1998 Census: The Results and Implications

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The 1998 Census was the fifth nation-wide census to be held in Pakistan. The earlier censuses were held in 1951, 1961, 1972, and 1981. It was the British colonial administrators who started the tradition of holding nation-wide decennial censuses in the year beginning with digit 1. Regular censuses were held in British India from 1881 to 1941. Pakistan continued with this tradition and conducted its national censuses in 1951 and 1961. The 1971 census was postponed due to civil war leading to the separation of East Pakistan. But it was promptly held in the following year in 1972. The 1981 census was held on time in March 1981, preceded by the Housing Census in December 1980. The present author was the Census Commissioner at that time.

The next census was due in 1991. Adequate preparations were made. It is a standard operation in every census to conduct house listing before the actual detailed inquiry. Enumerators visit all the houses within their block, put a census number on the house, list the house number corresponding with the census number, and ask a broad question on the total number of persons staying in the house and record this number in their registers. These numbers showed absurd exaggeration, with 10 to 12 percent annual growth in many districts. The operation was called off and it was decided to proceed afresh. The delay and postponement led to politicisation of the 1991 census. The importance and need for holding the census was realised but no government was prepared to face census results which sharply changed inter-provincial ratios or rural-urban ratios, as these would have resulted in altering the seats allocated to different provinces in the national Assembly as well as the allocation of development funds allocated on the basis of population. The frequent postponement of censuses by different governments became a domestic and international embarrassment. At long last, the 5th decennial census was held not even in the Golden Jubilee year of 1997 but in the 51st year of national history in March 1998. As this census was held soon after the country celebrated 50 years, it was a very opportune moment to take stock of the demographic development of the past 5 decades and make projections for the future. Demography, after all, plays a very important role not only in the nation's economic development but also in the overall national progress of a country. The following Table 1 gives the population of Pakistan from the beginning of the present century till its end.

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Table 1

Population Size and Rate of Population Growth—Pakistan, 1901–1998

Year	Population (Thousands)	Growth (Annual Growth %)
1901	16576	–
1911	19382	0.6
1921	21109	0.8
1931	23542	1.1
1941	28282	1.9
1947	32500	1.8
1951	33740	1.8
1961	42880	2.4
1972	65309	3.6
1981	84254	3.1
1998	130600	2.6

Source: Census from 1901 to 1998 except population for 1947 which is estimated.

The population growth rate is the difference between aggregate birth and death rates. Without modern medical care, especially on the preventive side, there was a rough balance between the birth and death rates, leading to a growth rate of about 1 percent or less till 1931. The growth rate began to increase from 1941 but remained below 2 percent till 1961. The sharp increase during these 30 years was caused by a drastic fall in death rate as, according to Davis (n.d.), the birth rate did not change much during this period and the increase in population growth rate is attributed entirely to sharp falls in the death rate. Kingsley estimated a birth rate of 35–40 for the pre-independence period.

The results of 1972 census and, to a lesser extent, the 1981 census were challenged by some demographers as in some districts, there was abnormal rate of growth in both these censuses. On the other hand, with every new census, there is better coverage of population, and in the 1981 census every attempt was made not to miss even the huts in remote corners of Pakistan's varied landscape, which ranges from sky-scraping Korakorams to the salty beaches of Balochistan.

The 1998 census shows a different trend. It shows a growth rate of 2.6 percent for a 17-year period, and as the growth rate has decelerated from 3.05 in 1981 to 2.6 in the 1981–98 period, the rate in 1997 is estimated around 2.2 percent. However, if the populations of the 1972 census and the 1981 census were over-enumerations, and if we reduce the 1981 population to 82 million from the 84 million as given, the average inter-censal growth rate for the period 1981 to 1998 comes to about 2.76 instead of 2.61. Hence, the correct position of average annual growth between 1981 to 1998 is between 2.7 to 2.8, specially if we give some margin to the over-enumeration in the 1981 and

1972 censuses. Undoubtedly, the population growth rate has fallen in the 1990s due to the following factors:

(1) The age at marriage has gone up by 1 to 3 years during this period.

(2) There was very effective and explicit campaign over the ratio and television in which the private sector was also associated. Previously reference to condoms was prohibited on media.

(3) The Family Planning Programme got sustained political support by all governments in 1990s. It got higher allocation and above all it got multi-sectoral support from the Social Action Programme which was launched in 1992-93.

(4) The new strategy of lady-health worker going from home to home also proved to be successful.

(5) The 1990s has been a period of low growth with high inflation and the severe economic pinch has induced adoption of family planning.

The different surveys how that 94 percent of the population is aware of population planning and about 60 percent demand it, but the contraceptive prevalence rate even according to the latest surveys is not more than 24. So there is an unmet need of 36 percent population, which a more effective family planning programme can meet.

The real measure of fertility and a more definitive measure of fall in population growth is the behaviour of total fertility rate. The growth rate and the fertility rates of South Asian countries are indicated in Table 2.

Pakistan's total fertility rate is about 50 percent higher than that of India or Bangladesh, and more than double that of Sri Lanka. If the growth rate of Bangladesh and India is 1.6, then Pakistan's population growth rate cannot be less than 2.4 at present. Hence any calculation of a gradual decline between the years 1981 and 1998 to 2.2 in 1998 is contradicted by the still very high TFR of more than 5 in Pakistan. Until these two can be reconciled we have to assume that the current rate of population cannot be less than 2.4.

Literacy

There has been sharp increase in literacy during the 1981–98 period as indicated in the table below:

Table 2

Growth in Literacy

	1981	1998
Total Literacy	26.0	45.0
Male Literacy	35.5	56.5
Female Literacy	16.4	32.6

Source: Population Census Organisation.

However in comparison with India who total literacy rate is more than 50 percent, Pakistan fares badly in this most important indicator of national progress and growth. Literacy rate in East-Asian countries as well as Sri Lanka are above 80 percent. It may take us another five decades to reach that level given our lamentable performance in the past half century.

Urbanisation

One of the important demographic changes that occurs during the growth process is the high rate of urbanisation or the higher rate of increase in urban population as compared to the rural population. Table 3 indicates the growth of urban population in the 5 censuses conducted in Pakistan.

Table 3

Population Size, Percent Share, and Growth Rate of Population,
Urban and Rural, 1951 to 1998

Year	Urban Population			Rural Population		
	Size (000)	Percent of Total	Annual Growth Rate	Size (000)	Percent of Total	Annual Growth Rate
1951	6019	17.8	–	27798	82.2	–
1961	9655	22.5	4.92	33323	77.5	1.84
1972	16594	25.4	4.73	48727	74.6	3.32
1981	23841	28.3	4.38	60412	71.7	2.58
1998	42468	32.5	3.45	88111	67.5	2.24

Source: Population Census Organisation.

The urban growth rate decelerated from 4.9 percent during 1951–61 to 4.7 during 1961–72, and to 4.38 during 1972–81. However, in the last 17 years, it has decreased to less than 3.5, and is at 3.45. This figure is under-estimated. The universal trend among all developing countries is to have a much higher urban growth rate than the rural growth rate. For Pakistan's urban growth rate to have declined so drastically is not understandable. The only factor in favour of slower urban growth is that, during this period, Karachi, the biggest city of Pakistan which has about 1/5th to 1/4th of the total urban population, was very disturbed due to deteriorating law and order situation and there was not much job creation in this dynamic city. Other urban centres in Pakistan

continued to grow. Therefore, either the urban enumeration, which is very difficult, has not been conducted exhaustively or the definition of urban population (i.e., it should either be a Municipal Committee, Municipal Corporation or a Town Committee) is no longer relevant and any agglomeration of more than 20 thousand people which has facilities of electricity, telephone, and road linkages should be treated as urban population. Also, may be during this period the provincial governments have not added new town committees to the list that existed in 1981. By any account, the urban population should have grown by at least 4 percent during this inter-censal period.

Dependency Ratio

The Population Census Organisation has not yet done full calculations of many other characteristics of population like literacy, marital status, religion, etc. They have, however, done sample calculations, and on the basis of sample calculations, the percentages in the different age groups are as follows (in Table 4).

Table 4

Age Structure of Population

Age Group	1981 Male	1981 Female	1998 Male	1998 Female	1981 Sex Ratio	1998 Sex Ratio
0–4	15.1	17.1	14.3	14.9	97.7	104.0
5–9	16.0	16.3	15.7	15.6	108.4	108.4
10–14	13.4	12.4	13.1	12.7	119.3	111.2
15–19	9.7	9.2	10.2	10.5	115.9	105.7
20–24	7.7	7.8	8.7	9.3	108.6	100.7
25–29	6.7	6.9	7.5	7.5	106.6	107.9
30–34	5.4	5.8	6.5	6.2	104.4	114.8
35–39	4.9	5.1	4.9	4.7	105.7	114.4
40–44	4.4	4.5	4.3	4.6	109.2	102.0
45–49	3.7	3.7	3.5	3.6	112.3	104.3
50–54	3.7	3.3	3.2	3.1	124.0	111.5
55–59	2.0	1.9	2.2	2.0	113.3	115.9
60–64	2.8	2.3	2.1	2.0	138.5	116.1
65–69	1.3	1.1	1.2	1.1	125.7	121.6
70–74	1.5	1.2	1.1	1.0	135.1	122.1
75+	1.7	1.5	1.2	1.1	129.0	118.9
Total	100	100	100	100	110.4	108.1

Source: Population Census Organisation.

The dependency ratio, which was 97.2 in the 1981 census, has decreased to 87.3 in 1998. However, this sample shows that the percentage of population beyond 60 years has sharply decreased both for males and females. In 1981, 4.5 percent of the male population was above 64, whereas in 1998, it was reduced to 3.5. Similarly, in 1981, 3.8 percent females were above 64, but in the 1998 census sample figures, this ratio has gone down to 3.2 percent. This shows that life expectancy in Pakistan is not increasing and the death rate, which is normally assumed to be 9, may have increased.

However, in 1981, 44.5 percent male population was under 15, whereas in 1998, this ratio has declined to 43.2. In 1981, 45.8 percent of the female population was under 15, whereas this ratio has declined to 43 in 1998. This clearly shows a decrease in the birth rate, as well as lowering infant mortality.

Sex Ratio and Marital Status

India and Pakistan are the only countries in the world where men outnumber women. The reasons are complex, but the simple explanation is that men are looked after better both when they are infants and in old age. Otherwise in all other countries women outlive men by 3 to 5 years and in the total population, their ratio is higher. The male to female ratio has been improving in last four censuses as indicated below:

1961	115.3
1972	114.3
1981	110.6
1998	108.1

The improvement is slow and gradual, but there is a consistent welcome trend. Normally, there should be 95 men for every 100 women as in advanced countries. As in other aspects of life, Pakistan has a long way to go before it can claim that men and women are being treated at par.

The following Table 5 shows change in marital status based on a sample devised by Population Census Organisation.

Table 5

Marital Status	1981			1998		
	Total	Rural	Urban	Total	Rural	Urban
Never Married	25.11	23.08	29.88	31.13	28.67	35.60
Male	31.51	29.64	35.70	36.49	34.45	39.95
Female	17.83	15.83	22.79	25.32	22.69	30.45
Currently Married	68.75	70.58	64.46	63.33	65.52	59.37
Male	65.24	66.97	61.36	60.32	62.00	57.47
Female	72.74	74.56	68.23	66.60	69.16	61.61

Source: Population Census Organisation.

The above table indicates that age at marriage is going up, both for men and women. It also indicates that economic pressure of forcing young man and woman to postpone marriage. There is a sharp drop of 5 percentage points in marital status of both males and females and this must have led to lower birth rate. Moreover educated males and females have higher expectation of standard of living after marriage and tend to postpone it.

IMPLICATIONS

Demographic Transition

The demographic transition is the shift from high fertility and high mortality stage to low fertility and low mortality stage. In the first stage, there is a sharp decline in mortality due to the introduction of modern health practices, especially on the preventive side. This results in sharp increases of population for about half-century. Some of this increase finds an outlet in emigration. This has happened in Europe, and also in Pakistan in the 1970s and 1980s. In the second stage, there is a decline in fertility but the population is still growing at 1 to 2 percent per annum. This is the stage in which India, Sri Lanka, and Bangladesh are placed at present. In the third stage, population is stable or declining as in countries of Western Europe. The TFR is either 2.1, implying the replacement level, or even below 2 as in European countries, depicting a declining situation. This is normally associated with a very high degree of economic development, i.e., per capita income being more than ten thousand US dollars.

The big question is whether Pakistan has entered the second stage of decline in fertility. The 1998 census confirms that Pakistan has entered the second stage but at a very low pace because its TFR is still hovering around 5, whereas all countries in this stage have a TFR of less than 4 or close to 3. Table 6 shows the Contraceptive Prevalence Rate, Female Literacy, and Female Participation in Labour Force in the South Asian Countries.

Table 6

Leading Female Indicators in South Asia

	Contraceptive Prevalence Rate	Female Literacy (15 +)	Female Labour Force Participation Rate (15 +)
India	41	38	41
Pakistan	24	24	32
Bangladesh	49	26	66
Sri Lanka	66	87	41

Source: Federal Bureau of Statistics, *Gender Statistics in Pakistan.*

Pakistan is far behind India, Bangladesh and Sri Lanka in the speed of decline of its birth rate as its indicators on three major determinants of fertility, i.e. Female Literacy, Contraceptive Prevalence Rate, and Female Participation in Labour Force, compare very unfavourably with other South Asian countries. Pakistan has the lowest female literacy rate of these four countries, and the highest differential with male literacy (which is the double of female literacy). Pakistan has also the lowest female participation rate in the labour force. Pakistan's CPR is also the most suppressed in South Asia, and it has the highest gap of unmet needs of 36 percent because its population welfare programme has not reached all the Pakistanis who have demanded it. Fortunately, the awareness level is 94 percent. Unless our female literacy rate, female labour force participation, and CPR increases, we are only knocking at the doors of the second stage but have not entered it in a proper manner. The UN estimates that Pakistan will reach the replacement level in 2030. There are pessimists who think it might be as late as 2050. Hence, we need to move with strong political will and with very effective field programmes to raise our female literacy, increase the CPR, and put more women in the labour force so that our TFR declines to around 3 in the next decade or two.

Economic Growth

Coale and Hoover (n.d.) have developed a theory which incorporates the effects of changes in the age structure on economic growth. Obviously, high fertility leads to large proportion of children in the society and high dependency. This leads to higher rates of consumption and, as a result, saving and investment falls, leading to a lower rate of economic growth. Conversely, a high ratio of working age adult group to children and elderly dependents leads to higher growth. Hence dependency ratio and economic growth are inversely related. The 1998 census shows that Pakistan's dependency ratio has decreased from 97.2 to 87.3. This development should promote economic growth in the future.

Lower Life Expectancy

Unfortunately, the drop in dependency ratio is due to a fall in the ratio of children under 15 as well as the elderly above 55. This implies that life expectancy in Pakistan is not rising and the increasing number of people in 65+ category are getting worse medical treatment than before. Moreover, as frequently pointed out in newspapers, digestive and respiratory diseases are on the increase due to environmental degradation, pollution and non-availability of potable water. Cardiovascular diseases are also on the increase due to high tension in the middle class caused by sustained inflation, increase in the crime rate, and general overall uncertainty.

CONCLUSIONS

The 1998 census gives a better and truer picture of Pakistan's population than the earlier censuses. As two separate organisations were involved in the exercise, one checking on the other, there was very little scope for over-enumeration, which was alleged in the censuses of 1981 and 1972. However, the figures on urbanisation do not depict the real situation as urbanisation is close to 40 percent rather than 32 percent as indicated in the census figures. The census does indicate a decline in the population growth rate, which may have been caused by a decline in the birth rate as well as an increase in the death rate, but the decline in the birth rate is taking place at a very slow pace. We have to take quick, sustained, and vigorous action, with all sections of the population fully participating, to improve female literacy, CPR, and female participation in the labour force. It should be understood that fertility is not an independent variable but depends mainly on these three determinants, and unless there is marked improvement in these determinants, fertility will remain high.

The 1998 census depicts an improved social scene in Pakistan. The female to male ratio has improved. Literacy has gone up. Infant mortality has probably declined. The dependency ratio has definitely fallen. Pakistan's social or human development indicators which have been abysmally low and had hardly improved since UNDP started publishing Human Development Reports, a decade ago, have definitely begun to improve though not significantly. SAP I did make a dent and SAP II will further lift these indicators.

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Comments

This is a good paper and highlights census-related issues including the relationship between TFR and growth rate and under-enumeration assessment of the family planning programme by the yardstick of the census results. The 1991 census was postponed due to politicisation of the census for almost seven years. This task of complete count was, therefore, completed with the help of the armed forces of Pakistan. The first comment logically underscores the need for elaboration of the census methodology. Since two organisations namely the Census Organisation and the Armed Forces were involved, it would have been better if the author had explained the methodology of census taking and the amount of cooperation and sharing of responsibilities both for coverage and quality of census data. Post enumeration census evaluation survey was not conducted probably due to the involvement of two organisations. In any case the census bulletin describes that 'The Armed Forces supported the Population and Housing work on 100 percent basis'.

The author (himself Census Commissioner for 1981 Census) has doubted the census growth rate by suggesting that the over enumeration in 1981 census that was used as the denominator would make the inter-censal growth rate slightly higher than the one yielded through 1998 census. This created further doubts about the 1981 census results. Some coverage problems can also be argued with the 1998 census. Any decline in the inter-censal population growth rate cannot be attributed with the performance of family planning programme especially in case of Pakistan. First of all, the census taking activity has become politicised in Pakistan. The arguments for over and under enumeration and supporting evidences for such an occurrence in the past probably linger on and hold true for the latest census. Secondly, the TFR (fertility level) is not only influenced by the contraception but by the changes in marriage patterns and in breast feeding practices. The amount of fertility decline due to contraception cannot be credited completely for the programme activities alone. The programme gets credit for those contraceptive methods which are offered through the programme. Therefore, amount of decline due to non-pogramme efforts will have to be deducted for the measurement of net impact of programme activities on TFR, an exercise that has not been done in this paper. It can be argued from the research findings that the programme efforts have contributed to about 9 percent decline in the TFR since its inception.

The relationship between TFR and CBR is indirect. TFR is no doubt age adjusted measure and can be a better measure to compare fertility levels across countries which may otherwise differ in age structure of their respective populations.

The TFR indicates the number of children a woman would have given birth during her life time if the current reproductive behaviour were to remain the same among women at the time of data collection. The TFR is a useful measure which reflects an adequate approximation of average, actual and completed level of fertility. It can simply be termed as a measure for the number of children born per woman.

The TFR also has some limitations as it does not provide any information on the distribution of fertility among the age groups which can influence Crude Birth Rate (CBR) and thus the growth rate of the population. The TFR produces a greater impact on the age structure of population. Even if the TFR of populations may be apparently similar, the resulting CBR figures may differ depending upon the age structure of population that would reveal information on the proportion of women in the reproductive age groups (15–49 years of childbearing age). The CBR is not only influenced by the TFR (level of fertility) but also by the age pattern of fertility. If more children are born to younger women as is the case in Pakistan, the CBR will be higher compared to a hypothetical situation where more children are born to older women which will produce lower CBR, even if the TFR estimates apparently appear to be of the same levels.

The age structure is the result of the past trends of fertility levels. Research findings, it can be argued, have proven that it is mainly the past levels and trends of fertility and not mortality that shape the age structure of a population. (Reference)

The other growth factor, migration also does not produce greater impact on age structure compared to the effect that is produced by the fertility levels.

Dr Sultan Hashmi's work on Karachi led him to conclude that growth of the Karachi city from 1951–61 decade was mainly due to higher urban fertility levels than the popular belief of the influence of migration. He observed that, 'This study shows that in recent years the share of natural entries in the growth of population has been greater than the share of the entries due to migration.—The main current problem of population growth is, therefore, no longer a product of net migration but rather of procreation'. He further added that, 'One thing which is most obvious from these data is that after 53/54 the major part of the growth (roughly more than 60 percent) has been due to natural increase and not due to net migration. During the decade 1951–1961, in spite of a very large migration into Karachi, approximately more than 50 percent of the growth appears to have been due to reproductive change (excess births over deaths). It seems that fertility is the principal source of growth even in a metropolis like Karachi in which there had been an unusual immigration'.

The author has argued that there seem to be an under estimation of urban areas in Pakistan but no sound argument was presented in the paper. Before coming to this point, the urban rural fertility differentials should be looked at before offering any argument.

The population surveys have shown a wider difference in fertility by urban rural place of residence. Sathar observed that, 'Furthermore, the gap between urban and rural

fertility which was largely non-existent until the 70s has been known to widen in recent surveys. The urban-rural fertility differential in the total fertility rate found in the PDHS 1991 was 0.7 children. Using proportions for urban and rural women from the Pakistan Demographic Survey 1993, the PCPS 1994-95 yields a much wider differential of over two children between urban and rural fertility. In fact it can be safely concluded that the decline in urban fertility is the main contributor to the recent decline in national level current fertility.'

The main factor in urban fertility decline was higher contraceptive use levels in urban areas than in the rural areas. Miller observed that', current use of contraceptive methods by residence and province, show that in urban areas nearly one-third of all currently women are using some method of contraceptive method of family planning, up to 36 percent in major urban cities. In rural areas only 11 percent of respondents are using contraception, only about one-third of the proportion in urban areas. The lower fertility levels and higher contraceptive use levels in urban produced an impact on the natural growth of the urban areas. The rural to urban migration probably did take place during the inter-censal period as it did in the past. The pattern of urbanisation in the capital starved developing countries is limited to only few urban centres where profuse economic opportunities are available. Therefore the urbanisation is concentrated to few urban centres in comparison to the spread of urbanisation as is witnessed in the developed world.

Average Household Size, by Provinces of Pakistan: Census 1981,
PIHS 1995-96 and Census 1998

	Census-1981	PIHS-1995-96	Census-1998
Pakistan (Total)	6.7	6.6	6.6
Rural		6.6	6.6
Urban		6.6	6.8
Punjab	6.4	6.4	6.8
Rural		6.3	6.7
Urban		6.7	6.9
Sindh	7.0	6.4	5.8
Rural		6.4	5.3
Urban		6.3	6.4
NWFP	6.8	7.9	7.6
Rural		7.9	7.7
Urban		7.8	7.2
Balochistan	7.3	7.1	6.4
Rural		7.0	6.1
Urban		7.5	7.4

Another available index from the 1998 census and the PIHS survey 1995-96 is the average number persons per household. This index is used to evaluate the coverage of the complete count with that of the sample surveys. This compatibility of the censuses with the surveys is essential because the scientifically designed and executed surveys where every individual has equally likely chance of being selected in the sample are representative of the population parameters and also hold the potential to replace the future census enumeration. The next census in the US in the year 2000 will actually be carried out through a sample survey.

This index is compatible for both the provinces of Punjab and NWFP in urban and rural areas except rural Balochistan and Sindh provinces. The difficulties faced by the census officials in Balochistan are acknowledged in the Census Bulletin of Provisional results. But the average number for rural Sindh is almost one person less than the sample. It is safe to argue that approximately three million people in rural Sindh were under enumerated during the 1998 census.

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