,273,587
Menoufia	191,705	174,488	170,515	168,636	151,034	116,941	96,534	1,069,852
Beheira	262,878	247,519	257,549	246,149	221,965	172,942	140,375	1,549,376
Ismailia	58,573	55,085	52,564	51,210	44,854	36,043	29,625	327,954
Giza	386,025	377,275	366,298	350,918	305,775	241,626	184,548	2,212,465
Bani Sweif	151,884	141,224	127,586	109,309	97,991	71,372	61,648	761,015
Al-Fayoum	173,676	157,345	143,463	121,334	108,597	76,926	66,940	848,281
Al-Minya	275,282	246,432	222,601	189,503	173,261	130,010	112,750	1,349,839
Assiut	223,799	199,346	179,780	153,177	134,479	106,463	90,015	1,087,060
Sohag	248,562	216,666	200,601	168,590	152,081	118,421	101,756	1,206,678
Qena	155,290	141,932	138,558	115,204	103,214	78,603	69,127	801,928
Aswan	69,823	67,302	64,612	57,815	50,624	40,741	35,787	386,704
Luxor	58,963	58,560	56,137	47,358	41,704	33,424	29,448	325,593
Red-Sea	14,283	13,981	16,250	17,584	14,398	9,768	6,788	93,052
New Valley	11,160	9,279	9,067	9,453	8,907	7,339	6,469	61,674
Marsa Matrouh	17,571	18,519	17,569	16,218	13,464	10,403	7,706	101,451
North Sinai	22,057	19,966	17,376	16,196	16,226	13,147	11,247	116,216
South-Sinai	4,515	3,843	4,224	4,476	4,191	2,869	2,115	26,232

Table B7: Distribution of Births by Mother's Age Groups and Area of Residence, Egypt, 2017

Areas of Residence	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Total Egypt	254,392	763,625	759,611	508,797	215,447	48,088	2,959	2,552,918
Urban Governorates	20,561	89,543	129,669	98,568	44,703	9,677	499	393,222
Lower Egypt	119,033	331,450	297,597	184,734	73,140	15,421	892	1,022,267
Upper Egypt	109,546	327,523	317,101	214,494	91,821	21,534	1,483	1,083,503
Border Governorates	5,251	15,108	15,244	11,002	5,782	1,455	84	53,926

Table B8: Distribution of Births by Mother's Age Group and Area of Residence, Egypt, 2018

Areas of Residence	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Total Egypt	223,706	724,432	692,136	486,500	205,818	46,926	2,739	2,382,257
Urban Governorates	18,488	82,629	116,432	93,565	43,277	9,879	453	364,723
Lower Egypt	105,086	312,532	268,756	175,695	69,316	15,184	759	947,328
Upper Egypt	95,153	315,617	293,283	206,731	87,741	20,540	1,422	1,020,487
Border Governorates	4,980	13,654	13,665	10,509	5,484	1,323	104	49,719

Table B9: Estimated Number of Mid-year Females in Childbearing Age by Area of Residence and age for 2017

Areas of Residence	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Total Egypt	4,342,000	4,013,000	3,856,000	3,594,000	3,162,000	2,505,000	2,116,000	23,588,000
Urban Governorates	699,344	715,347	668,615	642,782	571,615	497,830	419,907	4,215,440
Lower Egypt	1,832,684	1,651,416	1,635,338	1,597,808	1,405,567	1,108,396	927,545	10,158,753
Upper Egypt	1,740,498	1,581,646	1,488,059	1,290,585	1,129,504	857,206	735,000	8,822,498
Border Governorates	69,474	64,591	63,988	62,826	55,315	41,568	33,547	391,309

Table B10: Estimated Number of Mid-year Females in Childbearing Age by Area of Residence and Age for 2018

Areas of Residence	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Total Egypt	4,349,000	4,075,000	3,886,000	3,657,000	3,269,000	2,623,000	2,165,000	24,024,000
Urban Governorates	700,472	726,399	673,817	654,049	590,958	521,280	429,631	4,296,606
Lower Egypt	1,835,638	1,676,930	1,648,061	1,625,816	1,453,130	1,160,608	949,024	10,349,208
Upper Egypt	1,743,304	1,606,082	1,499,636	1,313,208	1,167,725	897,586	752,021	8,979,562
Border Governorates	69,586	65,589	64,486	63,927	57,187	43,526	34,324	398,625

Table B11: Distribution of Births by Mother's Age and Planning Regions (2017)

Planning Regions	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Total Egypt	254,392	763,625	759,611	508,797	215,447	48,088	2,959	2,552,918
Cairo	39,640	151,809	182,252	135,360	59,847	12,591	653	582,152
Alexandria & North Coast	35,694	91,107	95,601	64,089	27,265	6,216	375	320,346
Delta	58,869	165,414	148,390	89,399	34,722	7,248	382	504,425
Canal's Region	28,256	83,912	76,369	49,049	20,323	4,362	248	262,519
North Upper Egypt	51,419	123,177	103,237	65,433	27,611	6,557	476	377,910
Middle Upper Egypt	13,896	46,435	45,100	30,984	13,319	3,428	278	153,440
South Upper Egypt	26,618	101,771	108,662	74,483	32,360	7,687	546	352,126

Table B12: Distribution of Births by Mother's Age and Planning Regions (2018)

Planning Regions	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Total Egypt	223,706	724,432	692,136	486,500	205,818	46,926	2,739	2,382,257
Cairo	35,597	142,589	165,224	128,538	57,421	12,865	615	542,847
Alexandria and North Coast	32,224	85,030	84,908	61,029	26,567	6,066	336	296,160
Delta	51,327	155,645	134,516	85,507	33,017	7,230	347	467,588
Canal's Region	25,577	79,569	69,166	46,494	19,157	4,240	219	244,422
North Upper Egypt	42,267	119,270	95,119	62,659	25,867	6,060	476	351,718
Middle Upper Egypt	12,716	45,130	43,223	29,875	13,039	3,253	277	147,515
South Upper Egypt	23,999	97,199	99,982	72,398	30,749	7,212	469	332,007

Table B13: Estimated Number of Mid-year Female by Age and Planning Regions (2017)

Planning Regions	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Total Egypt	4,342,000	4,013,000	3,856,000	3,594,000	3,162,000	2,505,000	2,116,000	23,588,000
Cairo	1,059,899	1,014,777	978,397	958,866	848,051	693,140	559,996	6,113,125
Alexandria & North Coast	496,719	487,481	491,040	465,150	406,473	330,067	274,419	2,951,348
Delta	916,229	834,667	816,656	800,655	703,264	566,895	484,275	5,122,640
Canal's Region	488,656	443,058	420,197	397,046	347,933	272,111	229,724	2,598,725
North Upper Egypt	599,875	536,709	489,839	412,908	367,416	265,788	235,876	2,908,411
Middle Upper Egypt	234,582	205,451	187,389	159,828	138,693	108,682	94,301	1,128,925
South Upper Egypt	546,040	490,858	472,482	399,547	350,171	268,318	237,409	2,764,824

Table B14: Estimated Number of Mid-year Female by Age and Planning Regions (2018)

Planning Regions	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Total Egypt	4,349,000	4,075,000	3,886,000	3,657,000	3,269,000	2,623,000	2,165,000	
Cairo	1,061,607	1,030,455	986,009	975,674	876,748	725,791	572,963	6,229,249
Alexandria & North Coast	497,520	495,012	494,860	473,304	420,228	345,615	280,774	3,007,312
Delta	917,706	847,562	823,010	814,689	727,062	593,599	495,490	5,219,118
Canal's Region	489,444	449,903	423,466	404,006	359,707	284,929	235,044	2,646,499
North Upper Egypt	600,842	545,001	493,650	420,146	379,849	278,308	241,339	2,959,135
Middle Upper Egypt	234,960	208,625	188,847	162,630	143,386	113,802	96,484	1,148,734
South Upper Egypt	546,920	498,442	476,158	406,550	362,020	280,957	242,906	2,813,954